

5. Other Environmental Consequences

5.1 Unavoidable Adverse Impacts

Impacts to the following environmental resources were evaluated for Alternative D, the preferred alternative, to determine if they would result in unavoidable adverse impacts.

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

5.1.1 Air Quality

After the implementation of construction mitigation measures, there will be no further adverse impacts to air quality. Operation of the preferred Alternative D will result in a decrease of CO concentrations along present U.S. 93, as compared to the No Build Alternative, which is a beneficial impact.

5.1.2 Noise

Construction of the preferred Alternative D will result in a short-term increase in noise that, due to a lack of receptors, will not require mitigation. An increase in noise levels will also occur during the operation of Alternative D. In accordance with FHWA's guidelines for noise increases in unpopulated areas, operation of Alternative D does not require mitigation.

5.1.3 Biology/Threatened Species

Construction and operation of the preferred Alternative D would result in disturbance of 679 acres of habitat and impacts to associated vegetation and wildlife. Alternative D would result in the most adverse impact to protected and sensitive species of the build alternatives. South of Eldorado Ridge (Figure 4-3) it traverses primarily low-density desert tortoise habitat. North of the divide between the Eldorado Basin and the Colorado River drainage it crosses bighorn sheep habitat, particularly from Eldorado Ridge into Goldstrike Canyon.

As described in Chapters 4 and 6, any of the build alternatives would result in enhancing barriers to bighorn sheep population exchange between the River Mountains and the Eldorado Mountains herds. In addition, Alternative D would fragment the high-use bighorn habitat in the vicinity of Eldorado Ridge (Figure 3-4B). In addition to the mitigation measures identified in Section 4.4.3, and those measures taken to address potential cumulative impacts to bighorn and other wildlife discussed in Chapter 6, a Biological Assessment of the implementation of Alternative D will be developed in consultation with the USFWS and NDOW. The USFWS will issue a Biological Opinion specifying these and potential additional mitigation measures to offset the impacts to desert tortoise and other protected or sensitive species. Formal consultations with USFWS to initiate this process will take place once detailed design of the roadway is completed.

5.1.4 Water Quality

Implementation of the preferred Alternative D will result in short- and long-term impacts to water quality. Degradation of water quality in desert washes from stormwater runoff and erosion will contribute to local impacts and also impacts to the Colorado River and Lake Mead. However, as described in Chapter 4, implementation of the measures outlined in the SWPPP, in accordance with the NPDES Construction General Permit, coupled with the application of BMPs, is expected to reduce impacts to water quality to acceptable levels.

5.1.5 Wetlands/Waters of the U.S.

No impacts to USACE jurisdictional wetlands would occur from implementation of the preferred Alternative D. Impacts to aquatic ecosystems downstream in either Lake Mead or the Colorado River would be as a result of floodwaters reaching those bodies, and are not expected except during extreme flood events. The preferred Alternative D will permanently impact 3.12 acres of jurisdictional waters of the U.S. consisting of ephemeral desert wash. There continue to be discussions between the FHWA, NDOT, EPA, and the ACOE on whether this impact is adverse because the “seriousness of the potential for adverse impacts on the aquatic ecosystems” (40CFR230.10) is open to question given the arid climate, lack of actual water in these drainages at most times, and distance to Lake Mead or the Colorado River. Mitigation measures, such as installing temporary barriers to restrict debris from entering adjacent washes, restricting construction activities during rainfall, the application of design criteria to minimize erosional effects, and implementing BMPs established by NDOT, will be employed to minimize the effects of fill material on these waters.

5.1.6 Floodplains

Construction impacts to floodplains resulting from the preferred Alternative D impact 6.3 acres. Operational impacts to floodplains resulting from Alternative D, impact 4.1 acres. As discussed in Chapter 4, construction impacts will be mitigated through the application of appropriate design criteria and the use of BMPs. The preferred alternative will be engineered to use retaining walls to minimize encroachment, relocate drainages in the designated floodplain, and redraw the resulting flood zone under FEMA approval.

5.1.7 Cultural Resources

Implementation of the PA (Appendix E) prior to the construction of the preferred Alternative D will include an assessment of effects, and then the implementation of mitigation measures, after further development of the project footprint and prior to construction. The present evaluations indicate that Alternative D may impact seven historic transmission towers that are components of three NRHP-eligible transmission lines, and a portion of the BCBRR.

Impacts may occur to three NRHP archaeological sites: Squatters’ Camp (26CK1169/3024/5413), a prehistoric lithic reduction site (26CK6270), and a historic mining camp (26CK6277). As noted in Section 4.8, mitigation measures for the Squatters’ Camp are specified in an MOA between Reclamation, BLM, NDOT, FHWA, and SHPO. Also as noted in Section 4.8, mitigation measures for the other archaeological sites and the historic structures will be developed subsequent to an assessment of effects, as stipulated in the PA for implementation of Alternative D (Appendix E). As discussed in Chapters 4 and 7,

these measures will include photographic recording, controlled collection and artifact analysis, curation, and exhaustive archive research. Native American consultation will also be ongoing through the development of mitigation and data recovery.

5.1.8 Land Use/Section 4(f)

Because Alternative D passes primarily through undeveloped lands, impacts to current and planned land uses are less than that of the other build alternatives. Permanent impacts on current and future land uses are described Chapter 4, and they are not expected to result in unavoidable adverse impacts.

The preferred Alternative D would use more Section 4(f) lands associated with the LMNRA than the other build alternatives. Approximately 59 acres of LMNRA land will need to be used for implementation of the preferred alternative. Measures to minimize harm to these lands are described in Chapters 4 and 7, and will be implemented in consultation with the appropriate management agencies.

5.1.9 Visual Resources

Altered views would result from the construction and operation of the preferred Alternative D, and would include those in a portion of the LMNRA where there is currently a major roadway, and multiple transmission lines and their access roads. In addition, altered views from the Buchanan Boulevard/George Avenue and San Filipe Drive areas would result from the construction and operation of Alternative D. However, current views would not change substantially.

5.1.10 Economic Conditions

Operation of the preferred Alternative D is likely to result in a noticeable, short-term negative economic impact to the certain businesses in Boulder City that rely on doing business with through-travelers. In the long-term, it is uncertain if Boulder City would experience more or less economic growth than it would under the other alternatives, but an unavoidable adverse long-term impact is unlikely.

5.1.11 Social Context/Environmental Justice

As described in Chapter 4, adverse social impacts associated with the preferred Alternative D would be minimal. Long-term impacts are likely to be beneficial and result from the diversion of through-traffic away from the developed portion of Boulder City. No unavoidable adverse impacts on population, employment, income, social conditions, and minority or low-income populations are identified.

5.1.12 Hazardous Waste

No unavoidable adverse impacts would occur from the implementation of the preferred Alternative D.

5.1.13 Energy Use

No unavoidable adverse impacts would occur from the implementation of the preferred Alternative D as they will result in a beneficial impact in terms of energy usage savings.

5.2 Local Short-Term Uses Versus Long-Term Productivity

This section discusses short-term impacts, resource use, and maintenance and enhancement of long-term productivity of the proposed project. Construction and operation of the preferred Alternative D would result in short- and long-term impacts and benefits, as discussed below.

5.2.1 Short-Term Uses of Man's Environment

Short-term project costs include the commitment of considerable financial and material resources for the construction of the preferred alternative. Short-term uses of the human environment are less for Alternative D than for the other build alternatives. These impacts include construction effects on local air quality; on noise levels; effects on biological resources, such as disturbance of wildlife habitat and special-status species; water quality; increased erosion; potential transportation and circulation impacts; energy usage; and effects on Section 4(f) resources, cultural resources, and visual resources. Many of these impacts are mitigated.

Construction impacts associated with the preferred Alternative D are described in further detail in Chapter 4. A benefit during the construction phase would be the creation of construction-related employment.

5.2.2 Long-Term Effects of the Proposed Project

Dedication of land for the proposed project would preclude opportunities for alternate land uses. Long-term effects of the proposed project include an increase in ambient noise levels; loss of vegetation and wildlife habitat, including fragmentation of wildlife habitat; impacts to localized hydrology, cultural resources, and visual resources; and loss of recreational lands. About 59 acres of land within the LMNRA would be required, but Alternative D construction would occur in a part of the Recreation Area that already supports transportation and utility infrastructure including powerlines and maintenance roads.

Long-term benefits would include a reduction in traffic along U.S. 93 through Boulder City, thus improving safety for residents and other motorists; a reduction in noise, air emissions, and traffic within Boulder City proper, enhancing the quality of life there; an increase in travel speed for through traffic; a reduction in energy usage; and improvement of air quality from reduced CO emissions. Of all alternatives, including the no-build alternative, only construction of Alternative D would be consistent with and promote the objectives of the Boulder City Master Plan.

Current traffic demands on U.S. 93 have exceeded available capacity. If the No Build Alternative is implemented, most key segments and intersections will reach an LOS F within the next 10 years. Implementation of any of the build alternatives would improve LOS.

5.2.3 Conclusion

The proposed project, implementation of the preferred alternative, meets long-term transportation needs identified in Statewide Transportation Improvement Plan and the

RTC's Regional Transportation Plan. The project would provide long-term improvements that would reduce traffic congestion and crashes, it would enhance regional mobility as well as local circulation within Boulder City. It is anticipated that there would be an improvement in the quality of life in the developed portion of the City of Boulder City as a consequence of these effects. The local short-term construction impacts, after the implementation of mitigation measures, would be acceptable in view of long-term benefits of the project. These long-term benefits would also outweigh the long-term impacts of operating the facility.

5.3 Irreversible and Irrecoverable Commitment of Resources

Implementation of Alternative D, the preferred alternative, would require a commitment of natural, physical, human, and fiscal resources. The irreversible and irretrievable commitment of these resources is discussed in this section, with a focus on the following issues:

- The proposed project's use of nonrenewable resources during construction and operation, including fossil fuels, highway construction materials, electricity, water, and labor.
- The changes that are expected to occur as a result of the proposed project include the commitment of land, physical changes in the environment and a reduction of wildlife habitat, effects on human populations, and fiscal changes.

5.3.1 Use of Nonrenewable Resources

As discussed in Section 4.16, construction of the preferred Alternative D would require the use of fossil fuels for construction vehicles, construction equipment, and construction personnel vehicles. Electrical energy would also be used onsite to power maintenance trailers and other equipment. During operation, vehicles traveling along the constructed alternative would use fossil fuels.

Fossil fuels and electrical energy would be expended to manufacture the materials and products associated with roadway construction. In addition to those materials, other materials such as concrete, sand, aggregate, and steel would be used. These resources are not retrievable; however, the proposed project would not have an adverse effect on their continued availability. Operation of the preferred Alternative D would result in greater fuel efficiency of vehicles traveling along the alternative versus those traveling at slower speeds along existing U.S. 93.

5.3.2 Expected Changes as a Result of the Proposed Project

Land has been committed along existing U.S. 93 for use as a transportation corridor. Implementation of the preferred Alternative D would require the commitment of additional land, which would result in the loss of vegetation and wildlife habitat, public recreation areas, and it would affect special-status species as well as the movement of wildlife.

Land used for the proposed project is considered an irreversible commitment during the time it is used for a transportation facility. Should a greater need arise for use of the land, or if the highway facility is no longer needed, the land could be converted to other use(s) or left

| under the present use. However, once the proposed project is constructed, such a conversion would not likely happen or be necessary.

Alteration of the landscape by the proposed project would also be considered an irreversible change. If the project area were converted in the future, it would not be likely that the landscape would return to its original pre-project condition.

| Labor would be needed to build the project and to fabricate the construction materials. Long-term maintenance of the project would also generate jobs.

| Construction of the preferred alternative would require a considerable expenditure of state and federal funds, which are not considered retrievable. Long-term maintenance costs would also be considered irretrievable.

5.3.3 Conclusion

| The proposed project and construction of the preferred alternative would be beneficial to tourists, interstate travel, residents of Boulder City, and the trucking industry by reducing traffic congestion, improving safety, enhancing regional mobility and local circulation, and improving the quality of life in the City of Boulder City. Traffic speeds are expected to increase, resulting in timesavings and a reduction in transit costs. These long-term benefits are anticipated to outweigh the commitment of the above-listed natural and fiscal resources and there are no non-mitigatable adverse impacts with the preferred Alternative D.