

- seismic upgrading of structures;
- divided roadbeds for northbound and southbound Doyle Drive;
- improved structure vertical clearances and upgrading of bridge rails;
- improved geometry including horizontal and vertical curvature, stopping sight distances, deceleration lengths, ramp geometry, and superelevations;
- standard 3.6-meter (12-foot) lane widths wherever feasible with 3.3-meter (11-foot) lane widths at constrained locations; and
- standard shoulders wherever feasible.

2.6 Comparison of Earthwork/Excavation

Each build alternative will require earthwork and excavation. This work will result in disturbance of both artificial fill and native materials. **Exhibit 2-37** summarizes the total volumes of excavation for each alternative.

For Alternative 2, the No-Detour Option would require approximately 173,000 cubic meters (226,000 cubic yards) of imported fill in addition to 196,000 cubic meters (256,000 cubic yards) of excavation, of which 126,000 cubic meters (165,000 cubic yards) is not reusable. This would result in a total of 243,000 cubic meters (318,000 cubic yards) of fill. The With Detour Option would require approximately 99,000 cubic meters (130,000 cubic yards) of imported fill in addition to 156,000 cubic meters (204,000 cubic yards) of excavation, of which 85,000 cubic meters (111,000 cubic yards) is not reusable. This would result in a total of 170,000 cubic meters (222,000 cubic yards) of fill.

For Alternative 5, the Presidio Parkway Alternative, earthwork operations would result in approximately 296,000 cubic meters (387,000 cubic yards) of excess material for off-site disposal. The Presidio Parkway Alternative would have 487,000 cubic meters (637,000 cubic yards) of excavation and 191,000 cubic meters (250,000 cubic yards) of fill.

For Preferred Alternative, the Refined Presidio Parkway, earthwork operations would result in approximately 207,000 cubic meters (271,000 cubic yards) of excess material for off-site disposal. The Preferred Alternative would have 418,000 cubic meters (547,000 cubic yards) of excavation and 211,000 cubic meters (276,000 cubic yards) of fill.

There is the potential that hazardous materials would be encountered during excavation and would require appropriate disposal. Any hazardous materials encountered during construction of the Doyle Drive Project would be handled under the procedures described in the Avoidance, Minimization and/or Mitigation Measures of Section 3.3.3. In addition, Section 3.3.3 provides the estimated costs associated with hazardous material removal procedures.

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