Zero-Emissions Workshop Debrief

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August 16th, 2023

Discussion Topics

- Project update
- Key Findings Review
- Policy Review
- Questions and Discussion
- Next Steps

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Project Priorities

REMAIN FOCUSED ON:

- Providing transit services focused on community needs, not technology

- Consider full lifecycle emissions of all solutions (well-to-wheels).

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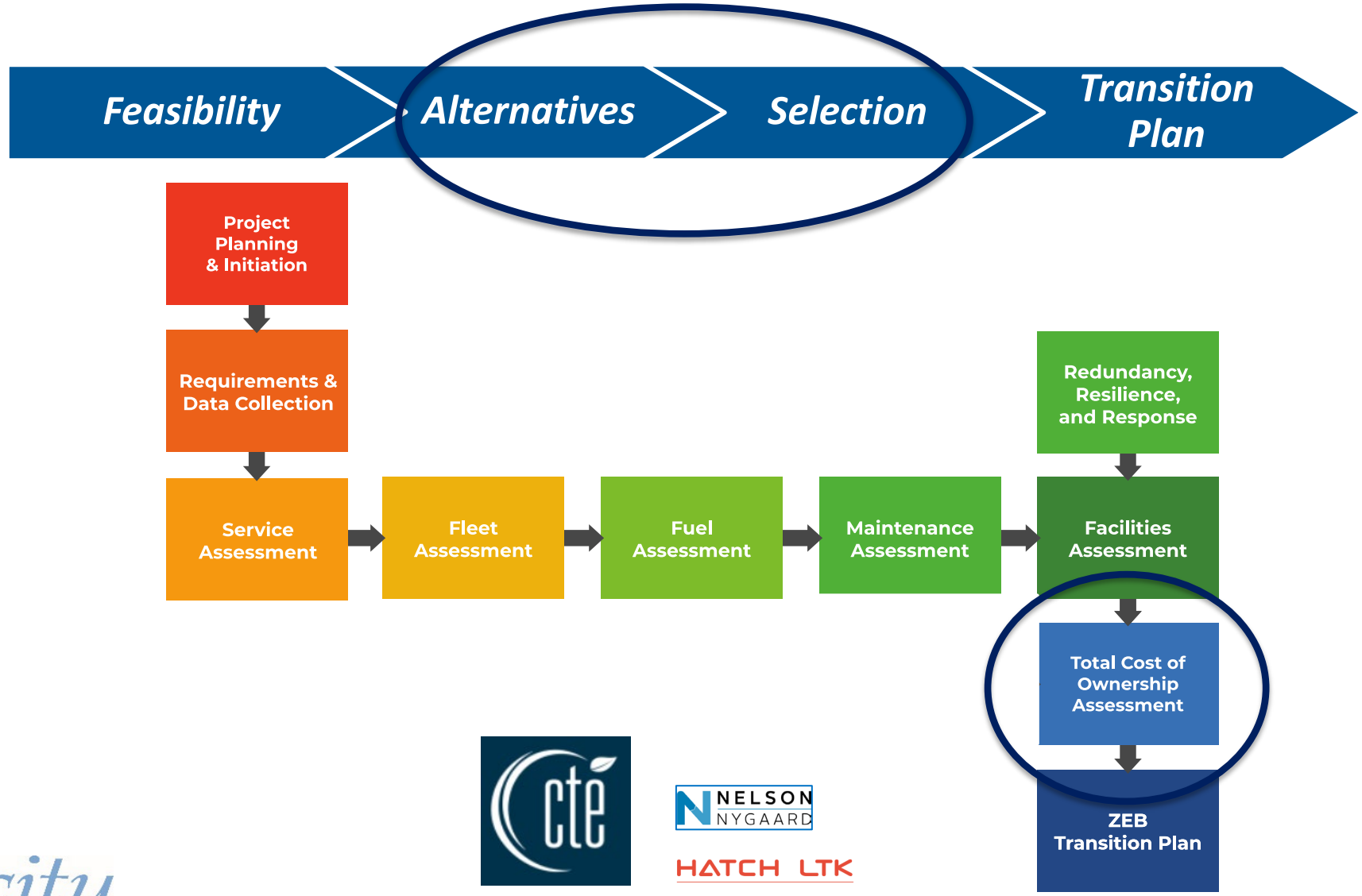
Project Approach



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Project Progress

- Completed stages:
  - Baseline analysis
  - State of the Industry
  - Change management
  - GHG analysis
  - Fixed Route Analysis (all aspects)
- Work in progress:
  - Analysis for: Dial-A-Lift, Vanpool and non-revenue fleets
  - GHG forecasting tool
  - Final Analysis Report

Fixed Route Summary

Total Cost of Ownership	Baseline	BEB Depot Charging Only	BEB Depot and On-Route Charging	Mixed Fleet (BEB/FCEB)	FCEB Only
Fleet	$270,264,000	$408,825,000	$468,644,000	$477,540,000	$493,523,000
Fuel	$109,293,000	$71,148,000	$50,543,000	$71,297,000	$102,052,000
Maintenance	$95,730,000	$81,464,000	$73,971,000	$79,948,000	$88,172,000
Infrastructure	$-	$10,598,200	$21,599,000	$17,677,000	$11,636,000
Total	**$ 475.3 M**	**$ 572 M**	**$ 614.8 M**	**$646.5 M**	**$ 695.4M**
Compared to Baseline	-	+ $ 96.8 M	+ $ 139.5 M	+ $ 171.2 M	+ $ 220.1 M
% of Blocks Achievable by 2050	0%	83%	100%	100%	100%
Cumulative Metric Tons of CO_2e Reduced	-	~70,000	~108,000	~62,000 – 113,000	~0 – 121,000

Assumptions:

- 100% ZEB purchases beginning in 2026 for fleet replacement
- Infrastructure totals DO NOT include land acquisition or utility upgrades
- "Fuel" costs:
  - Hydrogen = $8.61/kg
  - Electricity = $0.081/kwWh, Demand charges $11.16 - $15.24/kW
    - ~6MW needed for BEB Depot Charging

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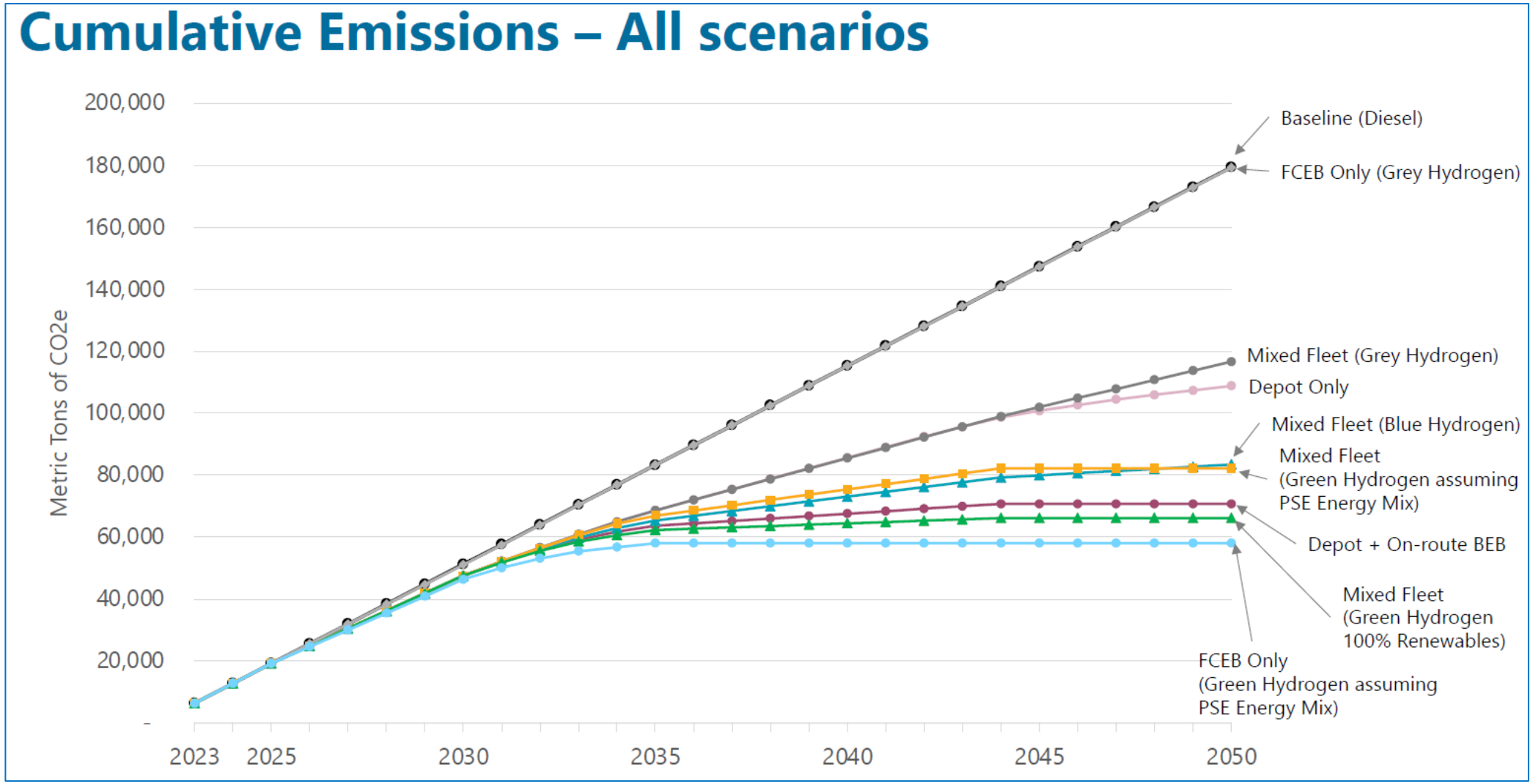
Projected Emissions



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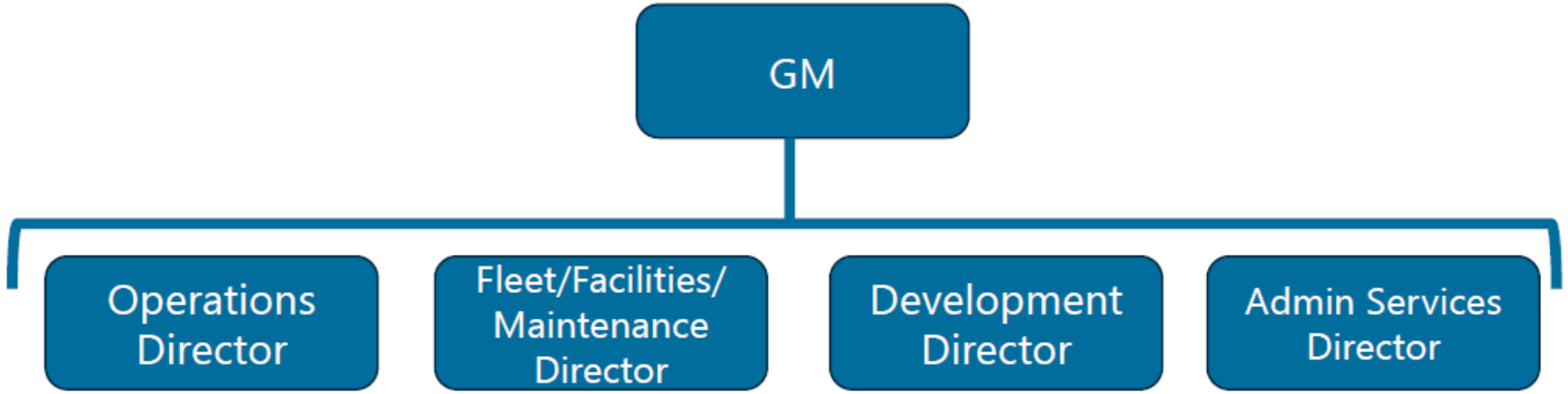
Agency Impacts

Change Management Considerations

- Shifting the composition of the fleet requires changes in all aspects of the operation, such as:
  - Operations
  - Maintenance
  - Planning and scheduling
  - Administration



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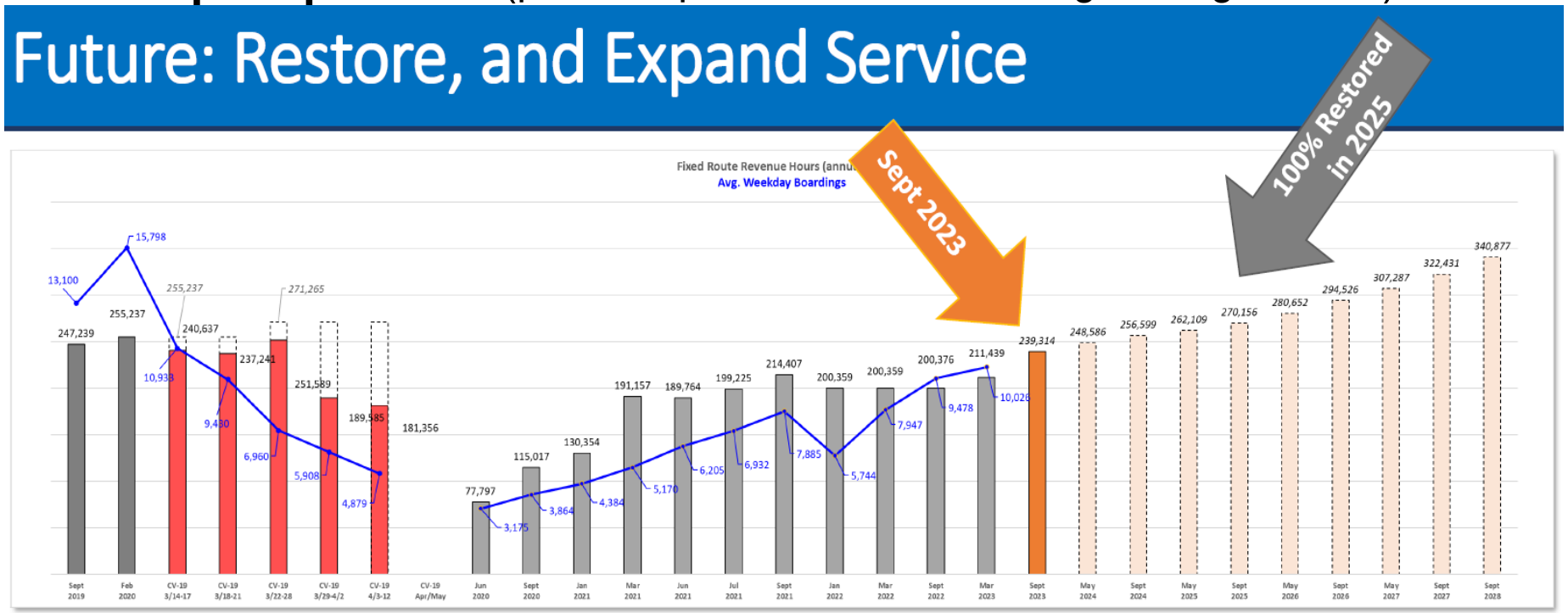
Agency Information

- Annual Mileage and Fuel Consumption (Fixed Route)

Year	Miles	Gallons
2019	3,513,468	669,742
2022	2,946,257	539,999

- Ridership Update (per TDP presentation at ITA mtg on Aug 2, 2023)



Policy Review

ITA Resolution 01-2013

- Approved amendments to Environmental and Sustainability Policy (EX-0011)

POLICY-EX-0011

2. Intercity Transit Will Incorporate Sustainability in All Areas of Operations

Intercity Transit commits to incorporating sustainability in all areas of its operations, including:

- The use of biodiesel or other renewable fuels to minimize the use of fossil fuels and reduce harmful emissions.
- The purchase of vehicles with low emissions and maximum fuel efficiency.
- The incorporation of "green" building practices into future capital projects and/or renovation of existing facilities, with a goal to strive for LEED gold, but in the least LEED silver.
- The consideration of environmental impacts and protection and the reduction of energy usage in the design, construction and operation of all facilities and services.
- The training of employees on environmental protection and sustainability practices.
- The implementation of a program to minimize waste, to reuse and recycle products, and to preferentially purchase materials with recycle content.
- The conservation of water at agency buildings and facilities.
- The formation of partnerships with our jurisdictions and other area agencies to reduce our community's reliance on single-occupancy automobiles and to take actions to reduce carbon emissions.

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Questions and Discussion

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Next Steps

- Facilitate additional Authority Board discussions (as needed)
- Finalize full fleet analysis and final report
  - October 2023
- Create Zero-Emissions Transition Plan
  - January 2024
- ZEB Facility master planning and Specific project design
- Grant Applications

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Awarded Grants

Washington State Department of Transportation Awards

- Green Transportation Capital Grant Program
  - Zero-Emission Hydrogen Demonstration Project
    - Two Fuel-Cell Electric Buses
    - Temporary Fueling Equipment
  - 2023-2025 Award: $6,857,740
- Regional Mobility Grant Program
  - Zero-Emission Hydrogen Demonstration Project
    - Three Fuel-Cell Electric Buses
    - Facility Upgrades
  - 2023-2025 Award: $6,192,557
  - 2025-2027 Projected: $4,109,454

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Awarded Grants - Evaluation

Performance measurements for both grant projects:

- Operating Range
- Reliability (vehicles and fueling equipment)
- Refueling Speed
- Maintenance Costs
- Fuel/Energy Costs
- Planning/Scheduling Impacts
- Associated Ridership changes

Possible Fueling Solution

Demonstration Temporary Infrastructure Assessment

- Mobile Hydrogen Refueling Solution for the first 10 FCEBs deployed in 2026: **$1.095 M** per year (for equipment and fuel costs)

Temporary Tube Trailer	2026	2027	2028	2029	2030
Mobile Equipment Lease (Inflated 6% YOY)	$208,893.96	$221,427.60	$234,713.26	$248,796.05	$263,723.82
Fueling Costs (Inflated 10% YOY)	$1,223,280.95	$1,345,609.04	$1,480,169.94	$1,628,186.94	$1,791,005.63
Mobile Equipment Lease Total	**$ 1.4 M**	**$1.6 M**	**$ 1.7 M**	**$1.9 M**	**$ 2.1 M**

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