

Metro Plant Solids Management Improvements Facility Plan



August 30, 2018 Public Hearing



Welcome

Wendy Wulff

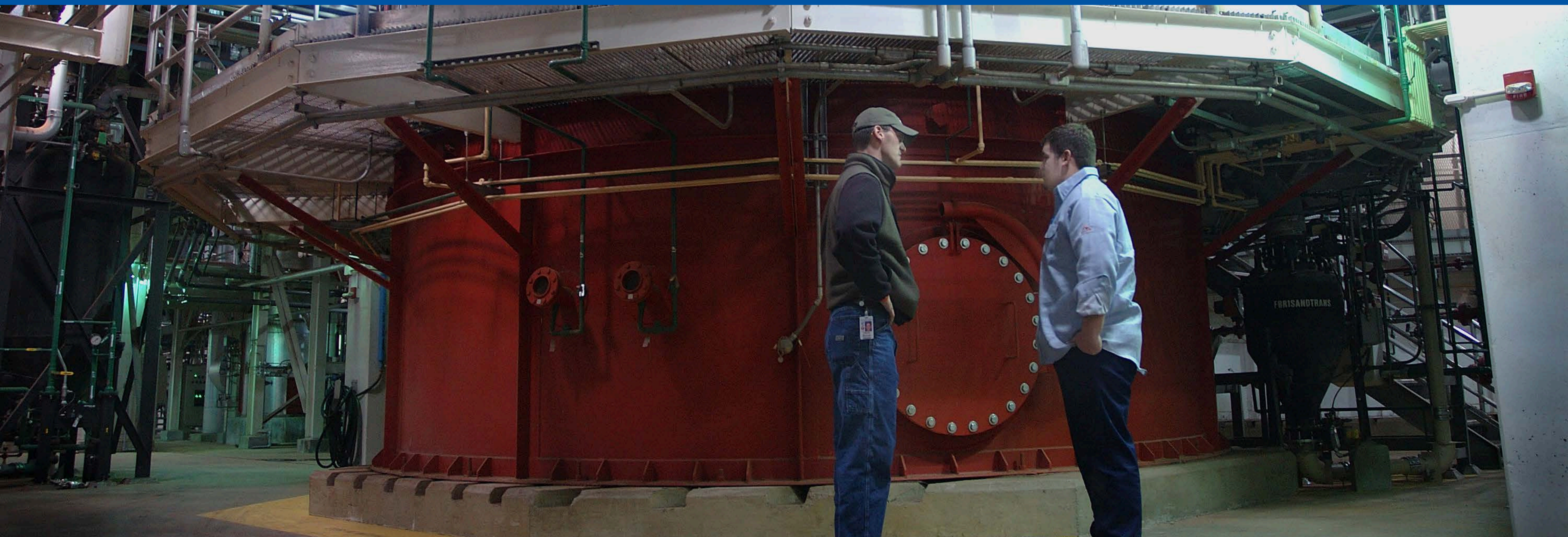
Metropolitan Council Member – District 16



Public Hearing Objectives



**Share information and receive comments on the
Metro Plant Solids Management Improvements Facility Plan**



Public Hearing Agenda



Open House

15 Min

Boards



Presentation

30 Min

- Overview
- Existing Facilities
- Alternative Evaluation
- Recommended Plan
- Summary



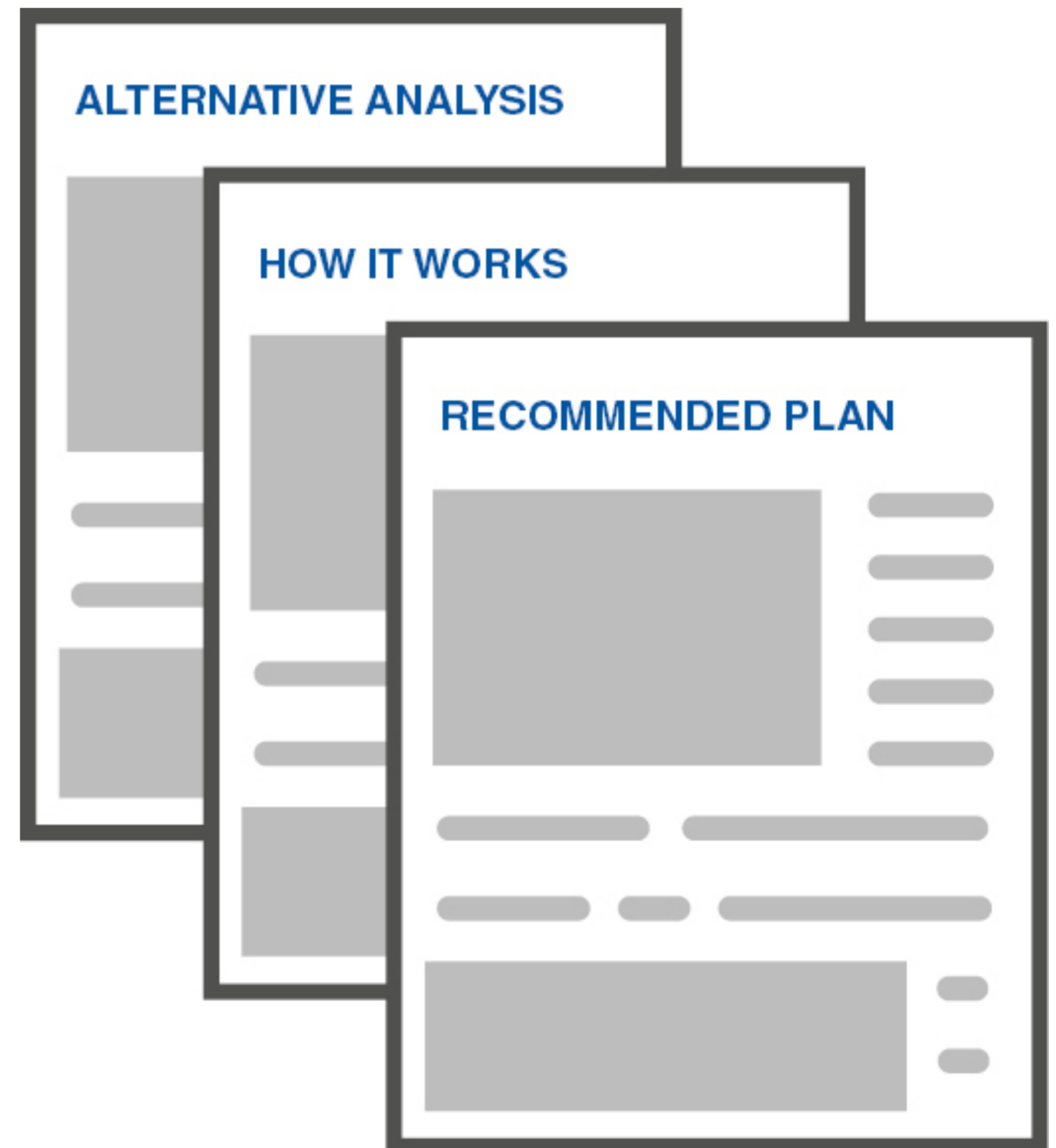
Comments

30 Min



Open House

15 Min



Overview

Jeannine Clancy
Assistant General Manager

Environmental Services



Protects public health and safety



Protects the environment



Fosters the economic growth of the region

WHO WE SERVE

7-county Twin Cities Metro Area

109 communities

2,600,000 people

OUR FACILITIES

8 wastewater treatment plants

610 miles of interceptors

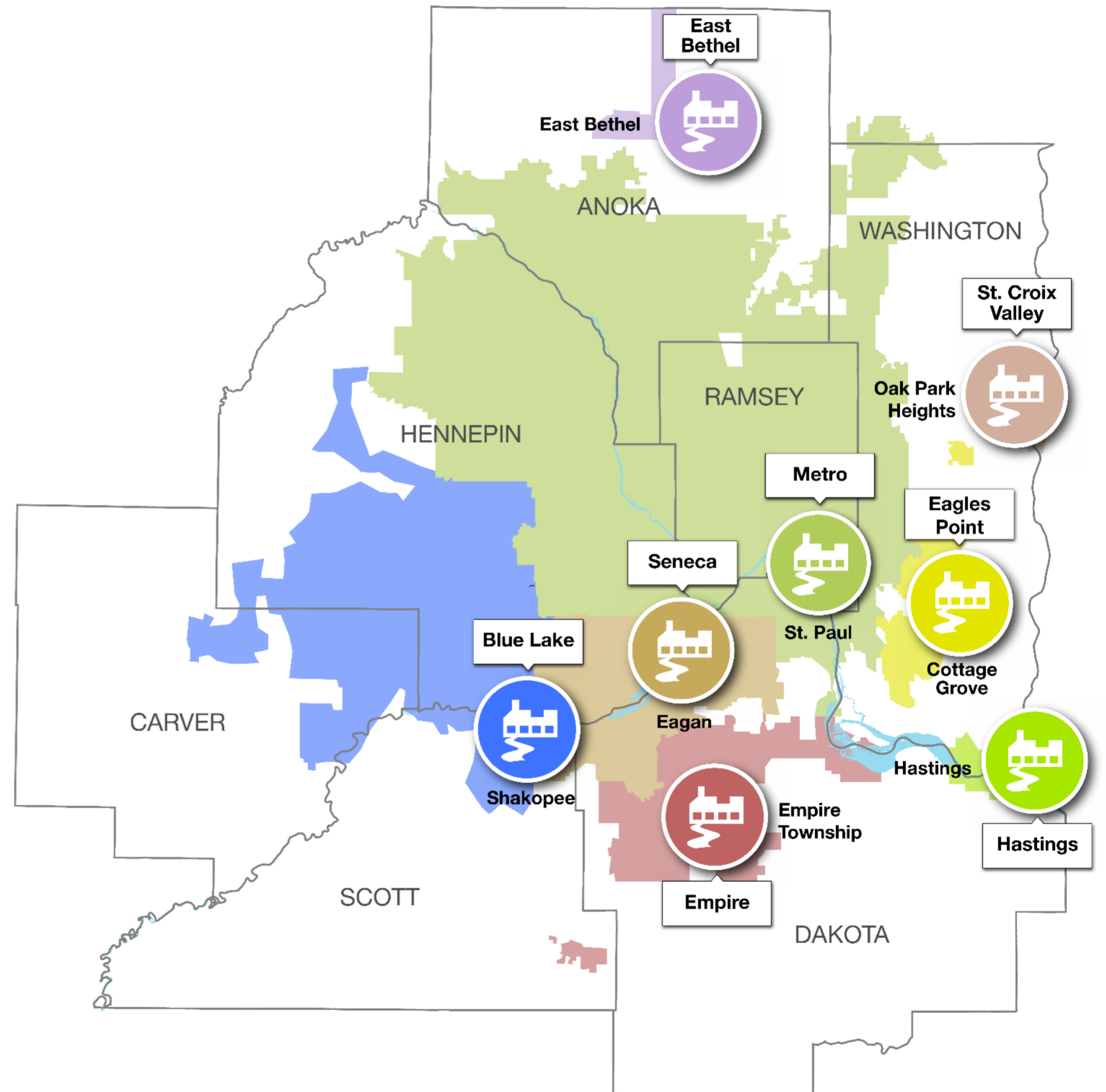
250 million gallons per day (avg)

OUR ORGANIZATION

600+ employees

\$7 billion in valued assets

\$140 million / yr capital program



Project Overview Video



Project Location

The Metro Plant is located southeast of downtown Saint Paul.



Metro Plant

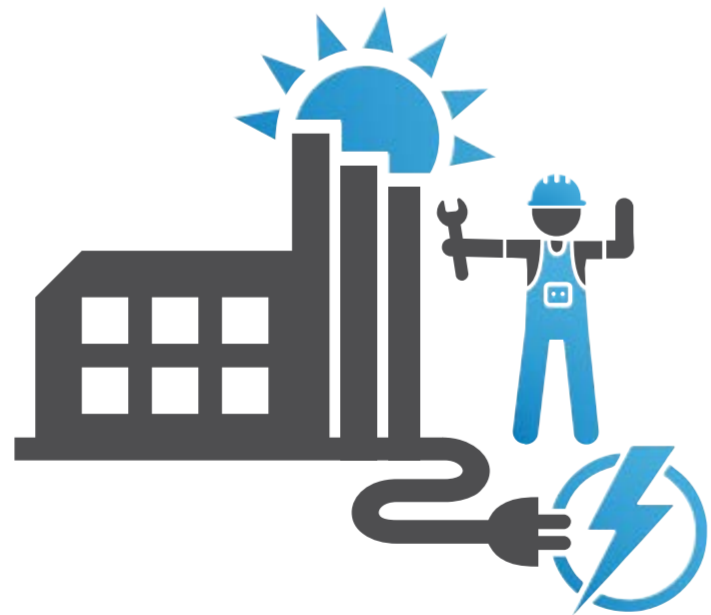
- Treats 180 million gallons of wastewater every day for 66 communities
- Processes 850 wet tons of wastewater solids every day for 73 communities.

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

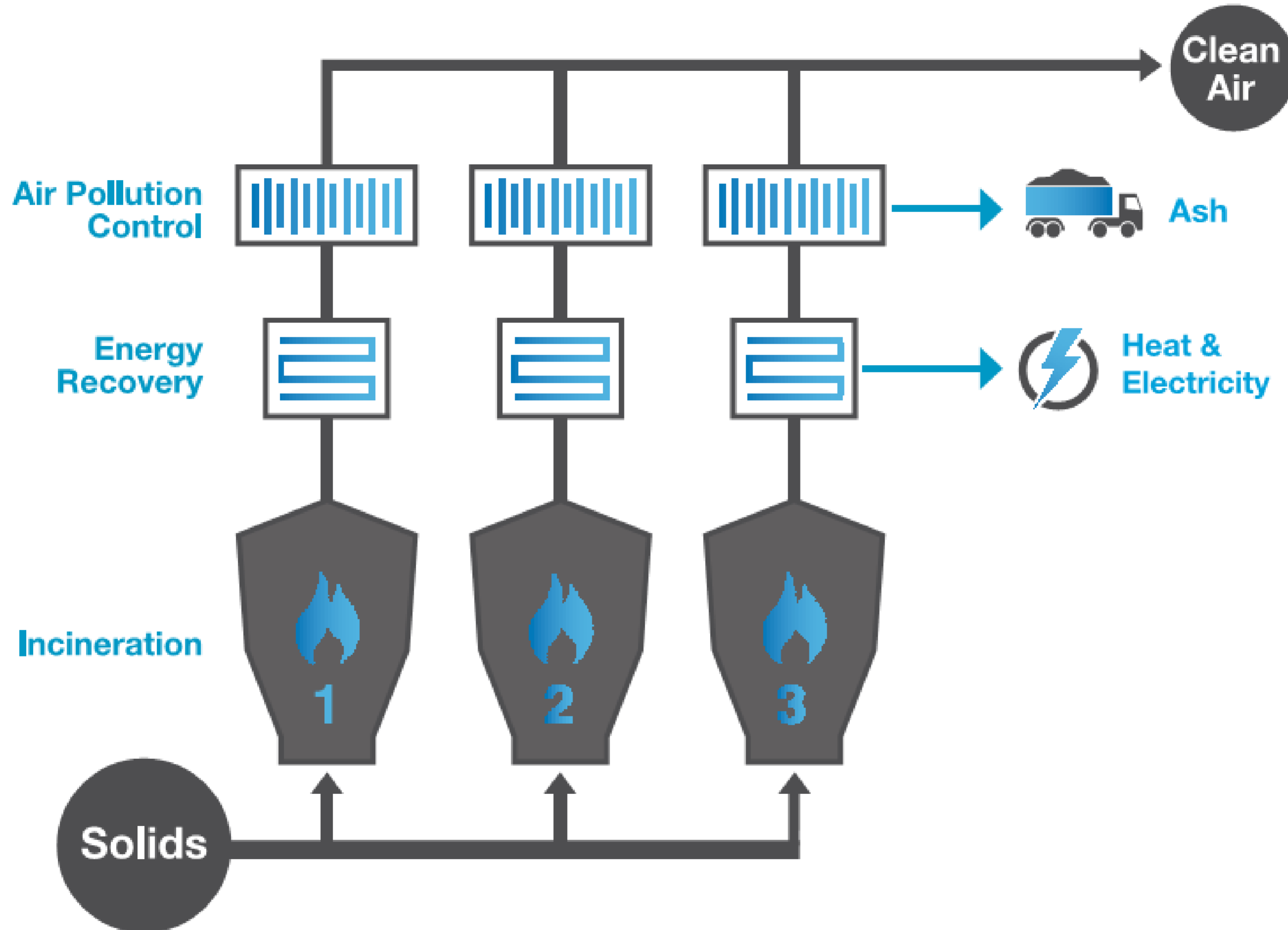


Adding Solids Processing Capacity at the Metro Plant is Important for the Region.

Existing Facilities

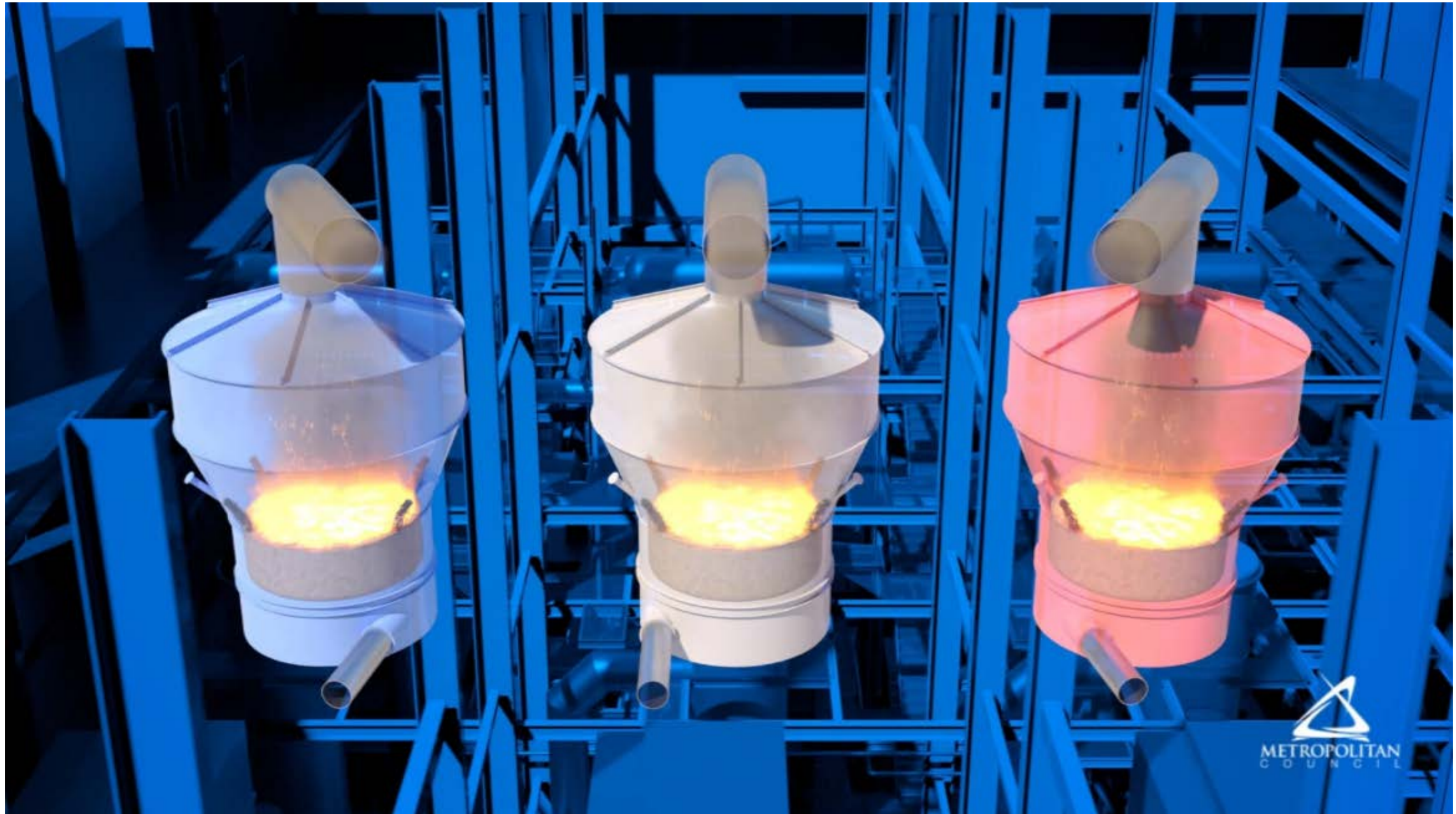
Stephen Norton
Senior Engineer

Existing System

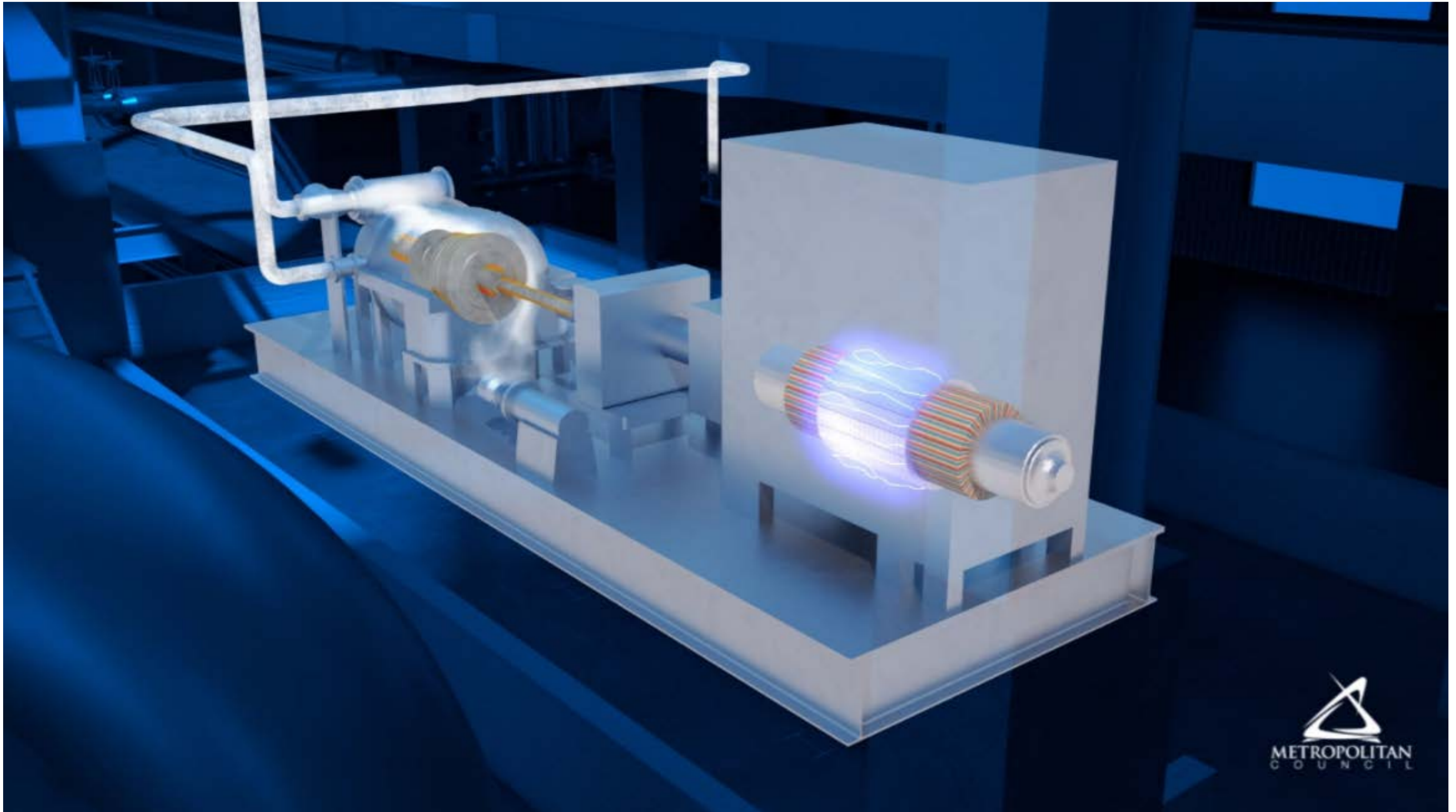


The Metro Plant has one of the most advanced and highest performing incineration systems in the country.

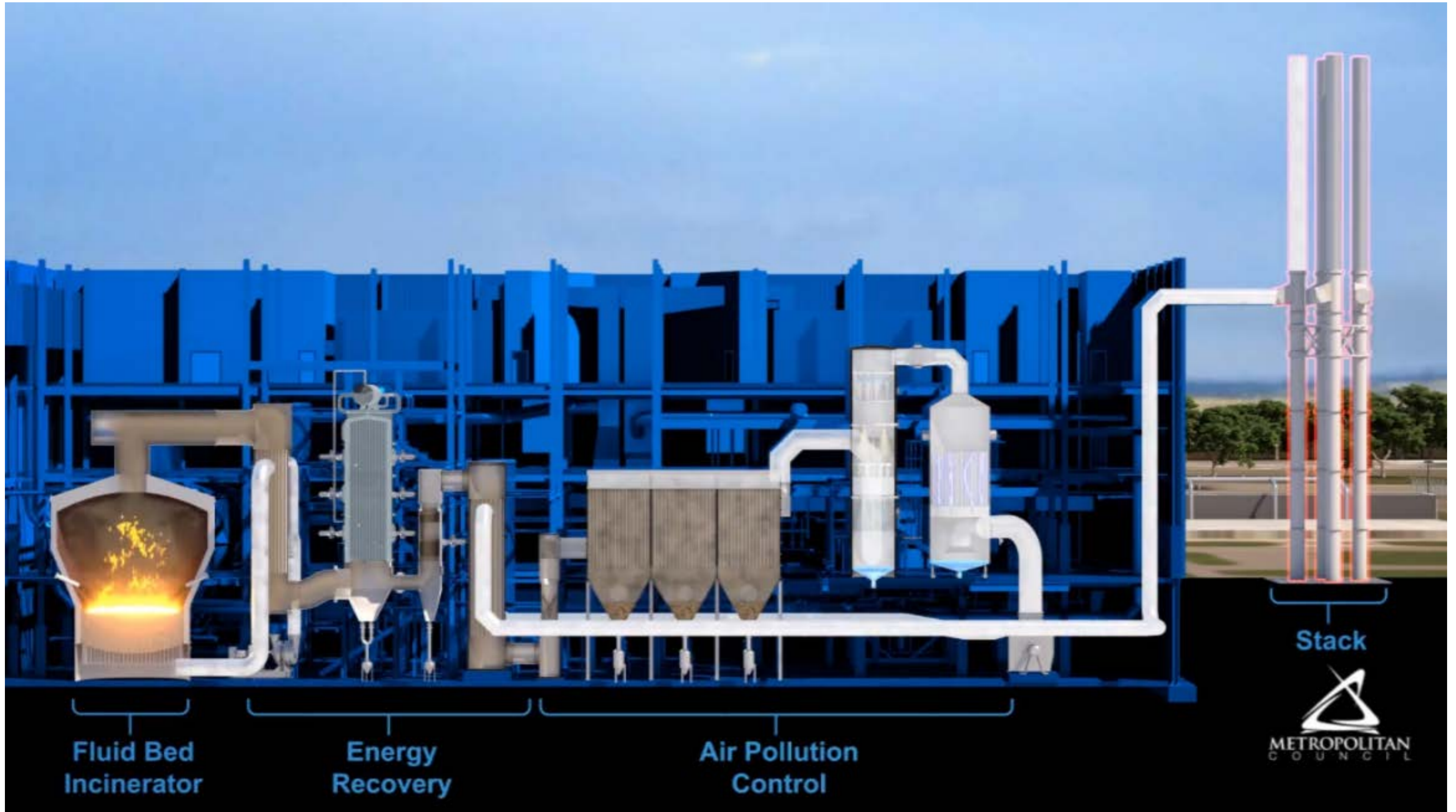
Incineration Video



Energy Recovery Video

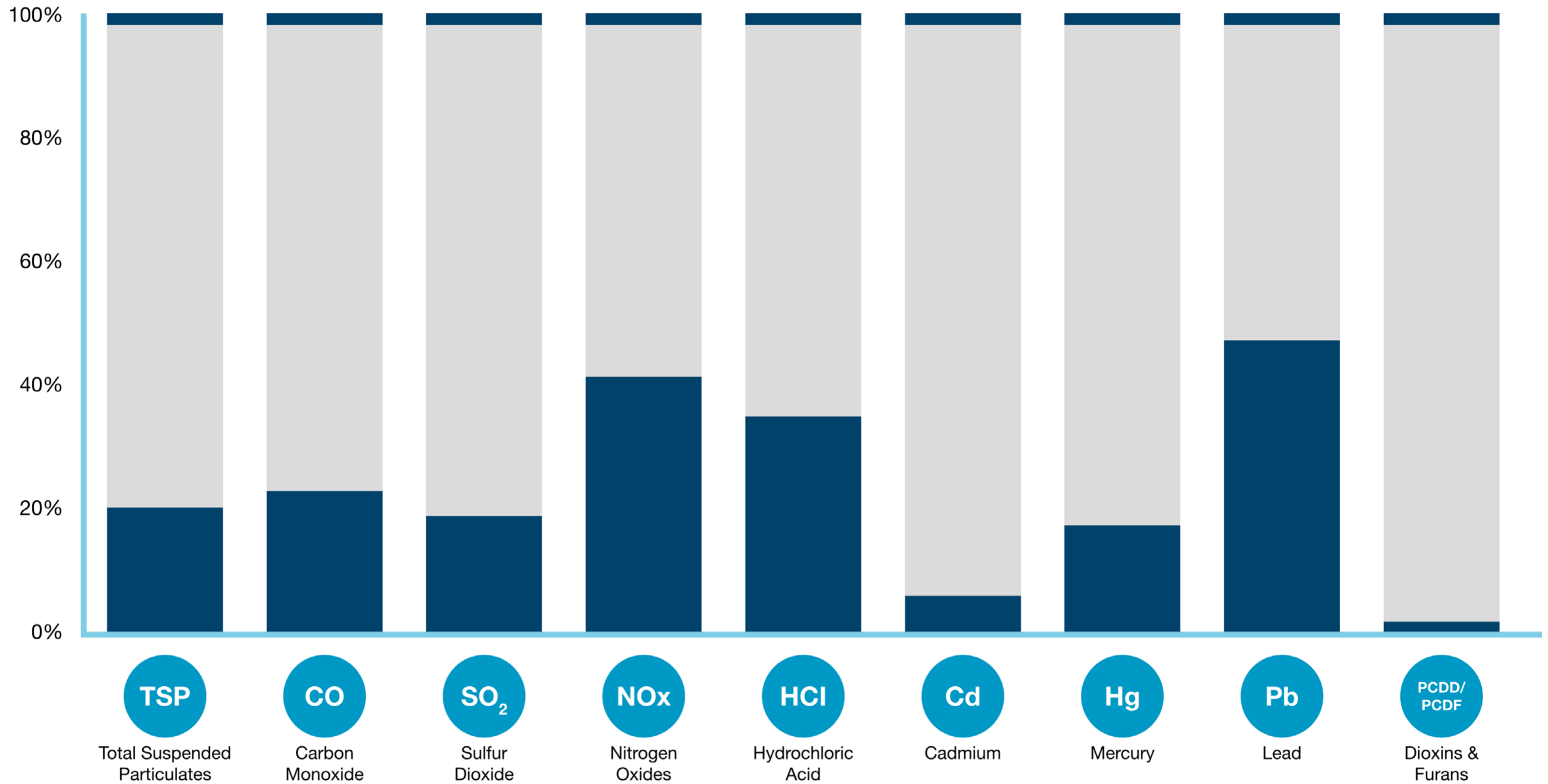


Air Pollution Control Video



Exceptional Air Quality

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.

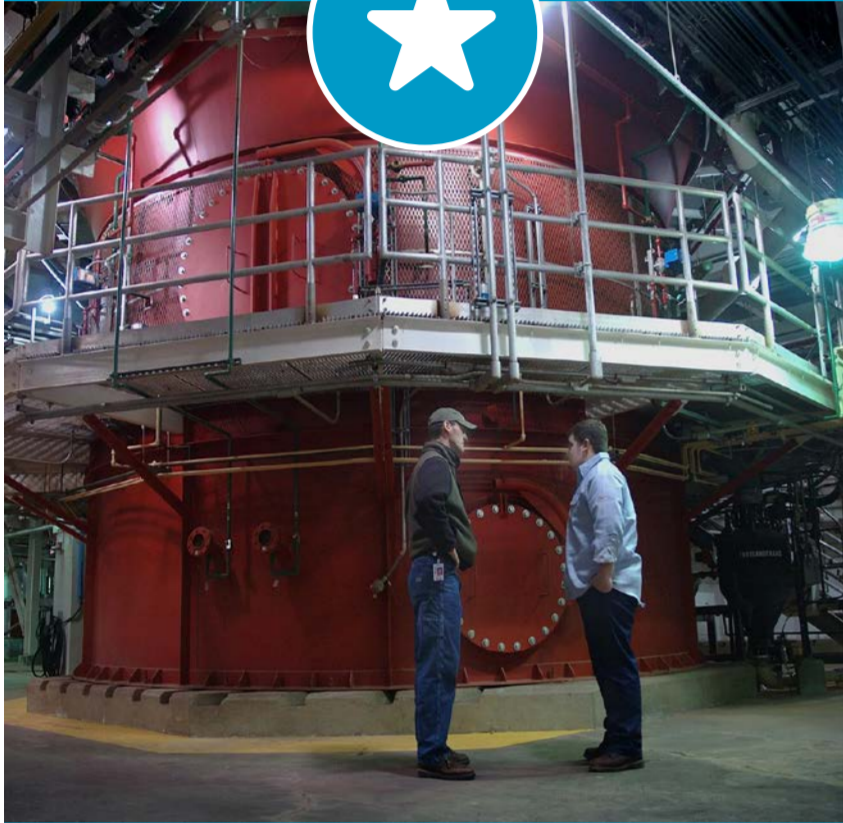
Alternatives Evaluation & Recommended Plan

Rene Heflin

Plant Engineering Manager

Alternative Analysis

Alternative 1



**Fourth
Incinerator**

Alternative 2



**Digest /
Incinerate**

Alternative 3



**Digest / Dry /
Sell Product**

Alternative 4

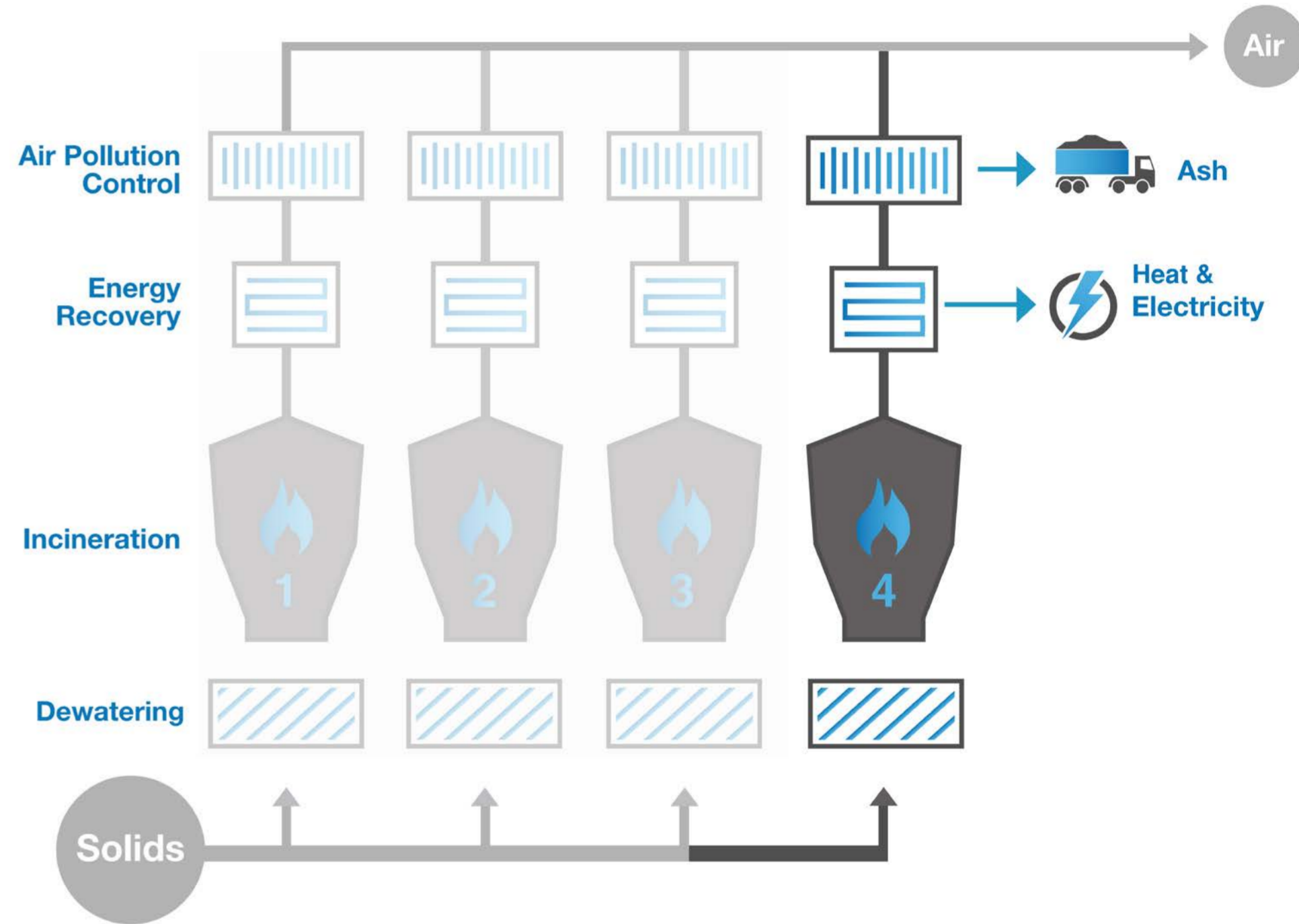


**Digest / Land
Apply Cake**



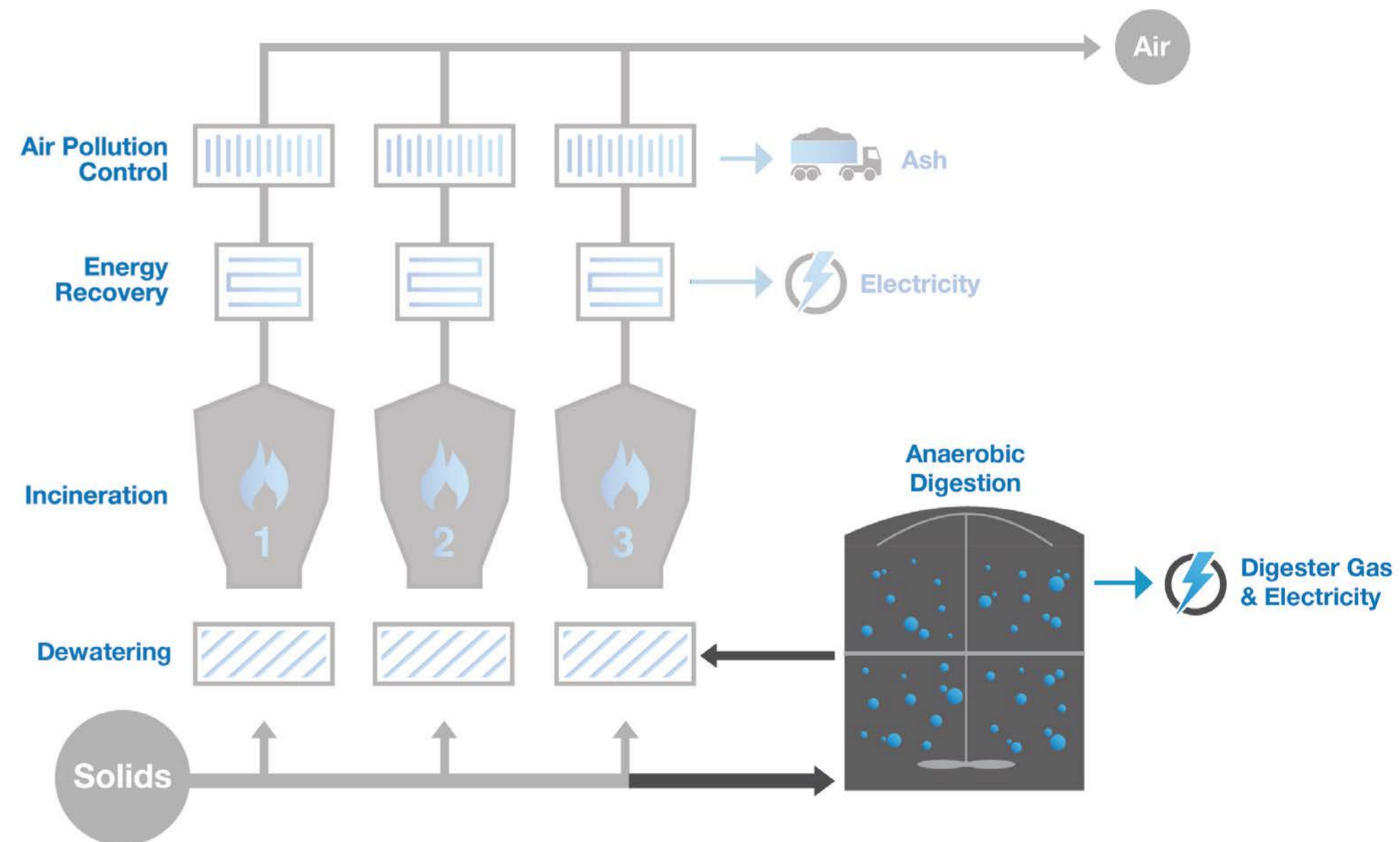
Adding a fourth incinerator is the recommended alternative.

Alternative 1: Fourth Incinerator



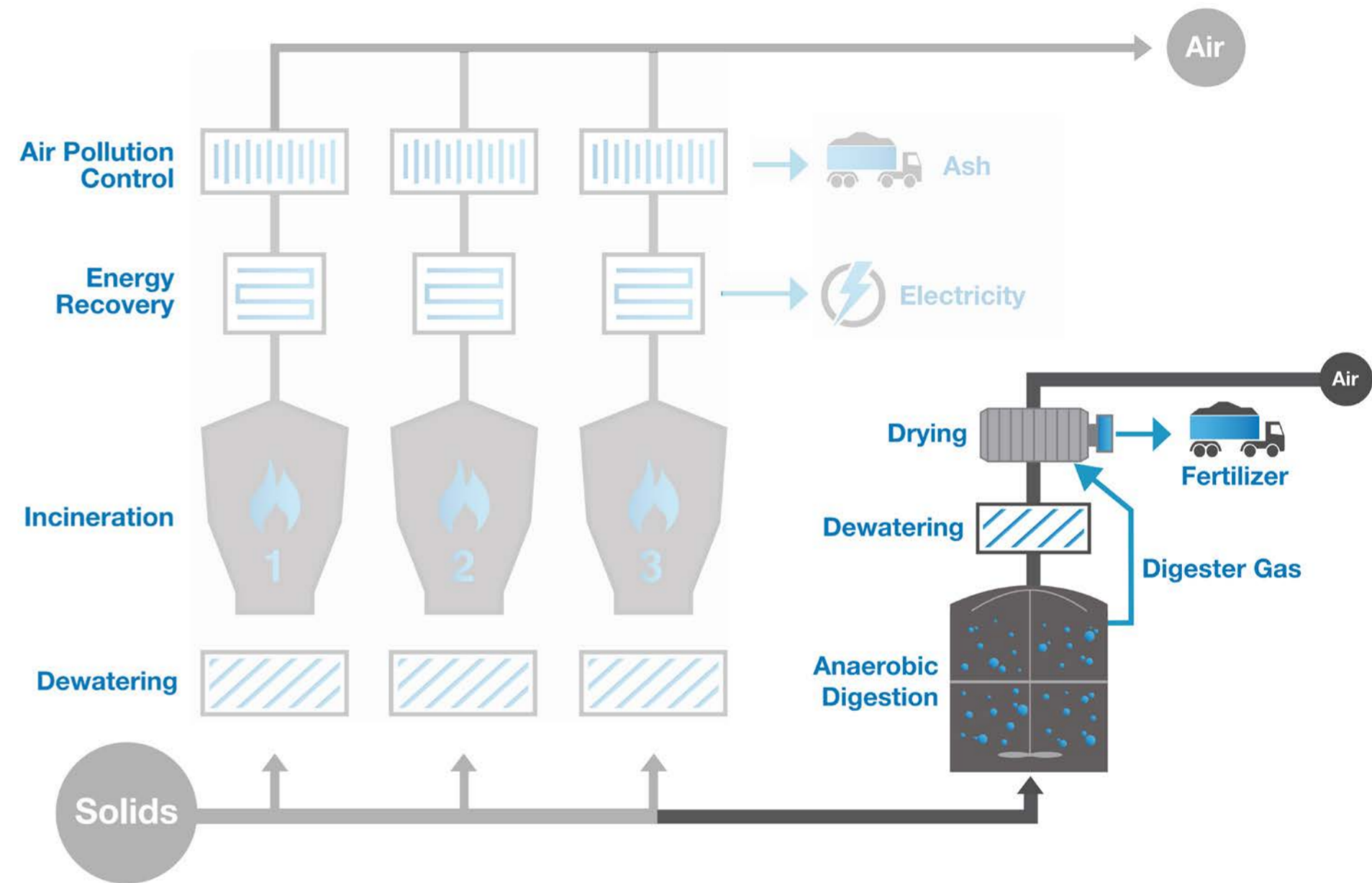
A fourth incinerator with energy recovery and air pollution control equipment similar and parallel to the existing incinerators.

Alternative 2: Digest / Incinerate



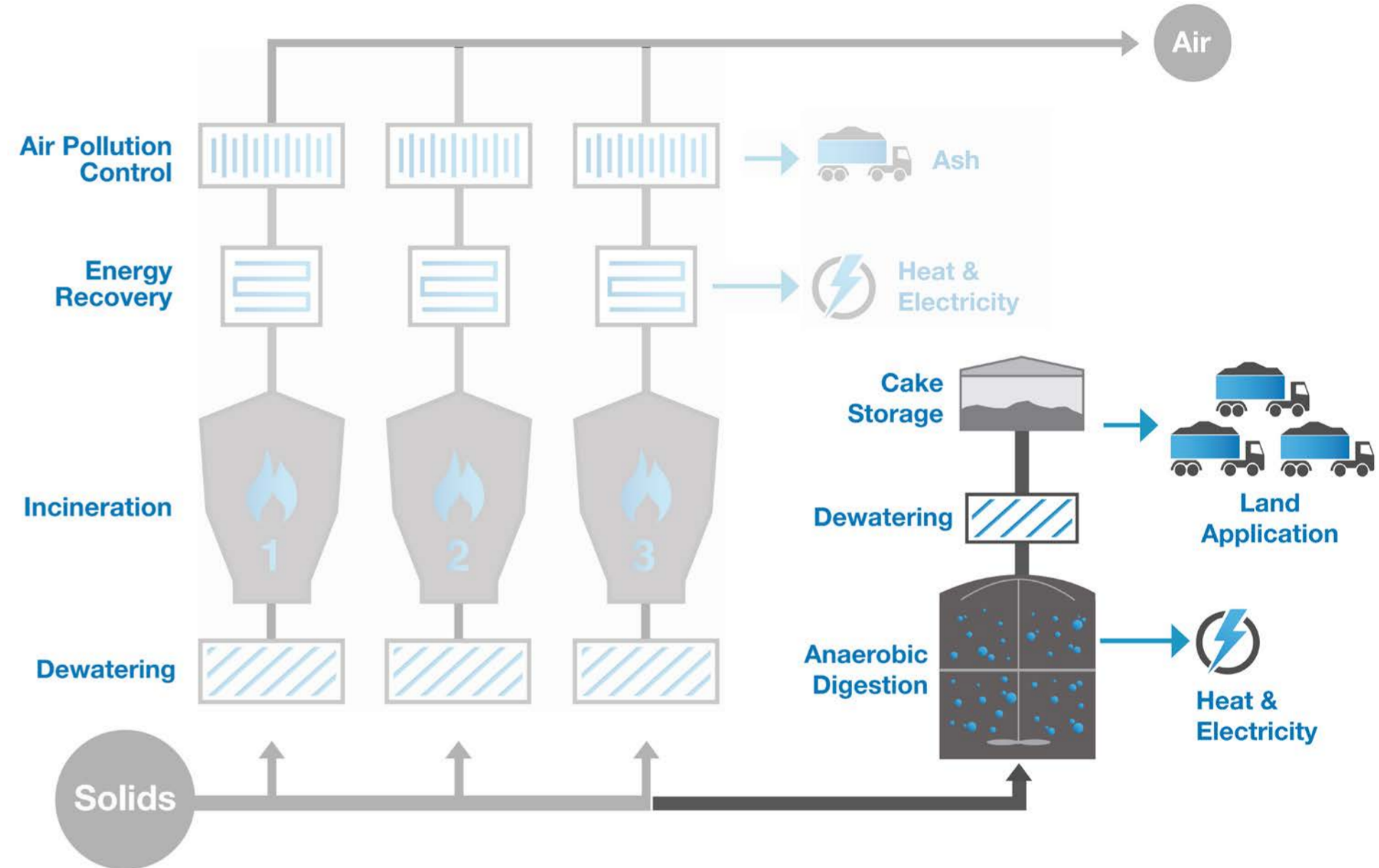
Anaerobic digesters with energy recovery for a portion of Metro's solids which are then dewatered and fed to the existing incineration process.

Alternative 3: Digest / Dry / Sell



Anaerobic digesters with energy recovery for a portion of Metro's solids which are then dried to a pellet type product and offered for sale.

Alternative 4: Digest / Land Apply



Anaerobic digesters with energy recovery for a portion of Metro's solids which are then dewatered and land applied.

Summary Cost Table



Cost	Alt 1: Fourth Incinerator	Alt 2: Digest / Incinerate	Alt 3: Digest / Dry / Sell	Alt 4: Digest / Land Apply
Capital Present Worth	\$99M	\$169M	\$189M	\$248M
O&M Present Worth	\$18M	\$65M	\$90M	\$77M
Total Present Worth	\$117M	\$234M	\$279M	\$325M

The fourth incinerator cost 50% less to construct, operate and maintain than the next lowest cost alternative.



Air Emissions



Energy Recovery



GHG Emissions



Nutrient Recovery



The fourth incinerator was found to be the most sustainable alternative.

Community Impact



Air Quality



Odors



Offsite Land Impacts

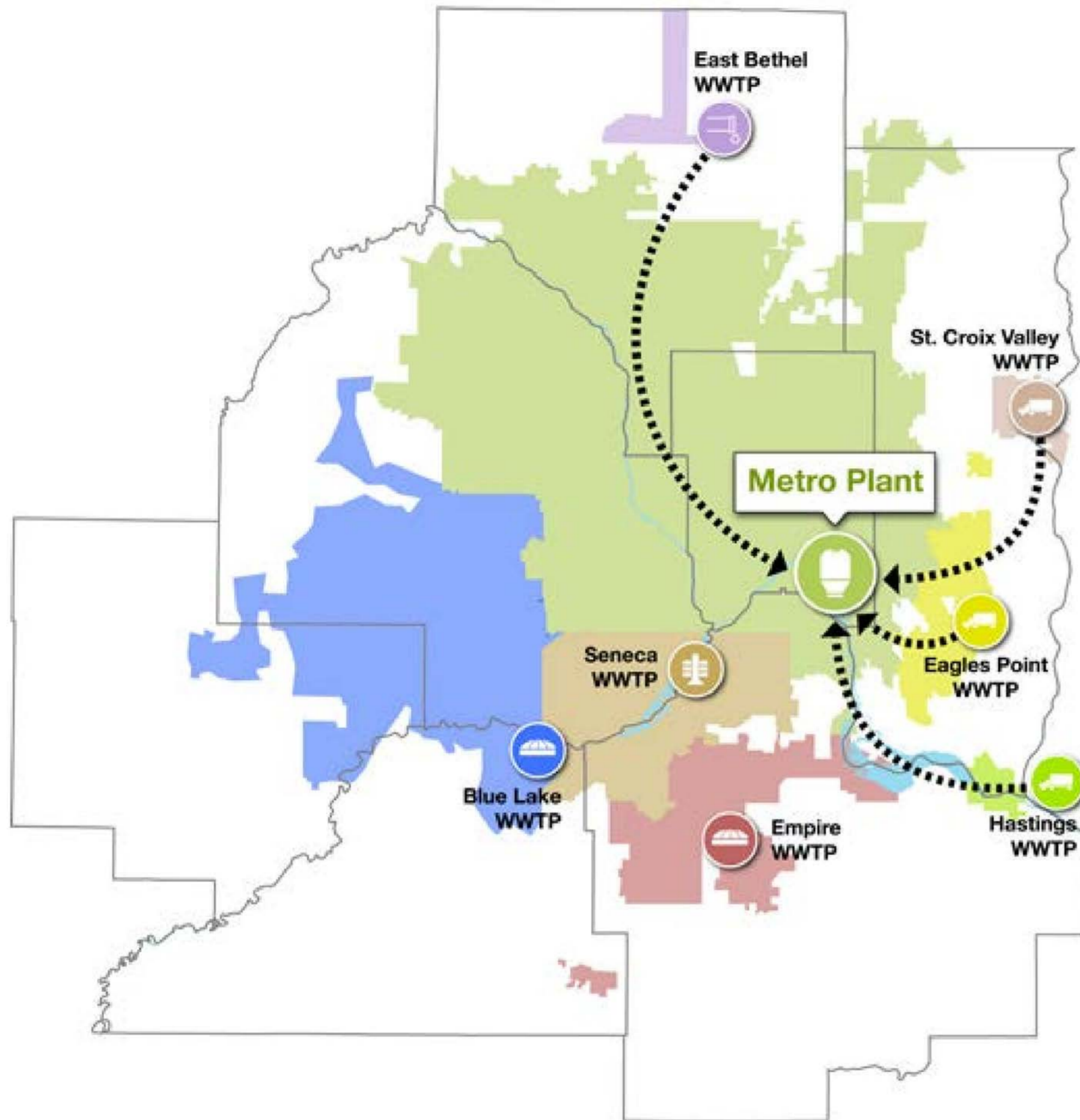


Trucking



A fourth incinerator provides the lowest impact to surrounding communities.

Reliability



- **Fourth incinerator allows Metro to backup other MCES facilities**
- **Fourth incinerator provides continuity of operations**

A fourth incinerator allows Metro to perform renewals and preserve existing infrastructure.

Fourth Incinerator

**Cake
Receiving**

Dewatering

**Fourth
Incinerator**

**Energy
Recovery**

**Air Pollution
Control**

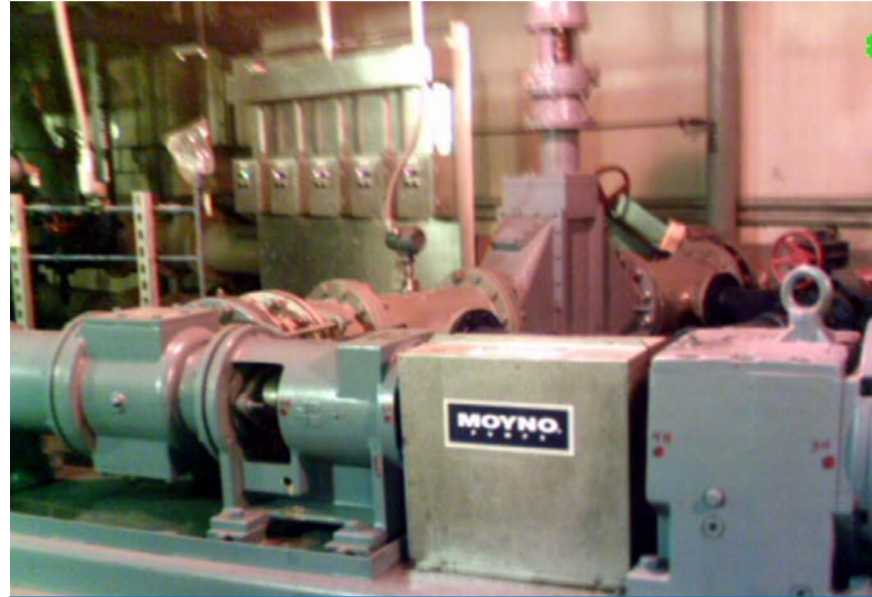


Fourth Incinerator Cost Estimate

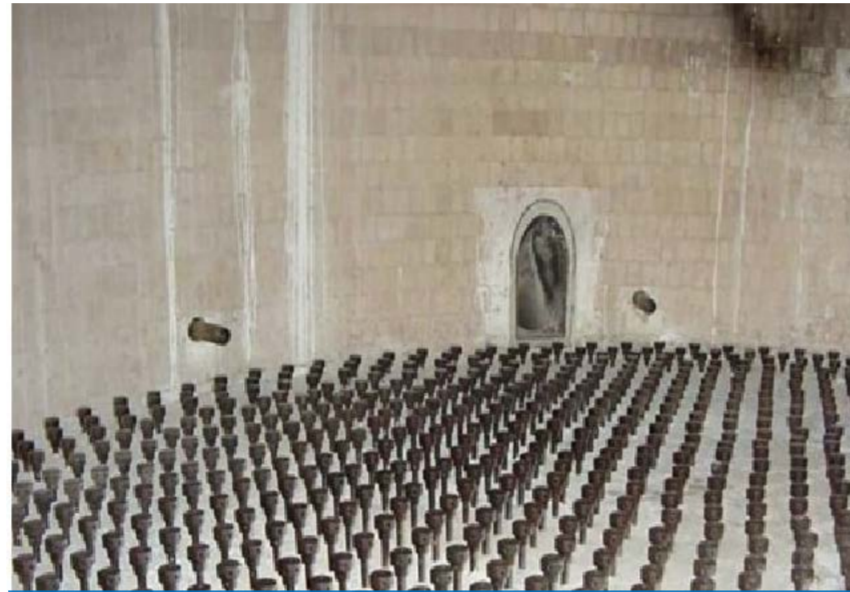


Item	Costs
Mobilization / General	\$7.7M
Site Work / Building	\$31.8M
Cake Receiving	\$1.9M
Dewatering	\$5.8M
Incineration	\$29.6
Energy Recovery	\$8.1M
Air Pollution Control	\$11.3M
Contingencies	\$28.9M
Engineering	\$25.0M
Total	\$150.1M

Renewal of Existing Incinerators



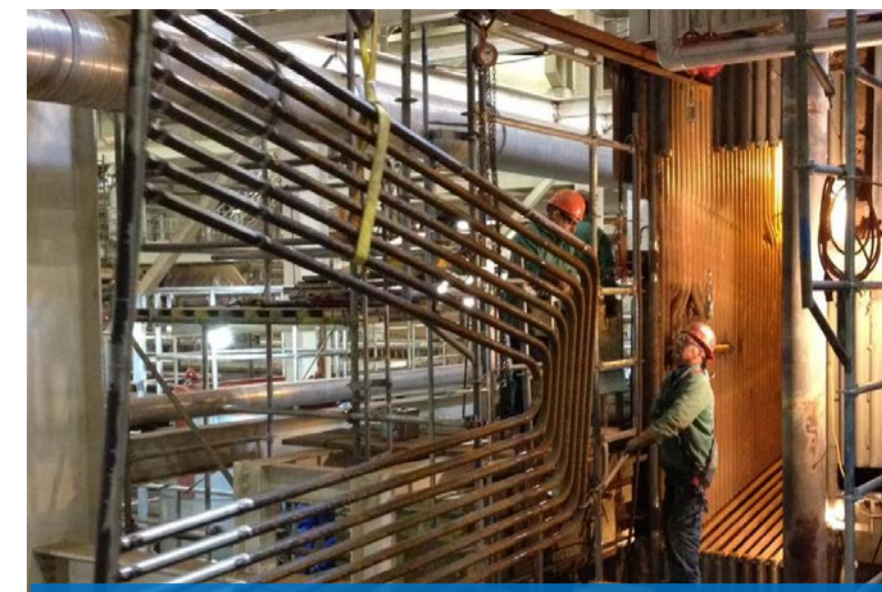
Sludge Storage Pumps



Fluid Bed Reactor



Primary Heat Exchangers



Waste Heat Boilers



Baghouse



Wet ESP



Expansion Joints

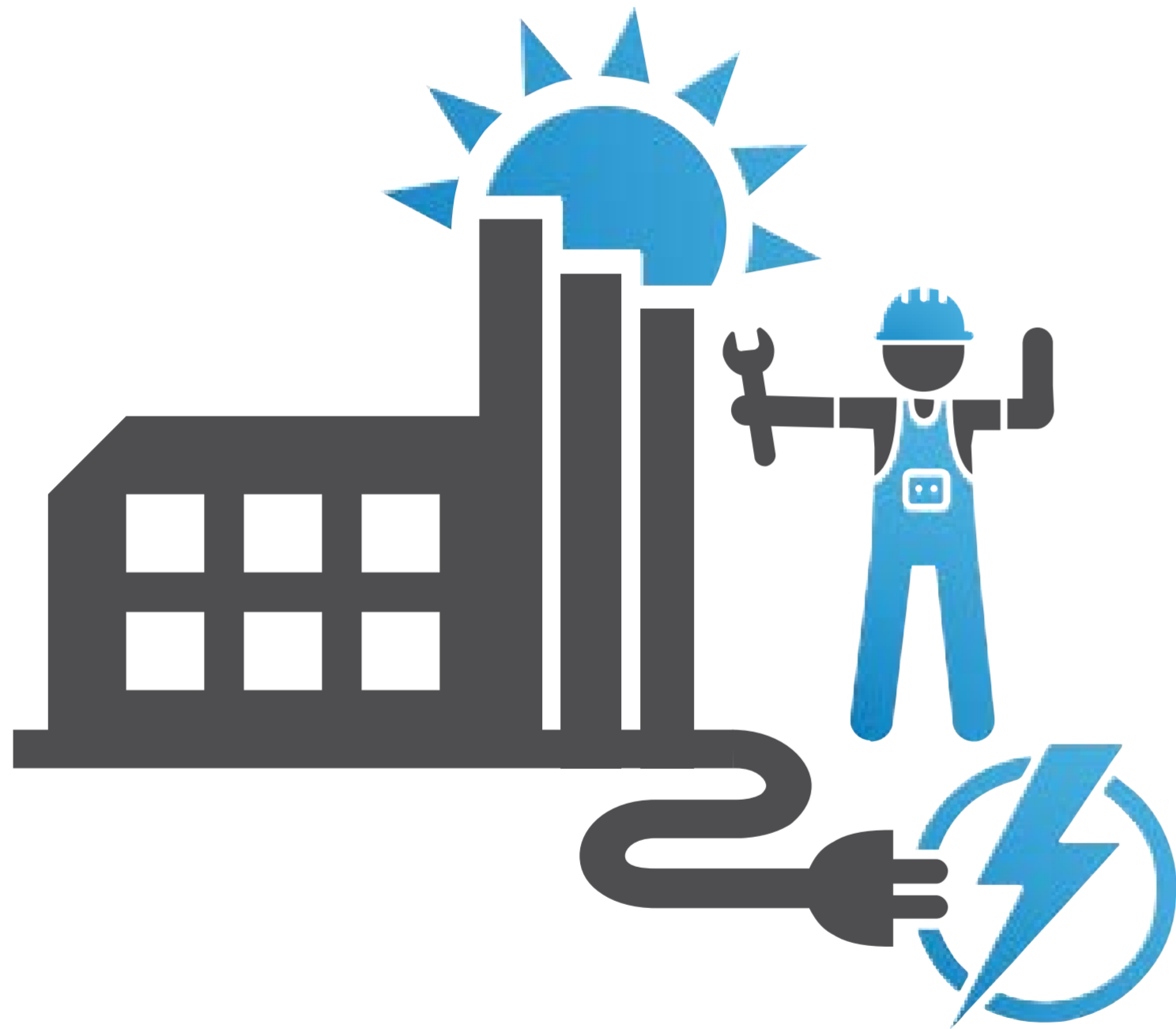


Ash Conveyance

Estimated Downtime Per Incinerator

Six-months → One-year

Renewal Cost Estimate



Item	Costs
Mobilization / General	\$1.6M
Sludge Feed	\$2.6M
Incineration	\$4.0M
Energy Recovery	\$7.3M
Air Pollution Control	\$1.9M
Electrical / Instruments	\$1.9M
Contingencies	\$5.8M
Engineering	\$5.0M
Total	\$30.2M

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.

Impacts on Rates

Municipal Wastewater Charge Rate Impact

+ \$0.40 to
\$145.26/year



MCES charges communities a **wholesale** fee for annual volume



Communities charge businesses/residents a **retail** fee



On average, **60%** of a resident or business's sewer fee is MWC.

Sewer Availability Charge Rate Impact

+ \$5.27 to
\$2,485.00/connection

MCES uses SAC to pay a portion of debt service incurred by financing capital improvements



Local governments pay SAC to MCES



Resident/business owner pays SAC + local fees to their local government

The timing of the fourth incinerator was carefully coordinated with other capital projects to not have a significant impact on rates.

Project Schedule



Facility Plan Adoption in October

**Design & Permitting
2019 - 2021**

**Fourth Incinerator Construction
2021 - 2024**

**Renewal of Existing Incinerators
2024 - 2027**

The existing incinerators will be 20 years old in 2025.

Providing Feedback



Web

www.metrocouncil.org/metrosolids



Email

info@metrosolids.com



Voice

651-691-9124



Mail

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390 Robert St. North
Saint Paul, MN 55101**



Receiving Comments

September 10, 2018

Comments