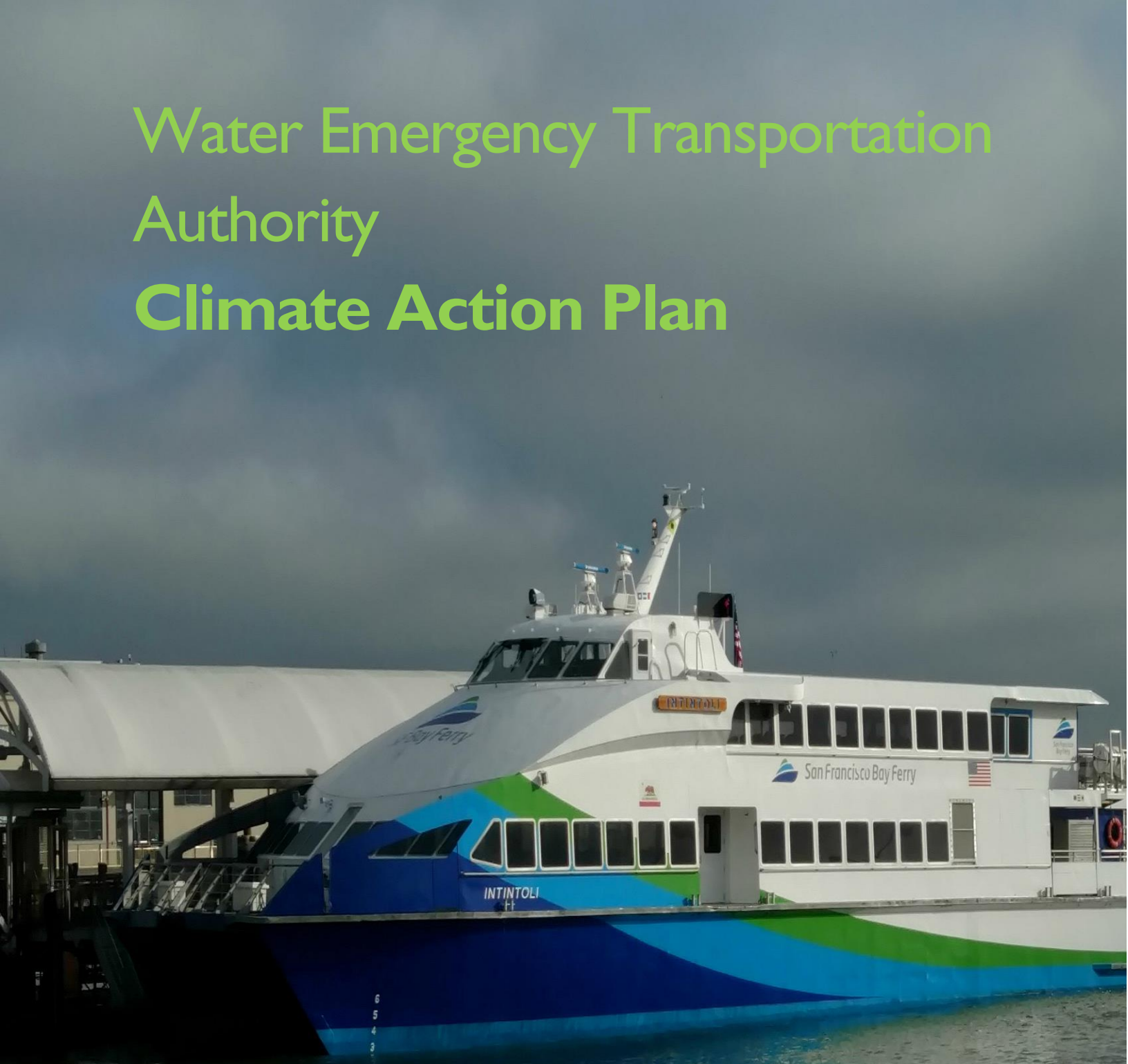
Water Emergency Transportation Authority

Climate Action Plan



August 2022

San Francisco Bay Ferry
A SERVICE OF WETA

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Introduction

The Bay Area transportation landscape is witnessing unprecedented growth and change. As the region experiences phenomenal economic and population growth, aging transportation infrastructure, competing funding priorities, and outdated equipment are stressing intermodal passenger capacity and efficiency as never before. The region must look at new and innovative ways to ensure the Bay Area can responsibly meet the public's transportation and commuting needs now and in the future. Ferries are, and must be, part of the long-term solution.

Over the last 10 years, ferries have become an increasingly critical and attractive part of the Bay Area's transportation system, and the San Francisco Bay Area Water Emergency Transportation Authority (WETA) has become a valued partner to local communities in helping to meet the regions overburdened transportation needs. This WETA Climate Action Plan details WETA's environmental sustainability plans for the transition of more than half of WETA's vessel fleet and terminals to zero emission technology, meeting the Bay Area's demand for a safe, sustainable, and environmentally responsible transportation alternative and advancing zero emission technology in the maritime sector.

The WETA Climate Action Plan

The Water Emergency Transportation Authority's Climate Action Plan outlines WETA's continued effort to lead the development of clean vessel technology for the purpose of increasing transit efficiency and reducing greenhouse gas emissions. This plan outlines WETA's past, present, and future efforts in developing shoreside infrastructure and a zero-emission fleet to reduce overall emissions while utilizing the latest clean transit technology to expand service across the Bay Area, furthering the goal of reducing traffic congestion and increasing environmentally friendly public transportation.

Overview

Areas of Operation

WETA operates six ferry routes on San Francisco Bay, providing transbay service from the East Bay and North Bay to San Francisco and from the East Bay to South San Francisco. Figure 1 illustrates the existing routes within the WETA system.

Figure 1. SF Bay Ferry Services Route Map

Alameda & Oakland Service. The Alameda/Oakland Ferry Service was started after the Loma Prieta Earthquake on October 17, 1989, in direct response to the collapse of a section of the San Francisco–Oakland Bay Bridge and the nearly month-long closure that followed. In May 2011, the responsibility and ownership of the Alameda/Oakland service was transferred from the City of Alameda to WETA.

The Alameda/Oakland provides all-day weekday and weekend service between the Alameda Main Street and Oakland terminals in the East Bay and the downtown San Francisco Ferry Terminal and San Francisco Pier 41 Terminal. Local "Short Hop" service is provided between Alameda and Oakland and between downtown San Francisco and Pier 41. Special event service is provided to Oracle Park/China Basin terminal for select San Francisco Giants games and other events. New special event service for select Warriors games and concerts from Alameda/Oakland to a temporary facility at Pier 48 1/2 near the Chase Center began in late 2019. The Alameda/Oakland service had an annual ridership of approximately 1,384,000 in FY 2018–19. In July of 2021, the Alameda/Oakland combined service was bifurcated into the Oakland ferry

service and the Alameda ferry service.

Harbor Bay Service. The Alameda Harbor Bay Ferry Service began service in March 1992 in conjunction with development of Harbor Bay Island near the Oakland International Airport. In January 2012, the responsibility and ownership of the Harbor Bay service was transferred from the City of Alameda to WETA. The Alameda Harbor Bay Ferry Service provides commute-only weekday service between the Alameda Harbor Bay Terminal and the downtown San Francisco Ferry Terminal. The Alameda Harbor Bay service had an annual ridership of approximately 355,700 in FY 2018–19.

Vallejo Service. The Vallejo ferry service began operations in 1986 with limited commuter ferry service to San Francisco and midday service from San Francisco to Marine World/Vallejo. In July 2012, the responsibility and ownership of the Vallejo service was transferred from the City of Vallejo to WETA.

The Vallejo service provides all-day weekday and weekend service between Mare Island, Vallejo terminal, downtown San Francisco Ferry Building and San Francisco Pier 41 terminal. Local "Short Hop" service is provided between downtown San Francisco and Pier 41 and between Mare Island and Vallejo. Special event service is provided to Oracle Park/China Basin for select San Francisco Giants games and other events. The Vallejo service had an annual ridership of approximately 1,078,000 in FY 2018–19.

South San Francisco Service. The South San Francisco Ferry Service was launched by WETA in June 2012 and provides commute-only weekday service between the Alameda Main Street and Oakland terminals in the East Bay and the South San Francisco terminal at Oyster Point. The South San Francisco service had an annual ridership of approximately 142,400 in FY 2018–19.

Richmond Service. The Richmond Ferry Service was launched by WETA in January 2019; it provides commute-only weekday service between the Richmond terminal and the downtown San Francisco Ferry terminal. In August 2019 WETA added a summer weekend pilot service between the Richmond terminal and the downtown San Francisco Ferry Terminal. The Richmond service had a ridership of approximately 200,300 during its first twelve months of operation.

Seaplane Lagoon Service. The Seaplane Lagoon Service was launched on July 1, 2021 and is a weekday ferry route that directly connects Alameda and San Francisco. This commuter route provides a service between the Seaplane Lagoon Ferry Terminal in Alameda and Downtown San Francisco. The addition of this route allowed for the separation and revamping of the Oakland and Alameda service routes, with WETA now providing an Oakland to San Francisco ferry commute service. The Seaplane Lagoon service had a ridership of approximately 146,000 during its first twelve months of operation, in FY 2021-22.

WETA Emissions Inventory

Fleet Size & Terminals

WETA has always been an environmental leader in developing clean vessel technology. From the beginning, WETA pushed for the development and implementation of new diesel engine technology that exceeded Environmental Protection Agency's (EPA) standards, proving to the industry that increasingly stringent federal emissions requirements were achievable. WETA's newest vessels are the first passenger vessels in the country to achieve EPA's Tier 4 emissions standards, reducing an estimated 10 tons of greenhouse gas (GHG) emissions annually. WETA operates 16 vessels on 6 separate routes, calling on 11 terminals. Combined, WETA's current fleet burns an estimated 3.7 million gallons of fuel a year for vessel operation and maintenance.

Table 1. WETA Vessels

No.	Vessel Name	Year Built	Engine Tier	End of Useful Life	Passenger Capacity	Speed (Knots)	Bike Capacity
1	Carina	2018	Tier 3 (Tier 4 Equivalent)	2046	400	27	50
2	Argo	2018	Tier 3 (Tier 4 Equivalent)	2046	400	27	50
3	Hydrus	2017	Tier 3 (Tier 4 Equivalent)	2044	400	27	50
4	Cetus	2017	Tier 3 (Tier 4 Equivalent)	2044	400	27	50
5	Bay Breeze *	1994	Tier 2	2020	250	27	50
6	Peralta	2001	Tier 2	2030	331	25	50
7	Taurus	2009	Tier 4	2037	225	25	50
8	Pisces	2009	Tier 4	2035	225	25	50
9	Intintoli*	1997	Tier 2	2024	349	34	30
10	Pyxis	2017	Tier 4	2045	445	34	30
11	Vela	2019	Tier 4	2047	445	34	30
12	Lyra	2020	Tier 4	2046	445	34	30
13	Mare Island**	1997	Tier 2	2025	330	34	30
14	Gemini	2008	Tier 4 (2023)	2035	225	25	50
15	Scorpio	2009	Tier 4 (late 2022)	2037	225	25	50
16	Dorado	2022	Tier 4	2048	320	35	37

* Vessel to be replaced in 2024

** Vessel to be replaced in 2025

While California has made great progress towards reducing emissions as outlined in AB32, the California State Transportation Agency's (CalSTA) Climate Action Plan for Transportation Infrastructure (CAPTI) recognizes that the transportation sector accounts for more than half of all emissions and lays out a framework to aggressively reduce greenhouse gas emissions from the transportation sector while supporting public health, safety, and equity. According to studies done by the California Air Resources Board (CARB), ferries account for 11% of GHG emissions.

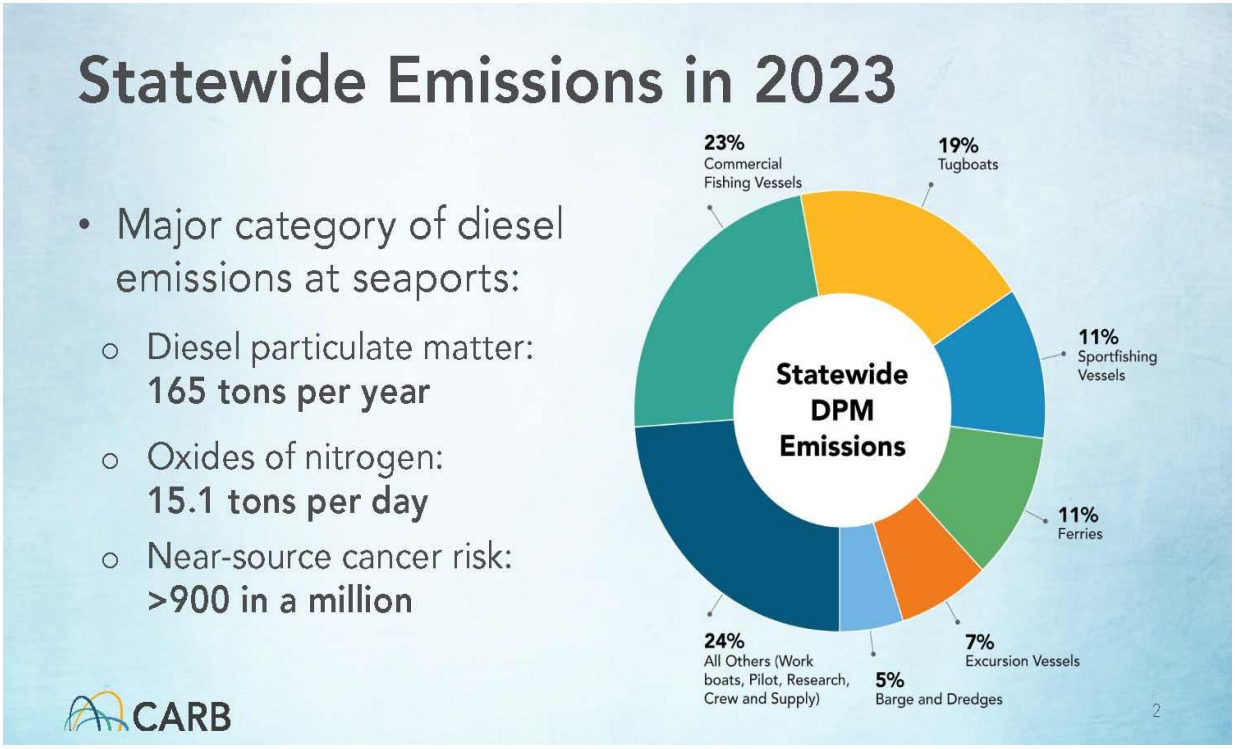


Figure 2. 2023 CARB Statewide Emissions Chart

Climate Initiatives

WETA Climate Initiatives

Over the last 10 years, ferries have become an increasingly critical part of the Bay Area's overburdened transportation system. With funding and environmental approvals, WETA's long-range plan calls for new terminals in Treasure Island, Mission Bay, Berkeley, Redwood City, the South Bay, and the Carquinez Strait. As WETA prepares to grow, the agency is also advancing plans to grow sustainably, and with an eye toward reducing greenhouse gas emissions.

WETA has always been an environmental leader in developing clean vessel technology. From the beginning, WETA pushed for the development and implementation of new diesel engine technology that exceeded Environmental Protection Agency's (EPA) standards, proving to the industry that increasingly stringent Federal emissions requirements were achievable. WETA's newest vessels are the first passenger vessels in the country to achieve EPA's Tier 4 emissions standards, reducing an estimated 10 tons of GHG emissions annually.

WETA has taken several steps recently to reduce emissions and start developing plans to shift vessel technology to zero emissions with the goal of transitioning at least 50% of WETA's vessels to zero emission technology by 2035. Five initiatives that WETA is conducting to begin achieving this goal are described below in more detail.

Installation of Diesel Particulate Filters. Diesel particulate filters (DPF) are an emissions reduction exhaust after treatment device that traps particulate matter such as soot and ash. These devices capture and store exhaust soot, which must be periodically burned off to regenerate the filter. The regeneration process burns off excess soot deposited in the filter, which prevents harmful exhaust emission and the black smoke commonly seen emitted from diesel equipment. Installing DPFs have several benefits including reducing air pollution by 85%, spurring market adoption of new cutting-edge emission reduction equipment, and complying CARB's Commercial Harbor Craft Regulations which are described below.

In spring 2022, WETA started the process of procuring equipment to perform a DPF demonstration on the exhaust system of the starboard diesel generators on WETA's vessel the MV/PYXIS. This demonstration project will showcase the technology required to comply with upcoming CARB regulations for Commercial Harbor Craft. The work involves modifications to the existing exhaust piping to accept a DPF and providing new electrical power to the DPF. The work will lay the foundation for future DPF installations on the remaining PYXIS Class vessels and other WETA vessels that have the space available to accommodate a DPF.

The installation of DPFs is an interim step to drastically reduce emissions while WETA develops and implements plans to transition 50% of its vessel fleet to zero emissions by 2035. The installation of DPFs will also advance the transition to zero emissions by pushing the maritime industry to invest more resources into low and zero emission technology and will also help meet President Biden's goal of achieving net-zero GHG emission by no later than 2050.

2021 Zero Emission Study. In the spring of 2021, WETA launched a Zero Emission Study to inform development of a plan to transition San Francisco Bay Ferry operations to zero-emission vessels. The study is currently in process and is investigating the use of electric and hydrogen propulsion systems

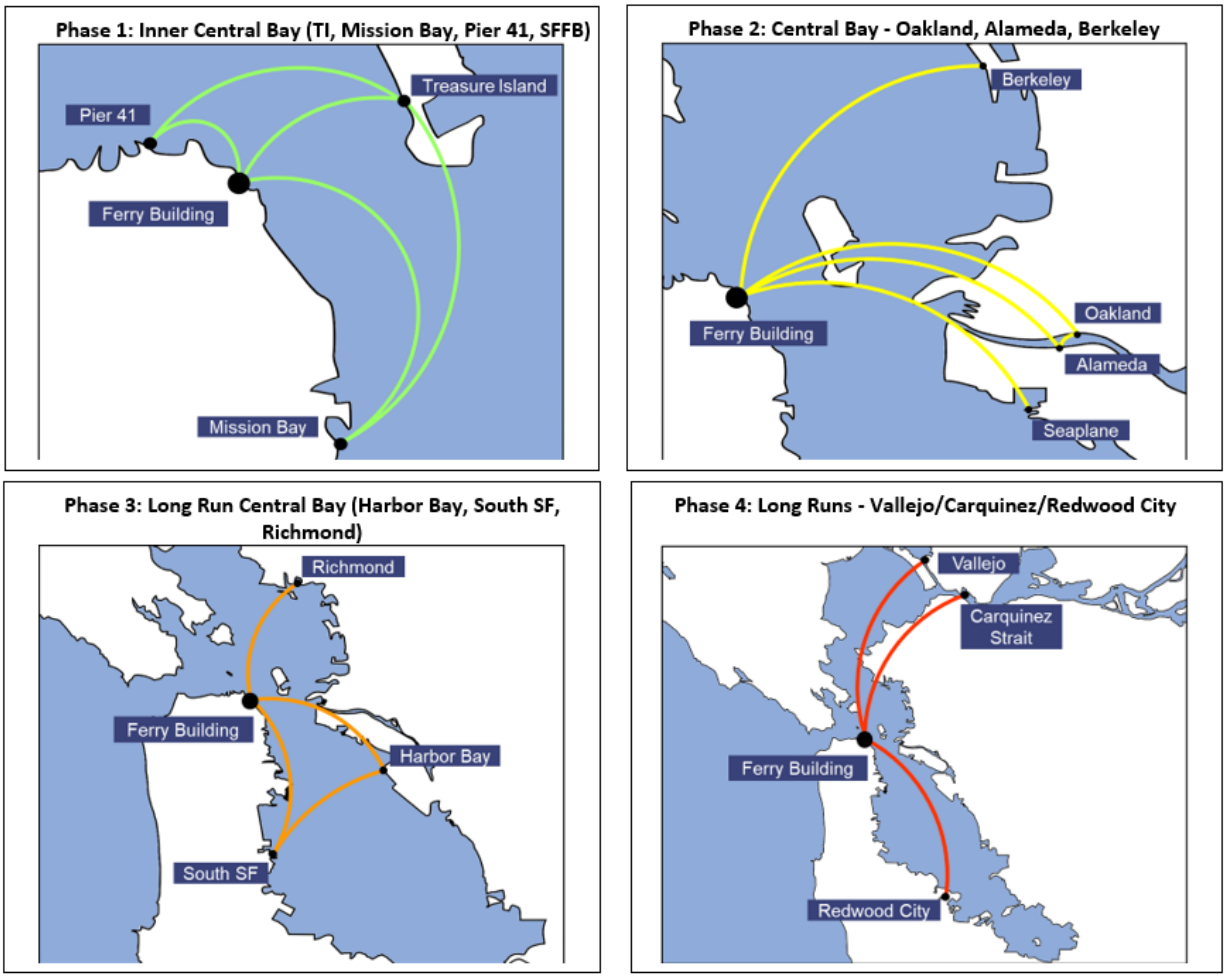
as well as resolving the technical and regulatory barriers to implementation. This effort is supported by grant funding from the California Energy Commission (CEC). The study will follow CEC guidance to develop a "blueprint" of actions and milestones needed for implementation of a zero-emission fleet and related electric charging and/or hydrogen refueling infrastructure.

The Study is proceeding under two separate but parallel tracks. One track is focused on vessels and the other on shoreside infrastructure. The separate work efforts intersect at carefully chosen milestones to update and inform each team, ensuring consistency with assumptions, next steps, and conclusions. The project tasks align with three main implementation stages:

- Stage 1: Baselining: creating a baseline understanding based on data collection to develop contextual settings for vessels, route profiles, shoreside infrastructure and utilities.
- Stage 2: Optioneering: develop vessel and infrastructure solutions with a subsequent opportunity and constraint assessment of each. This stage will identify optimal technical solutions and specifications that will be carried on for further study.
- Stage 3: Blueprint & Strategy Development: Lay out an actionable path to progress to procurement, design, and delivery of zero emissions ferry service.

The entire effort is anticipated to be complete by summer 2023. WETA will phase the implementation of zero emissions on the agency's vessels. The images below represent the anticipated phasing.

Figure 3. Transition to Zero Emissions Development Phases



Oracle Park on gamedays. The demonstration project will also provide public education opportunities about climate change and zero-emission technologies in the maritime field.

The San Francisco Clean Ferry Network. As WETA is conducting its zero-emission study, the agency is simultaneously securing grant funds to for its first phase of transitioning its fleet to zero emissions. WETA has been awarded a series of grants in the last two years that together will fund a network serving locations along the San Francisco waterfront. In 2020, WETA was awarded $9 million from CalSTA to design and build its first zero-emission ferry along with shoreside infrastructure. In early 2022, WETA won a $3.4 million Federal Transit Administration (FTA) grant to add an additional battery-electric vessel to the network. Most recently WETA was awarded an additional $14.96 million grant from CalSTA to fund an electric vessel and shoreside infrastructure to support the region's first all-electric, high frequency ferry service network linking established and emerging waterfront job and population centers in Treasure Island, Mission Bay, and Downtown San Francisco to support local and state congestion and emissions reduction goals.

The San Francisco Clean Ferry Network will offer a much-needed transportation option for commuters and residents in Mission Bay and Treasure Island, initially providing an estimated 464,000 annual trips with the first two vessels and growing to over 1.2 million annual trips by 2049. Providing an attractive alternative to driving diverts vehicle trips from local freeways and arterial streets and reduces VMT. The high-frequency ferry service will offer relief from traffic and congestion resulting in an estimated 455,000 MTCO2e GHG reduction and will reduce VMTs by 144 million miles. In addition to the residents, commuters, and visitors using the system, the entire population in the Bay Area airshed is a beneficiary of this zero-emission, all-electric ferry service network. As WETA's first zero emission service, this project would help pave the way for the transition of WETA's longer distance routes and will accelerate the transition to zero emission ferry service region wide. An ancillary environmental benefit of the Ferry Network is completing the connection to Downtown San Francisco for pedestrians and bicyclists from the East Span bike/ped path on the San Francisco Oakland Bay Bridge.

Emission Reduction Goals

WETA has three emission reduction goals:

1. Reduce vessel fleet emissions by over 50% by 2035
2. Establish the region's first zero emission ferry network
3. Advance Maritime Zero Emission Technology

Reducing Fleet Emissions

WETA's goal to reduce vessel fleet emissions by over 50% by 2035 will be accomplished with the conversion of 8 of WETA's existing vessels to zero emission technology, building 6 new zero emission vessels as well as installing DPFs on 2 vessels that are currently under construction. WETA will also be installing DPFs on several existing vessels in the near term to reduce emissions by 85% on those vessels until they are replaced with zero emission vessels.

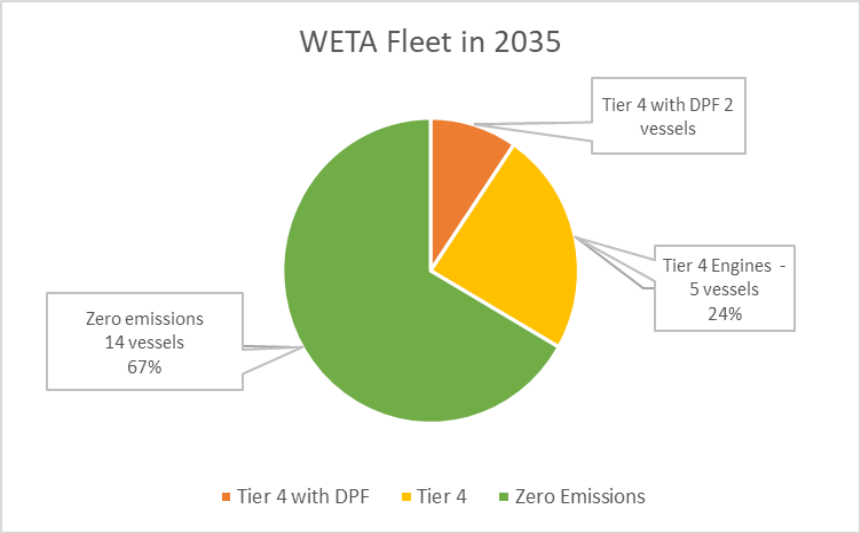
Table 2. WETA Fleet Emission Reduction Plan

Vessels	Qty	Tier Status	Primary Route	Technology in 2035	End of Useful Life*
Existing Fleet (15)					
Hydrus Class	4	Tier 3	Alameda	Convert to Zero Emissions	2044-2046
Pyxis Class	3	Tier 4	Vallejo	Tier 4	2045-2047
Gemini Class	4	Tier 2 (Tier 4: 2022)	SSF/Richmond	Tier 4 + DPF Replacements under construction	2035-2037
Peralta	1	Tier 2	Harbor Bay	Retired	2030
Bay Breeze	1	Tier 2	Harbor Bay/Alameda	Retired	2020
Intintoli & Mare Island	2	Tier 2	Vallejo	Retired	2024-2025
Under Construction (6)					
Dorado 1 & 2	2	Tier 4	Universal	Tier 4	2048-2049
Dorado 3 & 4	2	Tier 4	Universal	Tier 4 + DPF	2049-2050
Intintoli & Mare Island Replacements	2	Zero Emissions	Universal	Zero Emissions	2050-2051
Future (8)					
S.F. Zero Emissions Ferry Network	4	Zero Emissions	Treasure Island - San Francisco - Mission Bay	Zero Emissions	TBD
Gemini Class Replacements	4	Zero Emissions	SSF/Richmond	Zero Emissions	TBD

*25 year useful life plus 2 years for construction
** DPF: Diesel Particulate Filter

Converting these existing vessels and building new zero emission vessels will eliminate emissions for 67% of WETA's fleet. While converting 2 vessels to Tier 4 DPF will reduce WETA's emissions by 85% for nearly 10% of its fleet. With a fleet size of 21 vessels in 2035, the zero emission and Tier 4 DPF conversions will result in over 50% reduction in WETA's emissions. The Figure 4 shows the breakdown of vessel technology for WETA's fleet in 2035. The estimated completion of these vessel conversion projects, and new vessel builds is projected to be between 2025 and 2035.

Figure 4. 2035 Vessel Emission Reduction



Establish the Region's First Zero Emission Ferry Network

WETA is developing plans to implement the San Francisco Clean Ferry Network, a four vessel all-electric fleet that will provide regular ferry service connecting Downtown San Francisco with neighborhoods in Mission Bay and Treasure Island. The high frequency ferry route will expand transbay transit options for Mission Bay and Treasure Island residents, employees and visitors and relieve traffic congestion on surface streets and bridges alike. It will provide fast, convenient, affordable, and reliable transit service to an area that continues to experience significant growth (Mission Bay) and an area that is undergoing significant growth (Treasure Island) and will connect existing San Francisco Bay Ferry services from the cities of Alameda, Oakland, Richmond, and Vallejo.

With Bay Area bridges in gridlock and other efforts to increase transbay capacity decades out, increasing ferry service is one of the only ways the region can add transbay capacity in a shorter time frame. The Project proposed to be funded in this application will eliminate an estimated 72 million vehicle miles traveled and generate a reduction of approximately 227,000 metric tons of carbon dioxide by reducing vehicle congestion and using zero-emission ferries to provide service.

Figure 5. Route map: Future San Francisco Clean Ferry Network

Advance Maritime Zero Emission Technology

Since the agency's inception, WETA has consistently been an environmental leader in developing new clean diesel technology for use on passenger ferry vessels. Beginning with its first vessels, the Gemini Class series constructed in 2007, WETA pushed for the development and implementation of new diesel engine after-treatment technology. This resulted in these vessels exceeding the Environmental Protection Agency's (EPA) then-current Tier 2 emissions standards by 97 percent, proving to the industry that increasingly stringent Federal emissions requirements were achievable. As WETA has built additional vessels, the agency has prioritized advancing clean diesel and now, zero emission technologies.

WETA frequently works with engine manufacturers and federal and state regulators (EPA and CARB) to test and certify new technology on our vessels. WETA's newest fleet of 3 high speed vessels are the first passenger vessels in the country to achieve EPA's Tier 4 emissions standards and will reduce an estimated 10 tons of NOx, PM and CO emissions annually, utilizing a combination of selective catalytic

reduction and diesel oxidation catalyst technologies.

CARB recently enacted changes to its Commercial Harbor Craft regulations, requiring operators to install Diesel Particulate Filters (DPFs) on generator and main propulsion diesel engines in the coming years. While the marine diesel industry has not yet advanced this technology to the point of commercial viability, WETA initiated discussions with engine and DPF manufacturers in 2020 and 2021 to explore the development of a filter that would enable the generator engines on some vessels in WETA's fleet to accommodate a DPF. In August 2022, WETA awarded a contract to conduct a Diesel Particulate Filter demonstration project on WETA's newest vessel class, the Pyxis class vessels. The demonstration project will be installed on the three vessels in the Pyxis class. WETA currently has a total of 32 marine generators in use on 16 vessels. If the demonstration project is successful, WETA will work to install DPFs on additional vessels as funding and feasibility allow.

These have been innovative and cutting-edge achievements for the passenger ferry vessel industry, however, more needs to be done to support California and Federal emission reduction goals. Implementing zero emission technology is the next logical step for WETA to help California meet the greenhouse gas reduction goals outlined in AB 32 and President Biden's goal of achieving net-zero greenhouse gas emission by no later than 2050. WETA is now working to advance maritime zero emission technology through a commitment to transition 50% of its vessel fleet to zero emissions by 2035. WETA has several efforts in queue to advance zero emission technology in the marine industry:

- WETA is currently working with marine engineers to design a battery electric ferry vessel that meets the speed and route requirements for the San Francisco Bay Ferry system. This passenger only electric catamaran will be designed and constructed for efficient and reliable ferry service. The expected passenger capacity target range may be 250-400 passengers with a minimum service speed range of 21-30 knots.
- WETA is finalizing an agreement with SWITCH Maritime to bring the 75-passenger MV Sea Change, the first hydrogen ferry vessel, to the San Francisco Bay to operate a daily pilot service connecting Downtown San Francisco to the Fisherman's Wharf area in addition to supplemental special event service to Oracle Park and Chase Center. The ferry is powered by hydrogen fuel cell stacks, which produce no carbon emissions at the point of propulsion. The only emissions from hydrogen fuel cell propulsion are water and heat.
- WETA is currently developing a project to install on-site battery energy storage systems on six existing floats in the cities of Oakland, Alameda and Downtown San Francisco to help facilitate the agency's shift to zero emission ferries. While current battery electric vessel technology will allow WETA to put electric ferries into service on its shorter routes, WETA is challenged by the grid's capacity constraints and limited shore-side space for charging infrastructure. This project provides a solution to these challenges by making modifications to existing floats on certain short-distance ferry routes and installing batteries to increase useable storage volume and supplement the electric power grid. The battery energy storage system that WETA will install on these select routes will not only reduce and smooth peak grid demand for each location, the modifications to the float will also create space for additional batteries, giving WETA the ability to grow its electric ferry service over time, including to new locations around the Bay Area.

Strategies and Actions

Table 3. WETA CAP Strategies and Actions

Strategy	Action	Metric to track progress	Timeframe
Convert vessels to zero emission and Tier 4 + DPF	Convert existing WETA vessels to zero emission technology/ build new zero emission vessels	Y/N conversion complete	2035
	Convert WETA vessels to Tier 4 + DPF	Y/N conversion complete	2035
Implement the San Francisco Clean Ferry Network	Construct 4 all-electric vessels	Y/N vessels constructed	September 2025
	Develop infrastructure for terminals in Mission Bay and Treasure Island	Y/N facility and infrastructure constructed	March 2024
Hydrogen Vessel Sea Change	Implement hydrogen ferry demonstration project	Y/N demonstration project implemented	Fall 2022
	Develop lessons learned	Y/N lessons learned	Summer/Fall 2023
On-site Battery Storage System	Determine needed infrastructure installation and plan for battery storage and use	Y/N infrastructure needs identified, and plan developed	In process
	Install storage and battery systems and implement their use	Y/N storage system installed and implemented	TBD

Implementation and Monitoring

The Water Emergency Transportation Authority Climate Action Plan is designed to help guide agency priorities and decision-making and will be updated as WETA finalizes its zero emissions study or as additional emission reducing efforts are developed. It will be implemented in the management of ongoing ferry operations, the enhancement and expansion of services and facilities, and in planning for the future. The Plan will provide WETA leaders with guidance and direction at critical junctures where resource allocation and stakeholder needs must be addressed. It will also direct WETA's attention to areas of focus as the future unfolds. It does not dictate how these various activities occur, but instead provides a cohesive policy framework for long-term growth and success.

WETA will continually revisit and reassess the direction of this Climate Action Plan through planning studies and public forums. Additionally, monitoring of WETA's progress toward the goals and objectives outlined in the Plan will occur through integration with key regional reporting requirements and Board oversight. WETA adheres to standards and reporting requirements set by federal, state, and regional agencies. WETA will work to integrate and synchronize these external requirements with its own framework for tracking performance and progress towards meeting the Plan strategies and objectives. Key reports and standards include:

- California Air Resources Board (CARB) reporting requirements for Commercial Harbor Craft.
- Federal Requirements: WETA reports performance data to the Federal Transit Administration (FTA) through annual submittals to the National Transit Database. Additionally, WETA participates in the FTA Triennial review process.
- Regional Requirements: The Metropolitan Transportation Commission (MTC) requires WETA to make annual reports of key service and cost efficiency metrics as part of its Transit Sustainability Project. MTC also requires that transit operators within the Bay Area produce Short Range Transit Plans (SRTPs) that describe and quantify their 10- year operating and capital plans. The WETA 2016 Short Range Transit Plan (SRTP) provides a fiscally constrained projection for the FY2016–2025 period.
- WETA also works closely with CARB and the U.S. Environmental Protection Agency (EPA) when testing new engine and emission reduction equipment.
- Other:
    - WETA 2050 Service Vision and Business Plan –WETA is developing a shared vision of the San Francisco Bay Area ferry system in 2050, including the level of service and extent of WETA ferry operations and emergency response. This service visioning effort is a unique opportunity to re-imagine water transit and address emerging priorities concerning the environment, equity, economic development, emergency response and quality of life throughout the Bay Area. The final Plan is anticipated to be complete in Summer 2023.
    - WETA's Emergency Response Plan (March 2016) and related documents describe WETA's plans and strategy for response to a catastrophic incident affecting Bay Area regional transportation operations consistent with the standards of the National Incident Management System (NIMS), the California Standardized Emergency Management System (SEMS) and other federal and state requirements and standards for emergency response.

WETA will need an infusion of federal, state, and local funds to achieve the aggressive plan to transition 50% of the fleet to zero emissions by 2035. Ability to implement this plan hinges on new funds becoming available, but also includes some of WETA's existing funding streams for vessel replacement projects. While WETA is currently conducting a zero emissions study, expected to be complete in mid-2023, WETA is simultaneously securing/applying for eligible funding opportunities, including:

- In April 2020, WETA received a $9.06 million Transit and Intercity Rail Capital Program grant from the California State Transportation Agency to support construction of an all-electric ferry and related infrastructure for new Mission Bay ferry service. The project includes design and construction of one all-electric vessel and related shoreside charging infrastructure at the Mission Bay and Downtown San Francisco Ferry Terminals. Implementation of this project will be guided by the initial findings of the Study.
- In Spring 2022, WETA was awarded a $3.44 million grant from the FTA Passenger Ferry Grant program to fund 1 small electric vessel to operate on the San Francisco Clean Ferry Network.
- In July 2022, WETA was awarded a $14.96 million Transit and Intercity Rail Capital Program grant from the California State Transportation Agency to support construction of an all-electric ferry and related infrastructure for the San Francisco Clean Ferry Network.
- WETA is sponsoring California Assembly Bill 2807, which would make commercial harbor craft eligible for several pots of funding to transition to zero emission technology. If signed by the Governor, AB 2807 will clarify that commercial harbor craft are eligible for the following California funding programs:
    - The Low Carbon Transit Operations Program (PRC 75230) - Cap-and-trade revenues from the Greenhouse Gas Reduction Fund (HSC 39719).
    - The Clean Transportation Program (HSC 44272 et seq.) - Moneys deposited in the Alternative and Renewable Fuel and Vehicle Technology Fund (44273).
    - The Air Quality Improvement Program (HSC 44274 et seq.) - Air Pollution Control Fund: smog abatement fee (HSC 44060(d)(1)(B)); Cap and Trade revenues (HSC 38597)
    - The Clean Truck, Bus, and Off-road Vehicle and Equipment Technology Program (HSC 39719.2) under the GHG Reduction Fund Investment Plan and Communities Revitalization Act. - Cap-and-trade revenues from the Greenhouse Gas Reduction Fund (HSC 39719).
- WETA is applying for funds from the FTA Passenger Ferry Grant Program (5307(h)) and the new Electric Low-Emission Ferry Pilot Program authorized through the 2021 Infrastructure and Investment Jobs Act (IIJA) in the coming years to help secure funds for conversion of existing ferries, new zero emission ferries, installation of DPFs and construction of shoreside charging infrastructure.

Over the next year as WETA finalizes plans to transition 50% of its vessel fleet to zero emissions, the agency will be working to identify other federal, state, and local funding to support this Climate Action Plan.

Another challenge many of WETA's initiatives and projects face involve difficulties surrounding the installation of shoreside charging infrastructure. For terminal construction projects, WETA works with over 14 regulatory permitting agencies. Installation of shoreside charging infrastructure requires coordination with several of these permitting agencies, as well as over 10 jurisdictions and several utility companies. WETA is working with these agencies early in the planning process to ensure the various

needs and process of each agency are built into the project early on. To streamline project delivery, WETA is also coordinating with the California Governor's Office of Business and Economic Advancement's zero emission division to help overcome any barriers during the project's implementation and to receive political support.

WETA will continue to adapt this Climate Action Plan to advancements in technology and the needs of the communities WETA serves. The agency is currently conducting extensive outreach to our communities as we embark on an effort to craft a shared vision of what ferry service should look like in the year 2050. This effort, called Bay Ferry 2050, will feed into this Climate Action Plan, and will inform how WETA operates in the future and what changes will need to be made to get there, presenting the specific strategies and actions required to achieve the 2050 WETA Service Vision.

In recent years, ferry service has expanded as pre-COVID traffic congestion reached record levels. The post-COVID recovery era offers a chance to further expand and integrate water transit as a key component of the regional transit network and emergency response system. The Bay Ferry 2050 and Climate Action Plan are unique opportunities to re-imagine water transit and address emerging priorities concerning not only the environment, but also equity, economic development, emergency response and quality of life throughout the Bay Area.

Development of Bay Ferry 2050 will involve significant stakeholder engagement. Throughout this project, the WETA Board and staff are seeking input from stakeholders across the Bay Area -- governments, businesses, partners, advocates, current and future riders -- to develop a long-term vision of climate conscious ferry service on the Bay.

As WETA develops Bay Ferry 2050, this Climate Action Plan will be updated accordingly.