

McKay Bay Waste-to-Energy Facility Capital Planning

December 15, 2022



Waste-to-Energy Industry Standards

- Waste-to-Energy facilities are typically designed with 20- to 30-year estimated operating life
- Regular major maintenance intervals and annual/periodic maintenance are required for critical systems and/or equipment to reach that expected life
- After which, facilities require major refurbishment or capital investment
- Approximately one-third of the city's facility is original from 1985 with retrofit of the remaining two-thirds in 2002





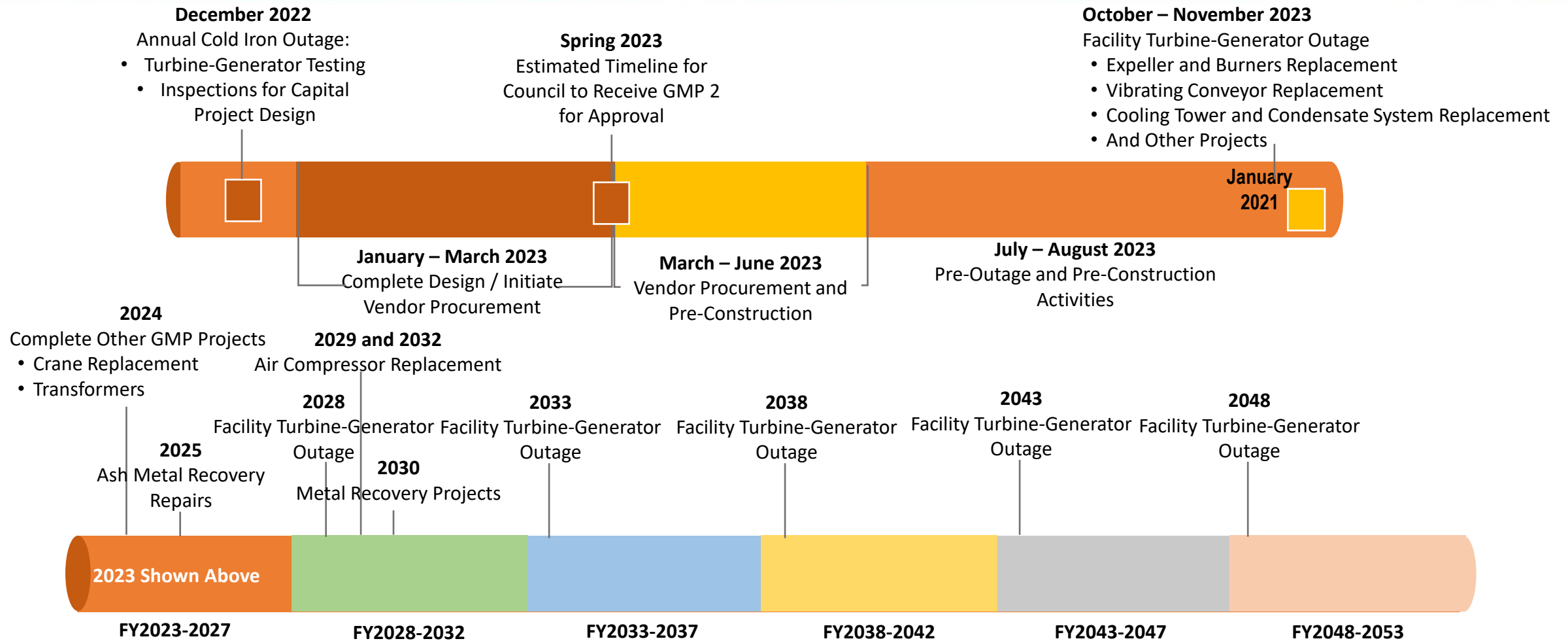
McKay Bay Waste-to-Energy Facility Planning

- Comprehensive Plan/Policies
- WTE Facility Operational Feasibility Technical Memorandum, 2018
- 30-year Life-Cycle Plan
 - Repairs and maintenance ongoing to maintain useful life
 - Equipment replacement as warranted as equipment reaches end of useful life
 - Refurbishment needs will be continuously reviewed to ensure appropriate life-cycle replacement of the assets
- Master Plan (Transition Plan, October 2019)
- FY2023-FY2027 Adopted 5-year Capital Improvement Plan
 - Addresses equipment with known repairs or replacement required to continue facility operations
- 10-year Capital Improvement Projection
- All supporting planning documents can be reviewed on the Solid Waste-McKay Bay Waste-to-Energy Facility website

McKay Bay Waste-to-Energy Life-Cycle

Equipment/System	Placed Into Service	Routine Maintenance	Design Life (Years)	Average Estimated End of Life-Cycle	Action Planned	Estimated Extended Life-Cycle
Facility Buildings, Site, and Common Equipment	1985	Periodic inspections and repair	40	2025	Repair and refurbish	2065
Boiler (water walls and tubes, burners, expellers, fans)	2002	Repairs every outage (2 outages per year per boiler)	20	2022	Replace burners / expellers, repair boilers	2043
Turbine Generator	1985	Major overhaul every 5 years	30	2015	Major overhaul	Monitor during overhauls
Refuse Pit Cranes and Tipping Floor	1985	Periodic inspections and repair	30	2015	Crane and rails replacement	2053
Cooling Tower and Condensate System	1985	Periodic inspections and repair	30	2015	Replace tower, replace condenser	2053
Air Pollution Control Systems (FFH, SDA, flues, stack)	2002	Periodic inspections and repair	20	2022	Stack repairs other minor repairs	Monitor during future outages
Electrical System Components (transformers, switchgear, MCC)	1985	Periodic inspections	30	2015	Replace main equipment	2053
Ash Handling and Metal Recovery Systems	2002	Periodic inspections and repair	10	2022	Major building repairs	2033
Boiler Water System (feed pumps, water treatment)	1985	Periodic inspections and repair	30	2015	Replace pumps & treatment system	2053
Logistics and Other Miscellaneous Projects		Tied to major projects / Periodic inspections and repair	--	--	--	--

McKay Bay WTE Estimated Timeline of Major Projects



McKay Bay First Five Years Adopted CIP (FY2023-FY2027)

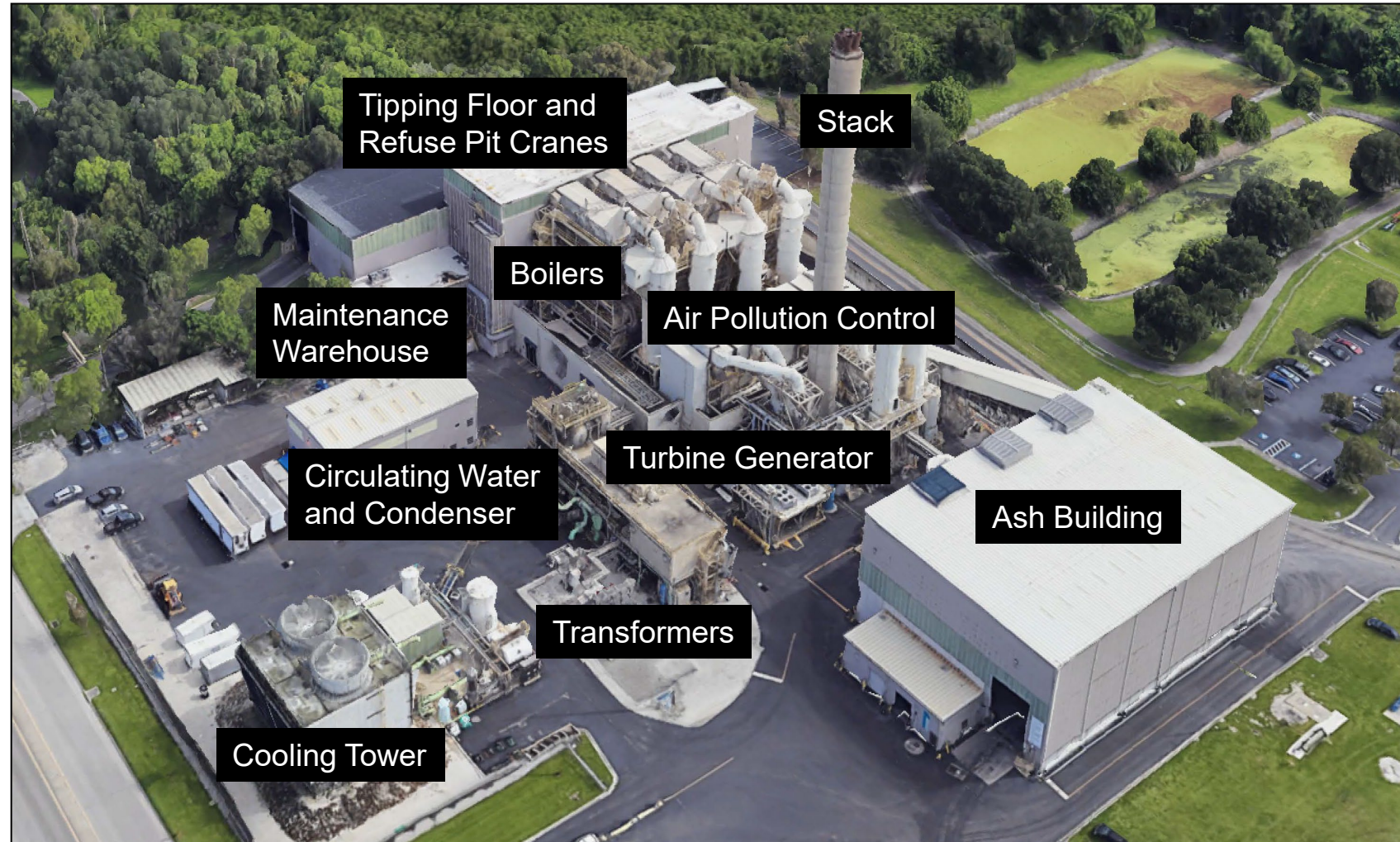
Equipment/System	FY2023	FY2024	FY2025	FY2026	FY2027
Facility Buildings, Site, and Common Equipment	\$2,515,000	\$0	\$0	\$2,450,000	\$0
Boiler (water walls and tubes, burners, expellers, fans)	\$5,300,000	\$5,300,000	\$5,650,000	\$1,050,000	\$1,600,000
Turbine Generator	\$8,222,200	\$0	\$0	\$0	\$0
Refuse Pit Cranes and Tipping Floor	\$0	\$5,500,000	\$0	\$0	\$0
Cooling Tower and Condensate System	\$4,513,760	\$0	\$0	\$0	\$0
Air Pollution Control Systems (FFH, SDA, flues, stack)	\$1,994,000	\$1,675,000	\$1,350,000	\$1,500,000	\$0
Electrical System Components (transformers, switchgear, MCC)	\$5,100,000	\$0	\$0	\$0	\$0
Ash Handling and Metal Recovery Systems	\$5,600,000	\$0	\$9,500,000	\$0	\$2,500,000
Boiler Water System (feed pumps, water treatment)	\$6,250,000	\$0	\$0	\$0	\$0
Logistics and Other Miscellaneous Projects	\$10,385,840	\$3,561,900	\$0	\$0	\$0
TOTAL	\$49,880,800	\$16,036,900	\$16,500,000	\$5,000,000	\$4,100,000

McKay Bay Second Five Years (FY2028-FY2032)

Equipment/System	FY2028	FY2029	FY2030	FY2031	FY2032
Facility Buildings, Site, and Common Equipment	\$1,000,000	\$1,200,000	\$125,000	\$250,000	\$1,075,000
Boiler (water walls and tubes, burners, expellers, fans)	\$600,000	\$3,400,000	\$3,400,000	\$3,400,000	\$3,400,000
Turbine Generator	\$5,000,000	\$90,000	\$92,700	\$95,481	\$98,345
Refuse Pit Cranes and Tipping Floor	\$250,000	\$250,000	\$0	\$250,000	\$0
Cooling Tower and Condensate System	\$920,000	\$600,000	\$300,000	\$0	\$0
Air Pollution Control Systems (FFH, SDA, flues, stack)	\$0	\$800,000	\$800,000	\$800,000	\$800,000
Electrical System Components (transformers, switchgear, MCC)	\$0	\$0	\$0	\$0	\$0
Ash Handling and Metal Recovery Systems	\$400,000	\$150,000	\$9,650,000	\$150,000	\$150,000
Boiler Water System (feed pumps, water treatment)	\$0	\$80,000	\$80,000	\$80,000	\$80,000
Logistics and Other Miscellaneous Projects	\$0	\$0	\$0	\$0	\$0
TOTAL	\$8,170,000	\$6,570,000	\$14,447,700	\$5,025,481	\$5,603,345

Selected Current Project Highlights

- Replacing wooden cooling tower, circulating water system, and condenser, all built in 1985
- Replacing transformers, built in 1985
- Retrofitting turbine-generator, built in 1985
- Replacing the refuse pit crane, built in 1985
- Repairing ash building structure, built in 2002
- Repairing stack, built in 2002
- Replacing expellers, burners, and vibrating conveyors (part of the boilers), built in 2002
- Repairing sections of the boilers and air pollution control, built in 2002





Current McKay Bay Waste-to-Energy Facility Actions

- Charles Perry Partners, Inc. (CPPI) selected through CCNA process on April 30, 2021. BBE prime with several subconsultants and vendors
- 1st GMP (guaranteed max price) for initial materials, long-lead items and initial design work approved by City Council on August 25, 2022
- 2nd GMP is being developed by CPPI. Anticipate presentation to City Council in spring FY2023



Solid Waste Future Debt and Rate Plan

- No debt has been authorized
- Council approved a resolution authorizing reimbursement of an amount not to exceed \$220 million from potential future debt issuances
- Staff recently initiated a rate study to determine the required rates to support future debt and operational financial requirements
- Projects are still in the conceptual and/or design phase which could affect project cost estimates



Future Debt and Rate Plan Chronology

- Mayor's FY2023 Budget Presentation – August 4, 2022
- Solid Waste Reimbursement Resolution and award of GMP 1 – August 25, 2022
- 1st Budget Public Hearing – September 6, 2022
- 2nd Budget Public Hearing – September 20, 2022
- Bond Counsel Reimbursement Resolution – October 20, 2022
- Workshop – October 27, 2022



Solid Waste Reimbursement Resolution

Potential Solid Waste debt includes (\$220 million):

- McKay Bay Waste-to-Energy Facility \$82.4 million
- Relocation of Solid Waste Administration and Fleet \$75.0 million
- Other Solid Waste Projects \$53.0 million
- Contingency \$9.5 million



Questions?

