

Bus Program

ZEB: Demonstration and Facility Improvements

Estimated Cost: \$150.2 million

Estimate Class 4 (see appendix)

Approved Budget: \$18.4 million

Year of Completion: 2021

Project Manager: VTA – Art Douwes

Manufacturer: Gillig / Ballard



Project Description:

In December 2000, the VTA Board adopted the low-emission diesel path in complying with California Air Resources Board's (CARB) regulation to reduce nitrogen oxide and particulate matter emitted by public transit buses. In accordance with these regulations, VTA, in a joint program with SamTrans, implemented a demonstration program to test the viability of zero-emission fuel-cell bus (ZEB) technology.

VTA procured three 40-foot low-floor ZEBs, modified facilities, installed a hydrogen fueling station, and provided training for staff, emergency responders and others. The three ZEBs started revenue service in February 2005.

VTA intends to comply with the new CARB regulation for transit agencies which requires that 15% of all new transit buses purchased by VTA after 2011 will be ZEBs. The program will also include facilities construction and training to support the increased ZEB fleet.

Project Status:

Although CARB's initial demonstration requirements for the revenue operation of the ZEBs were completed in August 2006, VTA plans to continue operating the three ZEBs in accordance with Federal Transit Administration requirements.

In November 2006, CARB modified the rules concerning ZEBs to give public agencies more time and allow the technology to develop. The new rules include an advanced ZEB demonstration program using advanced fuel cell technology and a delay of the 15% purchase requirement from 2008 to January 2011.

The Advanced ZEB Demonstration Program includes providing maintenance facilities, training personnel, and procuring ZEBs for revenue service by January 1, 2009. The ZEBs would operate for a minimum of 12 months, with the agencies retaining operation/maintenance records, and reporting to CARB.

The advanced demonstration program will be a joint effort with AC Transit, Golden Gate Transit, SamTrans, and MTC in accordance with the new CARB regulations and would place 12 advanced ZEBs into revenue service.

Project Schedule:

Activity	Start	End	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Initial Demonstration (3 ZEBs)	Early 2005	Late 2006																
Advanced Demonstration (15 ZEBs)	Early 2008	Late 2009																
Major Procurement (15% of Fleet)	Early 2011	Late 2019																



Approved Budget:

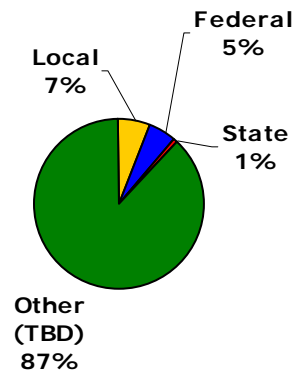
Project Cost Element	Approved Project Budget <i>a</i>	Dec-07 Committed Costs <i>b</i>	Dec-07 Incurred Costs <i>c</i>	Budget Balance <i>d = (a-c)</i>
Construction and Major Procurement	13,990	13,961	13,830	160
Real Estate	-	-	-	-
Labor, Services and Support	4,334	4,013	3,991	343
Contingency	126	-	-	126
Total Approved Budget	18,450	17,974	17,821	629

Approved Budget Incurred 97%
 Approved Budget Committed 97%

NOTE: All amounts are Year Of Expenditure dollars in \$1,000's

Anticipated Funding:

Funding Source	Amount
Local (Measure A)	\$4.9 million
Local (SAMTRANS)	\$4.9 million
Federal	\$7.3 million
State	\$1.3 million
Other (TBD)	\$131.8 million
Total	\$150.2 million



ZEB in New Maintenance Facility



ZEB Hydrogen Fuel Cell