

**Exhibit 2-37**  
**Comparison of Alternatives: Earthwork/Excavation**

ALTERNATIVE	OPTION	TOTAL EXCAVATION cubic meters (cubic yards)	EARTHWORK BALANCE cubic meters (cubic yards)
Alternative 2	No-Detour	196,000 (256,000)	173,000 (226,000) import
	With Detour	156,000 (204,000)	99,000 (130,000) import
Alternative 5	All Options	487,000 (637,000)	296,000 (387,000) disposal
Preferred Alternative		418,000 (547,000)	207,000 (271,000) disposal

Source: June 2005 and September 2007 Advanced Planning Study Reports.

## 2.7 Project Costs

The estimated construction costs for each of the alternatives have been developed and are shown in **Exhibit 2-38**. These costs are based on 2008 unit prices and are escalated at the following rates to represent the year of expenditure costs: 2007-2008 at five percent per year, 2008-2010 at four percent per year, and 2010-2014 at 3.3 percent per year. These cost estimates are conceptual and are based on information that was available during the preparation of this environmental document. Estimates were developed from information obtained in 2007 based on the preliminary alignments, existing utilities, historic construction costs, and quotations from various local suppliers and contractors. These estimates range from zero for Alternative 1 - No-Build to approximately \$1.1 billion for Alternative 5 (estimates in year of expenditure dollars). The total construction cost for the Preferred Alternative is approximately \$853 million.

The *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (SAFETEA-LU) (Pub. L. 109-59, 119 Stat. 1144) requires the financial plan for all Federal-aid projects with an estimated total cost of \$500 million or more to be approved by the Secretary (i.e. FHWA) based on reasonable assumptions. The \$500 million threshold includes capital outlay support costs and design services. FHWA has interpreted reasonable assumptions to be a risk based analysis. These cost estimate reviews are required to provide the risk based assessment of the estimate and are used in the approval of the financial plan.

In March 2008, the FHWA conducted a cost estimate review of the Preferred Alternative to verify the accuracy and reasonableness of the current total cost estimate to complete the project and to develop a probability range for the cost estimate that represents the project's stage of design. The FHWA worked with the Project team to review the material quantities and unit costs and develop the expected variance for each. The FHWA input the expected variance into a

Monte Carlo<sup>3</sup> simulation to develop forecast curves that represent a cost estimate range for the project.

The Project team met with the FHWA in April 2008 and May 2008 to determine the confidence level of the cost estimate range based on the project's current stage of development. Based on those discussions, the FHWA performed a Monte Carlo simulation which resulted in total project cost estimate range of \$1.02 to \$ 1.14 billion. This validated the Project team's total project cost of \$1.045 billion.

**Exhibit 2-38**  
**Estimated Construction Cost of Project Alternatives**  
**(in year of expenditure dollars)**

ALTERNATIVE		OPTION		ROADWAY	STRUCTURES	CONSTRUCTION TOTAL
1	No-Build	—		\$0	\$0	\$0
2	Replace and Widen	No-Detour		\$130,300,000	\$657,800,000	\$788,100,000
		With Detour		\$140,00,000	\$702,100,000	\$842,100,000
5	Presidio Parkway	Diamond	Loop Ramp	\$298,800,000	\$805,500,000	\$1,104,300,000
			Hook Ramp	\$297,300,000	\$782,000,000	\$1,079,300,000
		Circle	Loop Ramp	\$299,100,000	\$805,500,000	\$1,104,600,000
			Hook Ramp	\$297,500,000	\$782,000,000	\$1,079,500,000
		Merchant Ramp		\$16,100,000	\$1,300,000	\$17,400,000
	Preferred			\$281,100,000	\$571,500,000	\$852,600,000

Source: Parsons Brinckerhoff, 2008

## 2.8 Construction Activities (Alternatives 2 and 5)

As part of this environmental analysis, a preliminary construction plan was developed. The following discussion provides an overview of the possible construction scenarios for Alternatives 2 and 5.

### 2.8.1 Construction Staging for Alternatives 2 and 5

Staging areas vary by alternative. The Replace and Widen Alternative – No-Detour Option would only use the parking lot of the Post Exchange and Commissary as the primary staging area. For the Replace and Widen Alternative - Detour Option, the primary staging would occur on the parking lot and the site of both the Post Exchange (Buildings 605 and 606) and Commissary (Buildings 610 and 653). The primary staging area for the Presidio Parkway Alternative

<sup>3</sup> A Monte Carlo simulation calculates multiple scenarios of the outcome by continually sampling random values from the expected variance. The simulations ran by FHWA consisted of 10,000 iterations.