Spokane’s Waste to Energy Disposal System

January 2026

Overview

Provides **disposal for 250,000 tons** of municipal **solid waste annually** and **generates electricity** as a byproduct.

Part of a **comprehensive solid waste system** that:

- **Encourages recycling and composting**.
- **Supports the state objectives** to reduce, reuse, and recycle waste with lower lifecycle emissions than other disposal options.

City of Spokane is committed to:

- Implementing **programs to reduce waste**.
- Increasing **organics diversion**
- Meeting Washington's **2050 vision of net emissions neutrality**.
- **Manage waste locally** to avoid placing social and environmental justice burdens on low-income communities.
- Supporting **innovative solutions**.

History

Part of an overall solution to handle the community's solid waste

Replaced leaking landfills that had become Superfund sites

Choice **protected** our sole-source **aquifer**

Waste **disposed of locally, reducing burden** on other communities

The State of Washington was a partner in the facility

Provided a **$60 million** grant

From the sale of $450M in bonds as part of **voter-approved State Referendum 39** in 1980

25 Year Design/Build/Operate contract with Wheelabrator

Construction started in 1989.

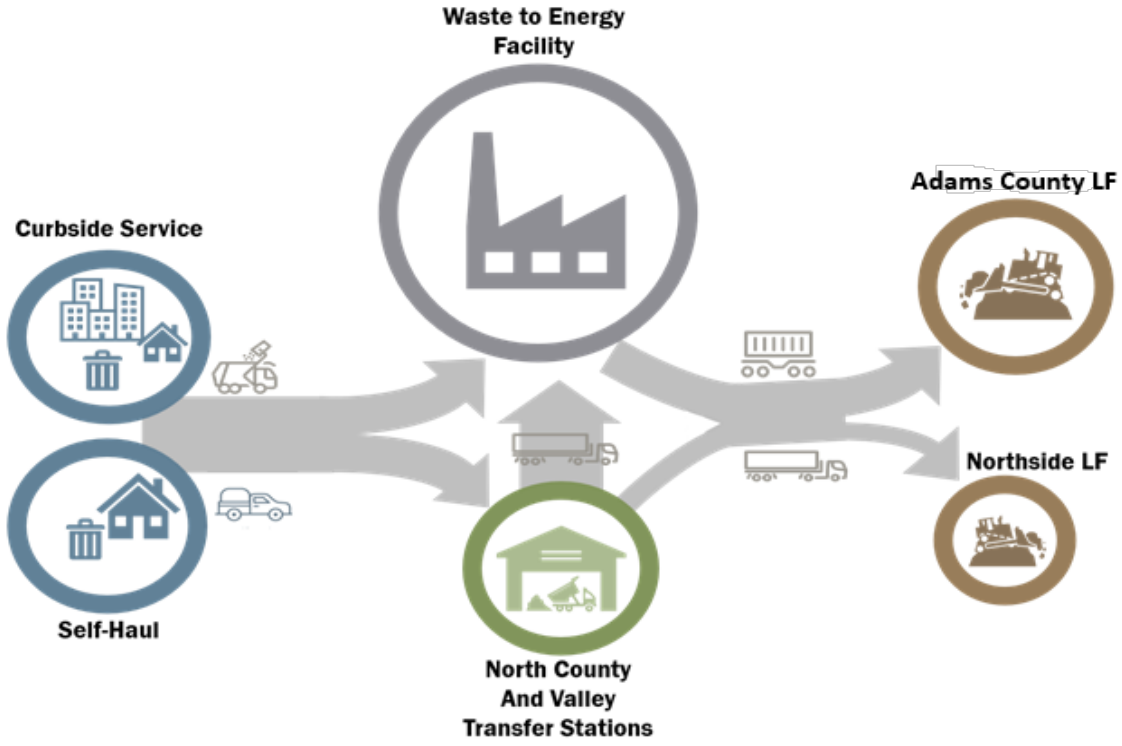
Plant operational in 1991

City took over operations in 2014

Solid Waste System operated to maintain affordability

Regional Role

- Part of the Spokane County Solid Waste System
  - ➢ Serves as the center of the regional strategy
  - ➢ Partnerships throughout Spokane County to promote waste diversion and recycling.

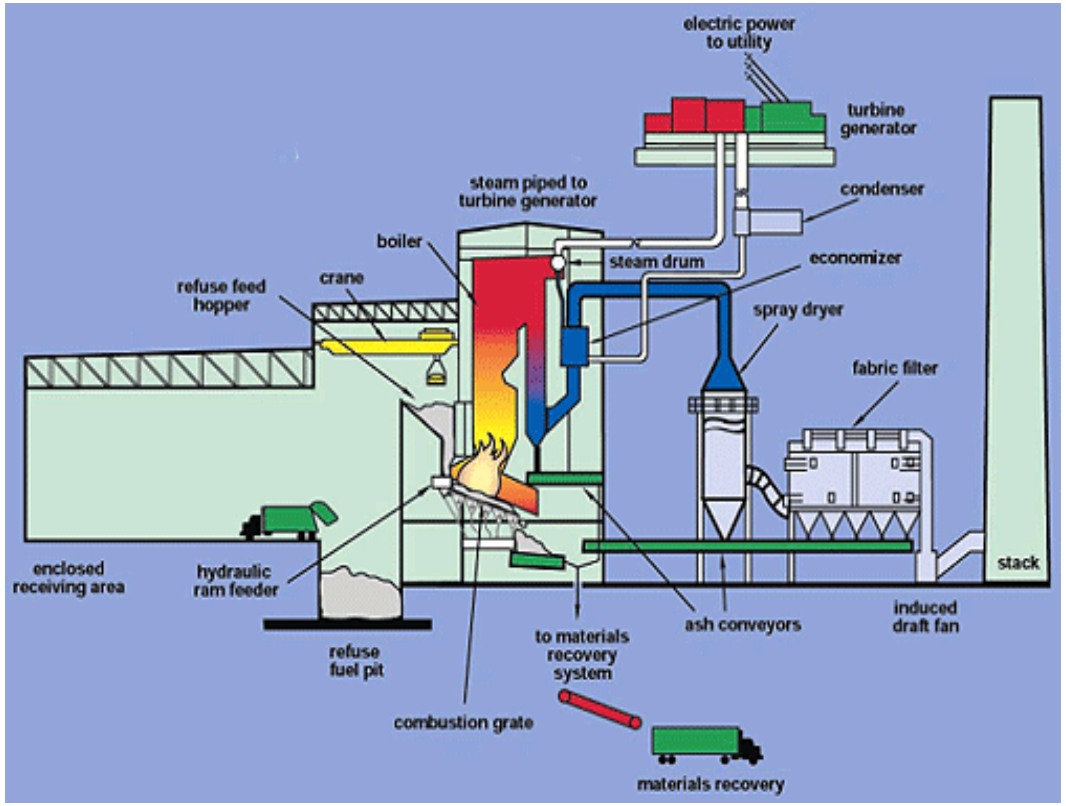


Current Customers

- Spokane County **Transfer Stations** (35% of System Tons)
- **Curbside & Commercial Collection** (48%)
  - City of Spokane (37%)
  - City of Cheney
  - City of Medical Lake
  - City of Airway Heights
  - Fairchild Air Force Base
- City and County Residents **Self Haul** (16%)
- **Special Handling** and **Assured Destruction** Services (1%)
  - Law Enforcement – Seized narcotics, evidence, weapons
  - Federal or International Regulated Waste – Airlines, Antarctica Research Stations, Pharmaceutical takebacks, etc.
  - Corporate Landfill Free Accounts – Bigelow, Keurig

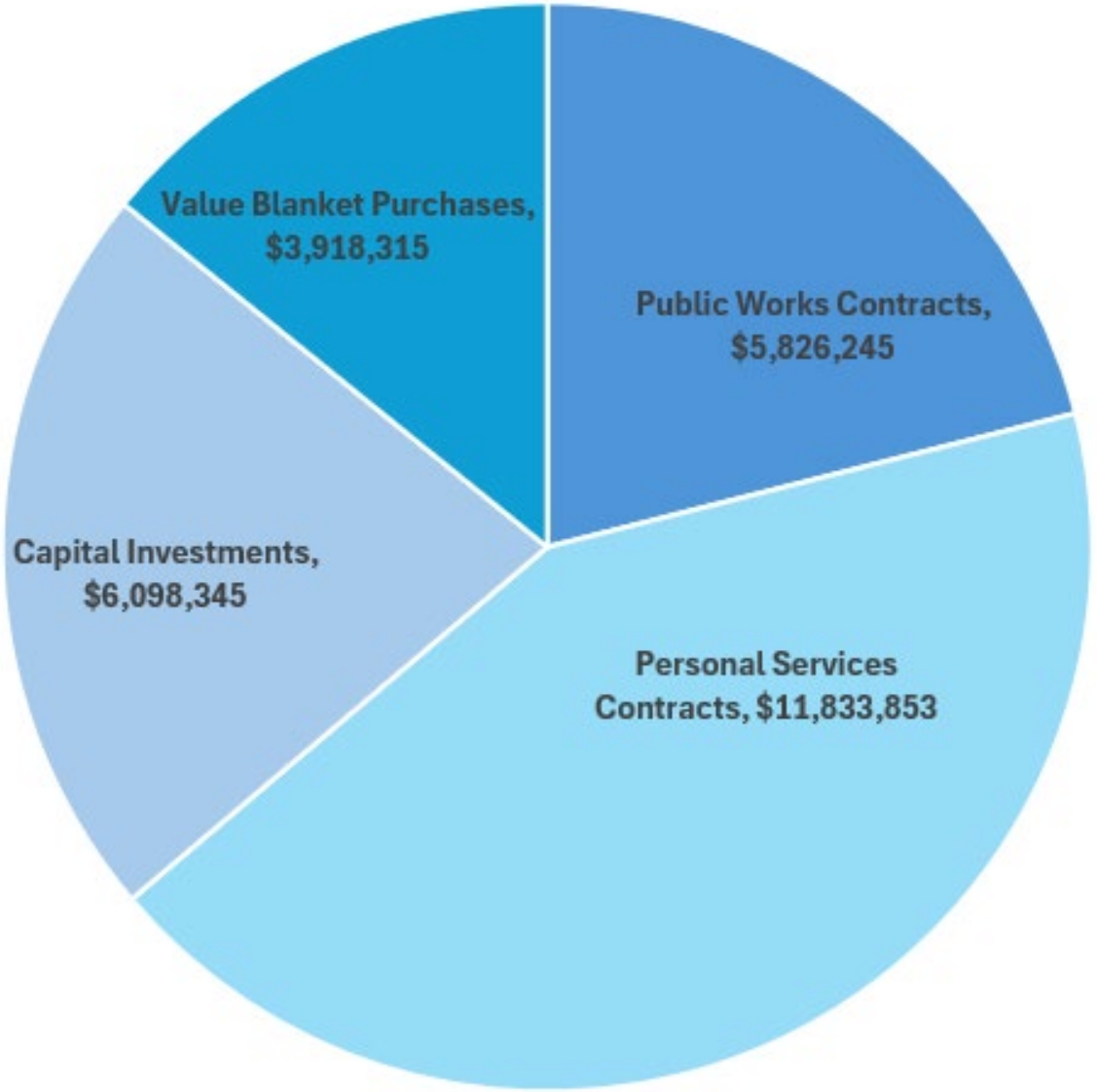
Operations

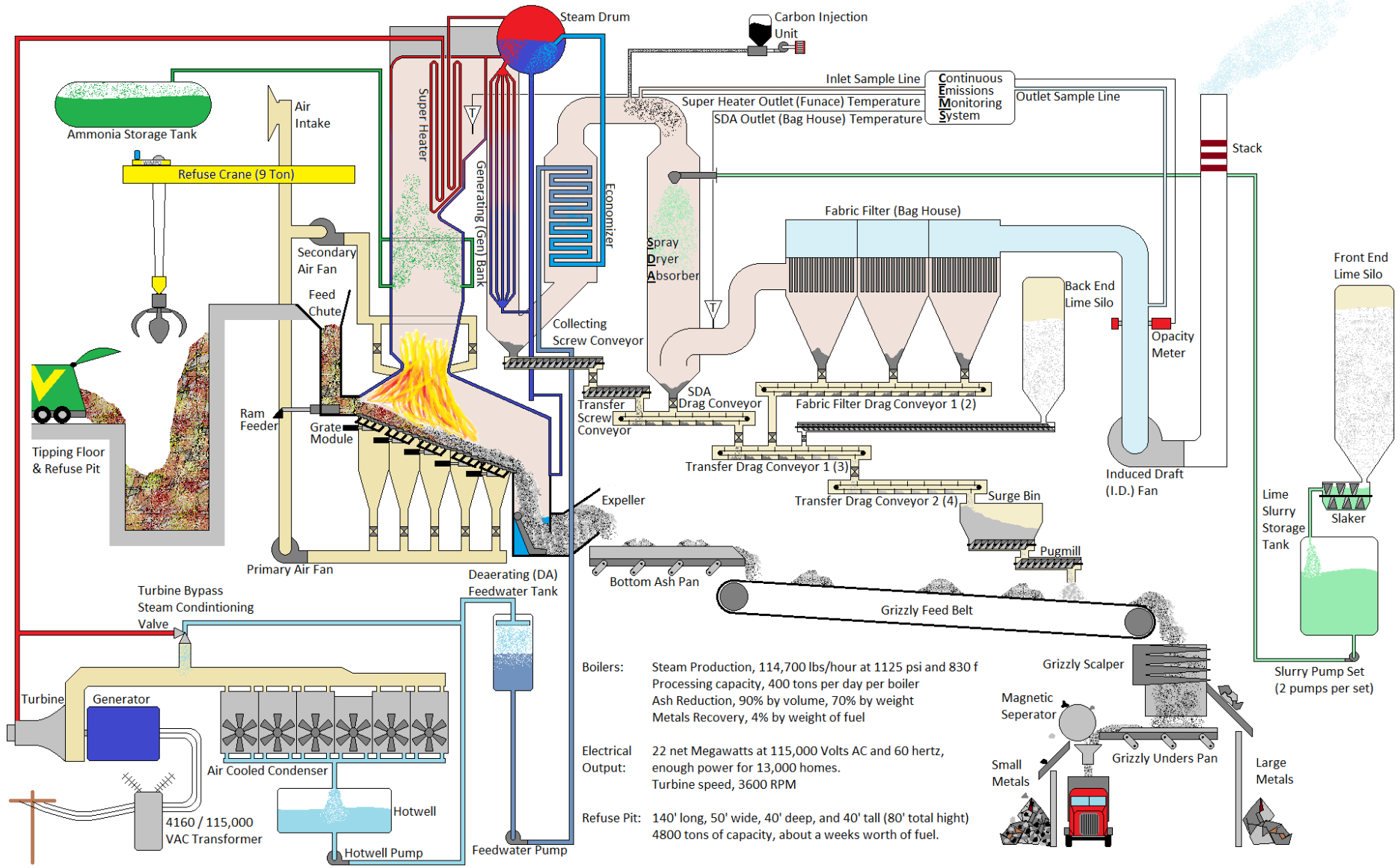
- Facility operates 24/7/365
- Employs 75 full time City employees
- Processes 800 tons/day of solid waste
- Reduces waste mass by 75% and volume by 90%
- No liquid discharge stream that would impact our sole source aquifer
- Excess power is sold to Avista, enough power for 13,000 homes



Economic Impacts

- Every **$1 in revenue** at a WTE Facility injects **$1.77 into the economy**
- Spokane's WTE total economic output estimated at **$74.9 Million**
- Facility utilizes **109 Contracts** and **145 Value Blankets** for a variety of goods and services
- **4,125 hours** of Apprentice and Journeyman **contracted union labor** in 2023




Steam Drum
Carbon Injection Unit
Inlet Sample Line
Continuous Emissions Monitoring System
Super Heater Outlet (Funace) Temperature
SDA Outlet (Bag House) Temperature
Outlet Sample Line
Stack
Ammonia Storage Tank
Air Intake
Super Heater
Generating (Gen) Bank
Economizer
Refuse Crane (9 Ton)
Secondary Air Fan
Feed Chute
Spray Dryer Absorber
Fabric Filter (Bag House)
Back End Lime Silo
Front End Lime Silo
Collecting Screw Conveyor
Opacity Meter
Tipping Floor & Refuse Pit
Ram Feeder
Grate Module
Transfer Screw Conveyor
SDA Drag Conveyor
Fabric Filter Drag Conveyor 1 (2)
Transfer Drag Conveyor 1 (3)
Induced Draft (I.D.) Fan
Expeller
Transfer Drag Conveyor 2 (4)
Surge Bin
Lime Slurry Storage Tank
Slaker
Pugmill
Primary Air Fan
Deaerating (DA) Feedwater Tank
Bottom Ash Pan
Grizzly Feed Belt
Turbine Bypass Steam Condintioning Valve
Grizzly Scalper
Slurry Pump Set (2 pumps per set)
Turbine
Generator
Magnetic Seperator
Air Cooled Condenser
Grizzly Unders Pan
Small Metals
Large Metals
4160 / 115,000 VAC Transformer
Hotwell
Hotwell Pump
Feedwater Pump
Boilers: Steam Production, 114,700 lbs/hour at 1125 psi and 830 f
Processing capacity, 400 tons per day per boiler
Ash Reduction, 90% by volume, 70% by weight
Metals Recovery, 4% by weight of fuel
Electrical Output: 22 net Megawatts at 115,000 Volts AC and 60 hertz, enough power for 13,000 homes.
Turbine speed, 3600 RPM
Refuse Pit: 140' long, 50' wide, 40' deep, and 40' tall (80' total hight)
4800 tons of capacity, about a weeks worth of fuel.

Climate Commitment Act (CCA)

Legislation adopted in 2021 to **reduce greenhouse gas** (GHG) emissions

Creates a **GHG cap and trade program** similar to California

- Washington version is **Cap & Invest Program** – some program funds go into the Climate Commitment Account and can be appropriated for GHG reduction projects
- Program underway and has **generated over $2 Billion** in carbon auction sales **since 2023**

Initially, both WTE and landfills were provided late entry into the program

- **2nd compliance period** for WTE (emissions year 2026, auction participation in 2027)
- **3rd compliance period** for landfills (emissions year 2029 – auction participation in 2030)

Legislation in 2022 removed ALL landfills from the Cap & Invest program with landfill GHG emissions controlled under a separate rule (Methane Rule).

Spokane's CCA Challenges

Treats Disposal Technologies differently

- Only **disposal method** that is **part of the CCA**
- Results in **higher costs for Spokane** residents & businesses

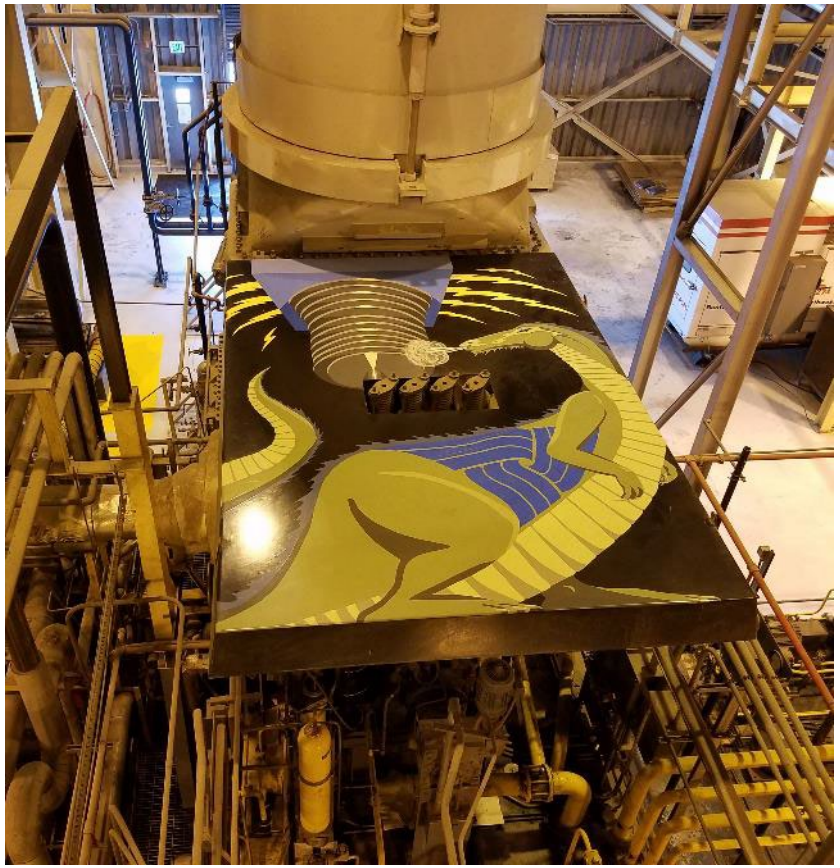
Penalizes good technology

- Features **lower lifecycle emissions** than landfills
- **Measured** and **controlled** emissions, **not modeled**
- **Avoids** decades of **methane generation and emissions**
- **Avoids** decades of **leachate generation & potential groundwater impacts**
- **Avoids trucking emissions** and **placement in low-income areas**
- **Increased metals recovery**
- **Generation of electricity** as a byproduct (13,000 homes)

Spokane's CCA Challenges

Limits the ability to create **additional environmental & other benefits**.

- WTE is the **center of circular economy** potential
- **Eliminates potential for emission reduction projects** such as non-ferrous metals recovery
- CCA **only recognizes up to 6%** in the form of **emissions offsets**, eliminating direct investment within the community. Offset projects reduce, remove, or avoid GHG emissions. City could invest in offset projects, however, **credits are limited in application.**



CCA Impacts

- Annual Costs to the Spokane WTE Facility estimated at up to $8 million per year
- Eliminates any available funding to pursue waste diversion and emission reduction projects
- Increases costs to Spokane Solid Waste Collections customers and other jurisdictions
- Jeopardizes the structure of the Spokane Regional Solid Waste System

Lifecycle Assessment

- Legislators approved a **Lifecycle Assessment** (LCA) that **examined total emissions in 2023 from WTE versus disposal at one of three area landfills**.

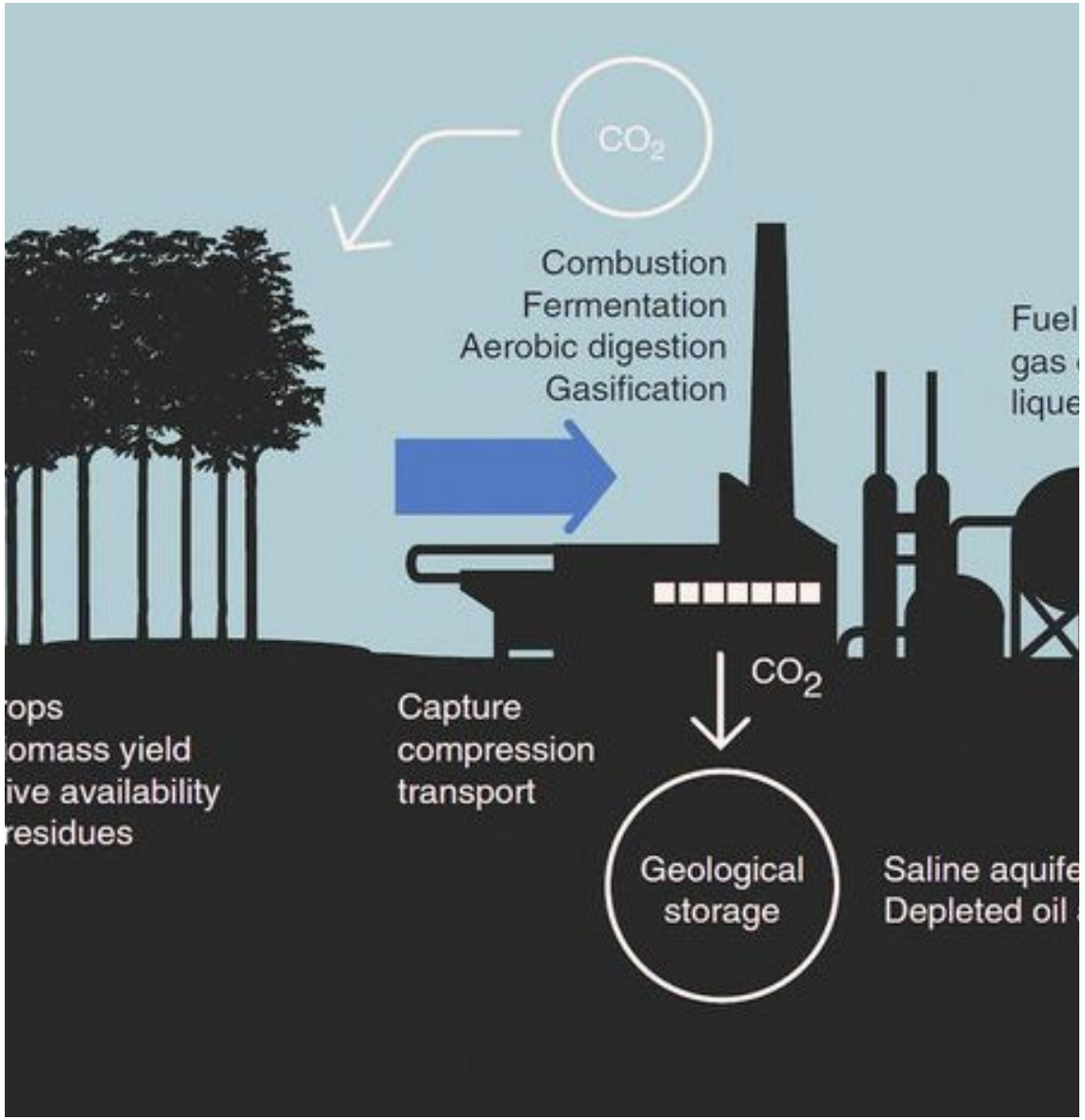
- Analysis **provided a total inventory of greenhouse gas emissions** including transportation and avoidances due to recycling of materials.

- Department of Ecology **study done by CDM Smith concluded**:
  - **Recommendation to use the 20-year Global Warming Potential** due to climate change urgency
  - In the 20-year GWP analysis, **Spokane WTE provides the greatest net reduction** in life-cycle GHG emissions when **compared to landfilling**

- Legislative **solution needed for fair and equitable treatment** of Spokane's Solid Waste Disposal System.

Carbon Capture

- City actively examining technologies for CO2 capture and reuse.
- Completed feasibility study with CarbonQuest, a Spokane based company, to evaluate their technology at the WTE.
- Proceeding with a second feasibility study utilizing a different carbon capture technology.
- Potential end uses include but are not limited to:
  - Mineral Sequestration
  - Beverage Grade CO2
  - Sustainable Aviation Fuel
  - Urea (Fertilizer)



Carbon Capture

- **Time needed to develop rules**
  - Rules and regulations **have not been developed** as to how reused or sequestered CO2 will be accounted for.
  - **Estimated 2 years to be finalized**, which delays evaluation and design of a full-scale system.
- **Funding needs to be identified**
  - Cost estimates for construction of a full-scale system range from **$75-$210 Million**
- **System Design and Construction**
  - Once regulations and funding have been established, procurement, engineering, and construction of a system of this size will likely take **up to 3 years**.

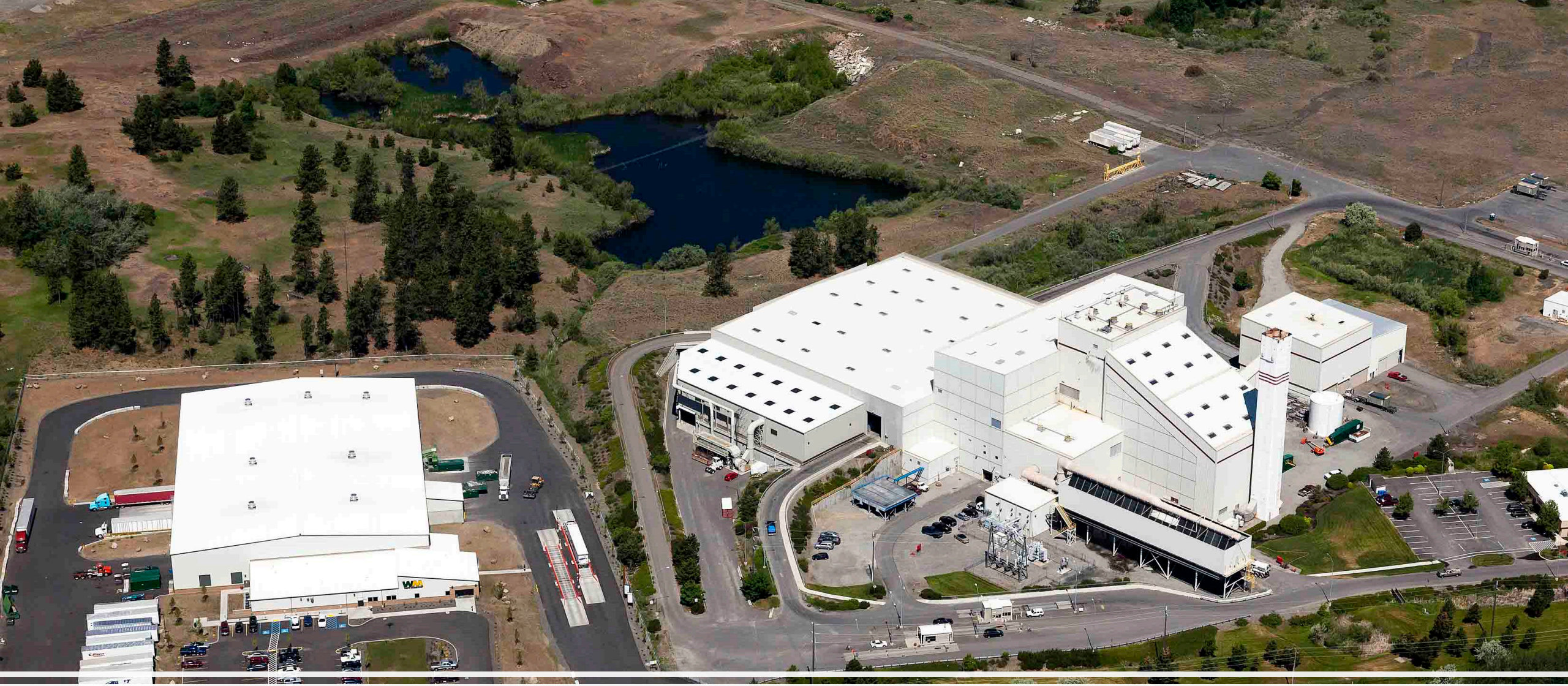
Legislative Efforts

Legislation proposed in the 2025 session to provide equitable treatment for WTE.

Legislation forthcoming in 2026 that provides a compliance schedule model.

City will be provided initial no cost carbon allowances that would decrease in subsequent years

Provides the City time to invest in strategies that lower emissions while still incorporating non-compliance costs



Questions?