



Agenda Item No. (5)

To: Building and Operating Committee/Committee of the Whole  
Meeting of May 19, 2022

From: James P. Swindler, Deputy General Manager, Ferry Division  
Denis J. Mulligan, General Manager

Subject: **APPROVE ACTIONS RELATIVE TO A HYDROGEN FUEL CELL  
FERRY DEMONSTRATION PROJECT**

### **Recommendation**

The Building and Operating Committee recommends that the Board of Directors authorize the General Manager to execute an agreement in the amount of \$300,000 with the San Francisco Bay Area Water Emergency Transportation Authority (WETA) regarding a six-month demonstration project on San Francisco Bay utilizing a hydrogen fuel cell ferry, with the understanding that sufficient funds are available in the FY 21/22 Ferry Division Operating Budget for this proposed demonstration project.

This matter will be presented to the Board of Directors at the May 20, 2022, meeting for appropriate action.

### **Summary**

The Golden Gate Bridge, Highway and Transportation District (District) and WETA are the two public ferry operators on San Francisco Bay. WETA has secured the right to lease and operate the *Sea Change*, the world's first 100% zero-emission hydrogen-powered ferry, along the San Francisco waterfront for a six-month duration beginning in June 2022.

The *Sea Change* has a passenger capacity of 70 and a cruising speed of 11 knots, so it is not an appropriate vessel for the District's ferry routes, nor for most WETA routes. However, WETA has worked with SWITCH Maritime to develop a service concept that would test the technology on the San Francisco Bay while supplementing WETA service. WETA's estimated cost for the six-month demonstration project is \$1.8 million, which includes leasing the vessel, berthing, fuel and crew costs.

The *Sea Change* will operate for 8 hours/day, 7 days/week between Pier 41 and WETA's Downtown San Francisco terminal at the Ferry Building, which is adjacent to the District's ferry terminal. It will also connect riders between the downtown terminal and Mission Bay to serve special events at Oracle Park and Chase Center.

This demonstration project will highlight a cutting-edge maritime application of hydrogen fuel cell technology, and will build public awareness about other private and public sector efforts throughout the region to reduce greenhouse gas emissions and address the climate emergency. It is estimated that the demonstration project will generate 59,000 total riders, with an average of 648 riders/day.

Participation in this demonstration project will provide opportunities for the District's ferry crews and maintenance staff to gain hands-on experience in the operation and maintenance of a hydrogen fuel cell ferry. Additionally, as a sponsor of the pilot project, the District will have an opportunity to operate the vessel in the District's service area.

**Fiscal Impact**

The total budget for the project is attached. The cost to the District for the six-month pilot is \$300,000. If approved, funds are available in the FY 21/22 Ferry Division Operating Budget.

**Bareboat Charter**

\$	784,750	<i>6 month cost</i>
\$	130,792	<i>monthly</i>
\$	4,300	<i>daily</i>

**Maintenance**

\$	37,500	<i>6 month cost at 3/4 FTE (\$75,000)</i>
\$	6,250	<i>monthly</i>
\$	205	<i>daily</i>

**Berthing**

\$	8,700	<i>6 month cost</i>
\$	1,450	<i>monthly</i>
\$	48	<i>daily</i>

**Fueling**

\$	526,200	<i>6 month cost</i>
\$	87,700	<i>monthly</i>
\$	2,883	<i>daily</i>

**Total (excl crew)**

\$	1,357,150	<i>6 month cost</i>
\$	226,192	<i>monthly</i>
\$	7,436	<i>daily</i>

**WETA Opex**

\$	442,850	<i>6 month cost</i>
\$	73,808	<i>monthly</i>
\$	2,427	<i>daily</i>

**Total**

\$	1,800,000	<i>6 month cost</i>
\$	300,000	<i>monthly</i>
\$	9,863	<i>daily</i>

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