

Unavoidable Adverse Impacts

4.1 Introduction

Some impacts to specific resources were evaluated for each build alternative and the No Build Alternative, while others were evaluated regionally. Where data were available for each alternative and effects differed, individual alternative analyses were performed.

Constructing and operating any build alternative would irreversibly and irretrievably commit environmental resources to the project. An irreversible commitment is the permanent loss of the resource.

4.2 Air

After implementing construction mitigation measures, no further adverse impacts were identified. As a result of implementing one of the build alternatives, a beneficial impact would occur because air quality is expected to improve in the proposed project area during operations. Because of increased traffic, air quality in the Hoover Dam vicinity would worsen if the No Build Alternative were selected (see Section 3.1).

4.3 Noise

Even with mitigation measures, the Gold Strike Canyon Alternative would still exceed standards at the upper end of the canyon on the hiking trail. Noise is higher for the No Build Alternative than for any of the build alternatives at the dam crossing (see Section 3.2).

4.4 Biological Resources

Implementing any build alternative could result in the loss of 122 to 143 acres of wildlife habitat (see Table 3-13), including associated vegetation and either the displacement of, or direct loss of, associated wildlife. Partial recovery of some of these losses may be attained through the mitigation measures described in Chapter 3, Measures to Minimize Harm. Implementation of the build alternatives will result in 0.66 to 2.77 acres of temporary fill and 0.11 to 0.67 acres of permanent fill in waters of the United States (see Table 3-16, Section 3.3).

4.5 Water Resources

For the build alternatives, constructing the roadway will increase both short-term and long-term sediment yield over existing conditions. Removing existing vegetative and rock cover will disturb existing conditions, increasing the short-term sediment yield and impacting local and, to a lesser extent, regional water quality. Using BMPs and other measures discussed in Chapter 3 will reduce this impact.

For the three build alternatives, no adverse unavoidable long-term impacts would occur following implementation of BMPs and design/construction of hazardous material spill containment elements (see Section 3.4).

4.6 Cultural Resources

4.6.1 Promontory Point Impacts

Adverse effects on the Hoover Dam National Historic Landmark (NHL) would occur from visual elements of the project that would diminish the integrity of the historic features and setting. Furthermore, FHWA and the NPS determined that construction of the new bridge would adversely affect visitors' historic views of the dam from U.S. 93 in both Nevada and Arizona, and this could not be mitigated. Based on the preliminary design, the Promontory Point Alternative also would have an adverse effect on the following additional historic properties eligible for the National Register for their association with the construction and operation of Hoover Dam or as contributing elements to the NHL: NV:DD:14:30, 26-CK-4751, 26-CK-4752, 26-CK-4753, 26-CK-4754, 26-CK-4765, and 26-CK-5180 (see Section 3.5).

Unavoidable adverse impacts would occur to prehistoric archaeological site NV:DD:14:23 and probably to site NV:DD:14:25. These impacts would occur during construction for the former and operations for the latter. These sites were found to be ineligible for the National Register.

The Promontory Point Alternative also would have an adverse effect on the Gold Strike Canyon and Sugarloaf Mountain TCP.

4.6.2 Sugarloaf Mountain Impacts (Preferred Alternative)

Adverse effects on the NHL would occur from visual elements of the project that would diminish the integrity of the historic features and setting. However, FHWA and the Nevada and Arizona SHPOs determined these effects can be mitigated. Based on the preliminary design, the Sugarloaf Mountain Alternative also would have an adverse effect on the following additional historic properties eligible for the National Register for their association with the construction and operation of Hoover Dam or as contributing elements to the NHL: NV:DD:14:1, NV:DD:14:29, NV:DD:14:30, 26-CK-4751, 26-CK-5180, 26-CK-5789, 26-CK-5790, and 26-CK-5792. Of these, sites NV:DD:14:1 and 26-CK-5790 would not be physically damaged but only indirectly affected by a change in the setting.

Unavoidable adverse impacts would occur to prehistoric archaeological sites NV:DD:14:21 and NV:DD:14:22 from construction of this alternative. These sites were found to be ineligible for the National Register; however, 14:21 is a contributing element of the TCP.

The Sugarloaf Mountain Alternative would also have an adverse effect on the Gold Strike Canyon and Sugarloaf Mountain TCP; however, the alignment traverses the TCP in an area of extensive disturbance. The Nevada and Arizona SHPOs, the Advisory Council on Historic Preservation, and participating Native American tribes have signed a Programmatic Agreement including measures and processes for minimizing harm to the TCP from the preferred alternative.

4.6.3 Gold Strike Canyon Impacts

Based on the preliminary design, the Gold Strike Canyon Alternative would have an adverse effect on the following historic properties eligible for the National Register for their association with the construction and operation of Hoover Dam or as contributing elements to the NHL: NV:DD:14:15, NV:DD:14:16, NV:DD:14:30, 26-CK-4743, and 26-CK-4750.

Since no archaeological sites were identified along this alternative, no unavoidable adverse impacts are expected.

The Gold Strike Canyon Alternative also would have an adverse effect on the Gold Strike Canyon and Sugarloaf Mountain TCP. Based on the severity of this impact, it may be unmitigable.

4.7 Land Use

No unavoidable adverse impacts are identified for any of the three build alternatives. If the No Build Alternative is selected, changes in land use would not occur (see Section 3.6).

4.8 Visual Resources

The proposed bridge (regardless of the alternative implemented) would alter the view, both during construction and operation, from Hoover Dam, Lake Mead, the river put-ins, or the hiking trail and hot springs. For the Promontory Point Alternative, the impact on visual resources is considered unmitigable. Some viewers may consider the bridge to add variety to the view.

FHWA and the NPS determined that construction of a bridge at the Promontory Point crossing would adversely affect visitors' "first impression" historic views of the dam. These views occur as motorists approach the dam on existing U.S. 93 from both Nevada and Arizona. The dominance of the Promontory Point bridge would significantly detract from the historic views of the dam and could not be mitigated. In contrast, the Sugarloaf Mountain bridge would not detract from the historic views as visitors approach the dam from the Arizona and Nevada approaches because it is not visible due to the existing roadway alignment, which presents a direct view of the dam and Lake Mead (see Section 3.7).

4.9 Recreation

Regardless of the alternative selected, construction activities would affect recreation activities that occur in designated construction safety zones or construction areas. In addition, the hiking trail in Gold Strike Canyon would be closed to public access during construction of the Gold Strike Canyon Alternative. This effect is considered an unavoidable adverse impact but is necessary to protect the public's safety.

The proposed bridge (if either the Promontory Point or Sugarloaf Mountain Alternative is implemented) would alter the view, either from Hoover Dam, Lake Mead, or the river put-ins. Implementation of the Gold Strike Canyon Alternative would alter the view from the hiking trail and the hot springs. This impact is considered unavoidable but is not necessarily adverse. Some recreationists are expected to consider the bridge as adding variety to the views.

Unavoidable adverse noise impacts to recreation on the hiking trail are anticipated if the Gold Strike Canyon Alternative is implemented (see Section 3.8).

4.10 Socioeconomics

No unavoidable adverse impacts on population, employment, income, social conditions, minority or low-income populations are expected from any of the build alternatives or from the No Build Alternative.

Implementation of any of the build alternatives would have a beneficial impact on transportation and circulation that would not occur if the No Build Alternative were selected (see Section 3.9).

4.11 Hazardous Materials

No unavoidable adverse impacts would occur from implementing any of the build alternatives or from the No Build Alternative (see Section 3.10).