



Presentations for June 10, 2025 Board of Directors Meeting





Item 12: Internship Capstone Project

Waste Management at Central Bay Maintenance Facility

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San Francisco Bay Ferry

Why Waste Management?

Effective waste management is crucial for environmental conservation and for helping preserve resources while minimizing ecological impact. I chose to focus on this topic because I recognized a significant opportunity for this agency to advance its sustainability goals and make public transit more sustainable.

My passion lies within sustainable public transit, as I studied Environmental Sciences and City Planning at UC Berkeley.

This passion has grown considerably during my time at SF Bay Ferry. This interest will continue to drive my work as I pursue a Master's in Urban Planning at UCLA this fall.

Ron Cowan Central Bay Operations and Maintenance Facility

- Opened in 2018
- Provides maintenance to vessels operating on the Central Bay routes.
- LEED Gold Certified
- Selected for this analysis because it is the largest maintenance site (houses 70% of the fleet)



Background



Purpose: Asses current waste management program at Central Bay and identify improvements that align with Sustainability Policy (adopted August 2024).



SF Bay Ferry committed to the Green Marine program to promote transparency, track performance, and demonstrate leadership in maritime sustainability.



This analysis is to advance implementation of SF Bay Ferry's Sustainability Policy and the agency's goals to reduce waste and improve environmental performance.

Overview of Waste Types Generated

- **Types of waste generated**
 - **Hazardous waste**
 - Oil filters, absorbent waste (oily rags, shop towels, etc....), waste oil, bilge, sewage
 - **Non-hazardous waste**
 - Light bulbs, batteries, and electronics
 - Used parts and materials

Current Waste Management Practices

- **Waste collection and storage methods**

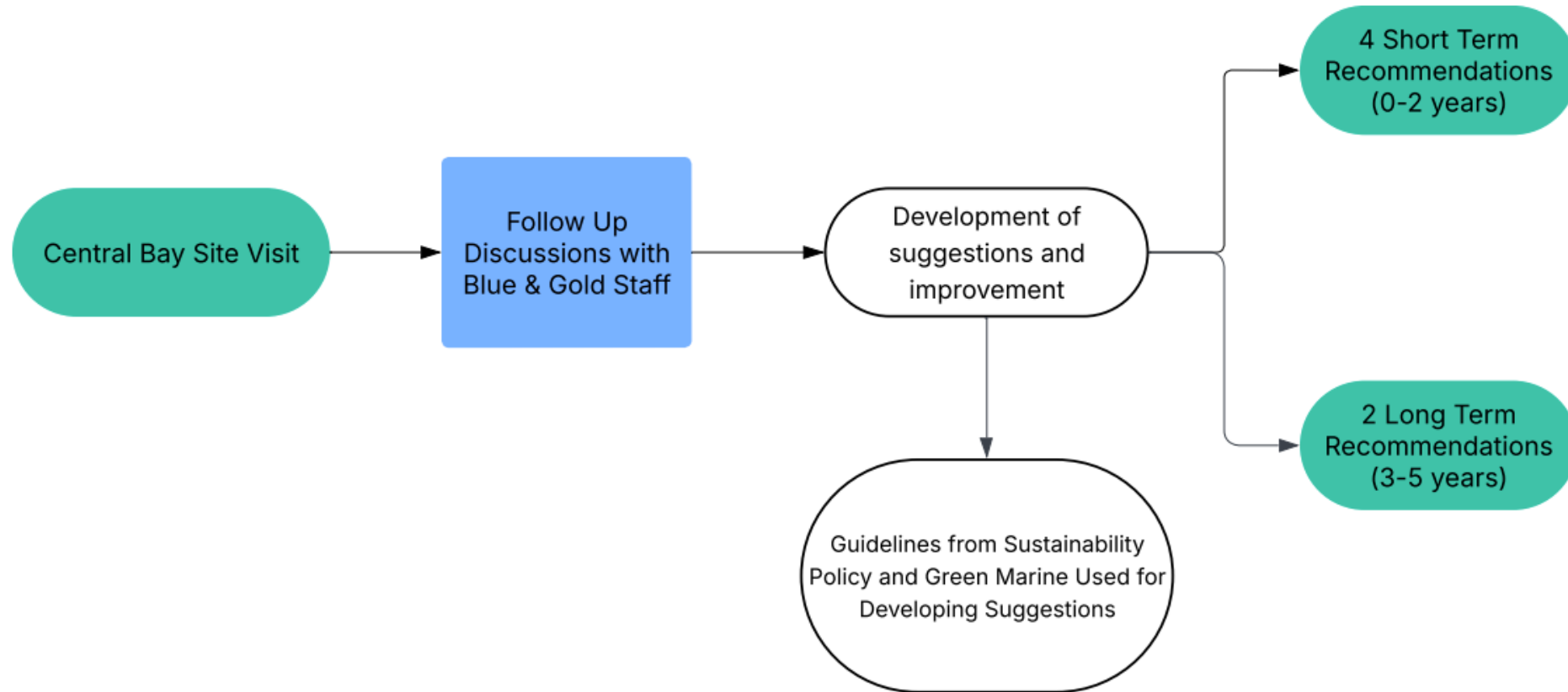
- Bilge and other wastewater collected by a hazardous waste collection service
- E-waste collected by Republic Services
- Waste and recycling generated on vessels thrown away to onsite compactors

The staff at Central Bay Maintenance Facility follow thorough and rigorous waste management protocols to ensure safety for the environment and their personnel.

- **Spill Prevention and Waste Handling Requirements**

- Discharge of garbage and oil into water is prohibited
- Fuel, oil, and waste oil/bilge transfers are only performed by trained employees

After a site visit to Central Bay in January 2025, followed by collaborative discussions with Blue & Gold staff, 6 suggestions and improvements have been formulated.



Short Term Improvements

1) Sustainable Materials Purchasing Policy

Current Practice:

- Blue & Gold operations use various disposable materials to operate the concessions stand on board its vessels.

Proposed Improvement:

- Developing a broader sustainable procurement policy would create a framework for evaluating and selecting products, services, and operational practices with reduced environmental impact.

- Estimated Project Duration:
4-6 months

2) Recyclable Content Trash Bags

Current Practice:

- The linings of the current trash bags are recyclable; however, they are disposed of with regular landfill trash.

Proposed Improvement:

- Replace trash bags with post-consumer recycled (PCR) trash bags to reduce virgin plastic demand and improve sustainability.

- Estimated Project Duration:
1-3 months

Short Term Improvements

3) Standardized Hazardous Material Labeling System

Current Practice:

- Used oil from vessels gets pumped out into containers that are then picked up by a third-party service.
- The labeling process has irregularities as some containers were full with empty labels, and some containers were empty with full labels.

Proposed Improvement:

- Implementing a color-coded labeling system with clear "FULL" or "EMPTY" designations would ensure accuracy, safety, and regulatory compliance with hazardous waste handling,

- Estimated Project Duration:

4-6 months



Short Term Improvements

4) Recycle Program for Used Propellers and Other Materials

Current Practice:

- Used boat parts such as propellers are sent to a shipyard nearby, possibly neglecting their recycling potential and ending up in landfills.

Proposed Improvement:

- Establishing a partnership with a metal recycling facility would ensure materials are properly disposed of whilst prioritizing sustainability.
 - Estimated project duration: 1-2 years



Long-term Improvements

5) Solar Powered Onsite Compactor Installation

Current Practice:

- Central Bay's onsite trash compactor currently operates on electricity.

Proposed Improvement:

- Replacing it with a solar-powered trash compactor would reduce facility energy consumption while maintaining waste management efficiency.
 - Estimated project duration: 2-3 years



Long-term Improvements

6) Lightweight Sewage Hose Replacement

Current Practice:

- Hoses are currently used to carry sewage and bilge from vessels to containers on land. Due to the heavy weight of the hoses, sometimes leaks occur at the joint.

Proposed Improvement:

- Replacing the sewage hose with lighter, more durable materials would eliminate potential spills and improve efficiency for workers.

- Estimated project duration: 3-4 years



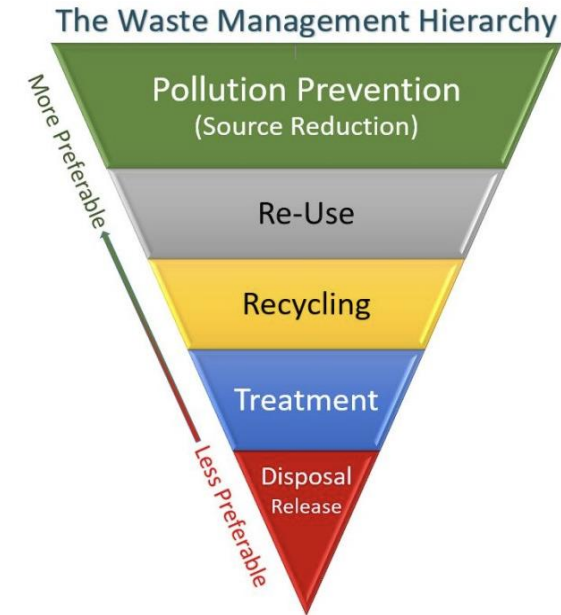
Initiatives	Level of Effort	Next Steps	Environmental Impact
Recyclable Content Trash Bags	Low	Research and modify purchasing specifications	
Sustainable Purchasing Policy	Medium	Develop sustainable purchasing specifications	
Standardized Hazardous Material Labeling System	Medium	Design color-coded labeling system and develop updated standard operating procedures for waste oil handling	
Recycle Program for Used Propellors and Other Materials	High	Research/identify specialized metal recycling facilities in the region and establish a formal partnership agreement with selected recycling vendor	
Solar Powered Onsite Compactor	High	Research available solar-powered compactor tech suitable for Central Bay and complete procurement process	
Lightweight Sewage Hose Replacement	High	Research lightweight, marine-grade piping alternatives, develop technical specifications for replacement systems, complete procurement process	

Source reduction- prevents waste generation at the source

Recycling/Reuse- Keeping materials in productive use

Treatment- processing waste to reduce harmful effects

EPA Pollution Prevention Hierarchy



Implications for Green Marine

- One of the performance criteria focuses on waste management.
- SF Bay Ferry's current practices align with meeting regulatory requirements (Level 1) of Green Marine. These recommendations would enable SF Bay Ferry to advance to higher levels.
- These recommendations support SF Bay Ferry and Blue & Gold's progression toward higher-tier Green Marine Performance Indicators and stronger sustainability outcomes.

Thank you!

Questions?

CLOSED SESSION

The Directors are meeting in closed session.



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