

MATERIAL SOURCES AND WASTE MATERIAL

The design of a large-scale project such as the proposed action requires careful consideration of how to balance earthwork needs with available fill material in the area. In some cases, the excavation of project facilities such as drainage basins produces fill material that can be used elsewhere on the project to support construction of raised facilities such as traffic interchanges. In cases where the project does not produce enough fill material to meet the needs of a project, other suitable sources of material must be found.

ENVIRONMENTAL CONSEQUENCES

Action Alternatives

The proposed action—including the freeway main line, system and service traffic interchanges, drainage channels, and drainage basins—was modeled to estimate earthwork quantities. Cut material is excess material generated as a result of project construction (e.g., from the excavation of a drainage basin). Fill material is the material needed to complete the project construction (e.g., to support a ramp leading to a bridge). The earthwork material deficit is an approximation of what would be needed to complete construction of the proposed project—in other words, the amount of borrow material that would be needed. Although the freeway would generally be aboveground throughout

the corridor, construction of the freeway would generate material that could be used as fill material elsewhere on the project. Material that is not suitable to be used as fill material, or as waste material, would need to be disposed. Table 4-54 lists earthwork quantities needed for each action alternative.

In the Western Section, the W71 Alternative would have the smallest deficit, needing approximately 0.25 million cubic yards of borrow material. The W101 Alternative Eastern Option would have the largest deficit, needing approximately 4 million cubic yards of borrow material.

The Eastern Section E1 Alternative would need approximately 6.2 million cubic yards of borrow material. The earthwork quantities for the E1 Alternative are highly dependent on the suitability of the cut material from the South Mountains.

With regard to project construction, major sources of cut material would include:

- ▶ mountain foothills near Desert Foothills Parkway
- ▶ cuts through the South Mountains
- ▶ large drainage basins and the semidepressed portion of the freeway at Dobbins Road
- ▶ a drainage channel and large drainage basin south of Broadway Road
- ▶ side slopes along I-10 (Papago Freeway)

Additionally, ADOT-approved material sources are located within and around the Study Area. The contractor would ultimately be responsible for locating material to meet the projected deficit and disposing of any unsuitable material. Material source locations would be selected by the contractor, although any selected source must be examined for environmental effects by the contractor, prior to use, through a separate environmental analysis in accordance with ADOT’s *Standard Specifications for Road and Bridge Construction*, Section 1001 Material Sources (2008 Edition) (Stored Specification 1001.2 General).

No-Action Alternative

No borrow material would be needed for this alternative.

MITIGATION

Contractor Responsibilities

The contractor would use material sources from the ADOT *Contractor-Furnished Materials Sources List*. If the source that the contractor prefers to use is not on the ADOT list, then the contractor would complete ADOT EPG’s Material Source Environmental Analysis Application in accordance with ADOT’s *Standard Specifications for Road and Bridge Construction*, Section 104 Material Sources (2008 Edition) (Stored Specification 104.12 General) prior to using material from that source.

Contractor-furnished material sources must go through a process to obtain environmental clearance for use on ADOT projects. The material source owner or operator must submit a Material Source Environmental Analysis Application, with cultural survey and reports, to ADOT EPG. After receiving the completed application, ADOT EPG would initiate a cultural consultation process. Upon successful completion of this process, the material source would receive a tracking number and may be included on the ADOT *Contractor-Furnished Materials Sources List*.

CONCLUSIONS

Construction of the proposed project would need between approximately 6.45 million and 10.2 million cubic yards of borrow material, depending on the selected action alternative in the Eastern and Western Sections—if an action alternative were to be selected. In the Eastern Section, the needed amount would be approximately 6.2 million cubic yards of borrow material. In addition, depending on the action alternative chosen for the Western Section, the amount of borrow material would vary between 0.25 million and 4 million cubic yards. The W71 Alternative would need the least amount, at 0.25 million cubic yards, and the W101 Alternative Eastern Option would potentially need the largest amount—4 million cubic yards. These amounts are not considered excessive for a project of this size. The contractor would ultimately be responsible for locating additional material to meet the projected deficit and for disposing of any unsuitable material.

Table 4-54 Earthwork Quantities, Action Alternatives

Action Alternative	Quantities (approximate millions of cubic yards)		
	Fill (material needed)	Cut (material generated)	Deficit ^a
Western Section			
W59 Alternative	9.70	5.90	3.80
W71 Alternative	8.25	8.00	0.25
W101 Alternative Western Option ^b	9.00–11.00	8.50	1.00–2.00
W101 Alternative Central Option ^b	11.00–13.00	10.00	1.00–2.00
W101 Alternative Eastern Option ^b	11.00–13.00	8.50	2.00–4.00
Eastern Section			
E1 Alternative	11.00	6.40	6.20

^a Some of the deficits do not total correctly. This is because certain assumptions were used for material shrinkage, compaction, topsoil planting, overexcavation, and recompaction under embankments.

^b Ranges are provided because these action alternatives have Partial and Full Reconstruction Options.