# Chapter 4. Environmental Consequences

## 4.1 Introduction

This chapter documents the potential environmental consequences associated with the No-Action Alternative and the Proposed Action Alternative. Chapter 2, *Alternatives,* describes these alternatives in detail and presents a graphic depiction of the Proposed Action Alternative, including the runway relocation (Airport Development Alternative 3) and proposed land transfer (Land Transfer Alternative 4). If the BLM and FAA determine the impacts not to be significant, both agencies will document their rationale for this determination in a Finding of No Significant Impact (FONSI). It is also important to note that each of the environmental resource categories described in this chapter were introduced in Chapter 3 and are required by either FAA guidance or BLM guidance for complying with NEPA.

Briefly, the alternatives considered in this chapter are:

No Action: Airport facilities would remain as they are today, subject to normal maintenance. Activity levels would increase as forecast.

Proposed Action Alternative: This alternative transfers approximately 188 acres of land from the BLM to the Airport Sponsor to meet the needs of correcting existing non-standard FAA design criteria, approach protection, and incompatible land use protection. This alternative also includes the relocation of Runway 11/29 and the relocation of a portion of 27 ¼ Road.

The possible environmental impacts from these specific alternatives are described in the following sections per *FAA Order 1050.1E, Environmental Impacts: Policies and Procedures*, and in accordance *with FAA Order 5050.4B, National Environmental Policy Act Implementing Instructions for Airport Actions.* In this chapter, the term Study Area (defined in Chapter 3) is used for each resource category, and this term can sometimes mean slightly different areas for different resource categories (as explained in Chapter 3).

## 4.2 Air Quality

Grand Junction Regional Airport is located in an area that is attainment for all criteria pollutants specified through the National Ambient Air Quality Standard (NAAQS). Based on forecast activity levels at the Airport through 2030, operations are expected to be below 70,000 per year. Also, based on forecast activity levels, enplaned passengers are not expected to exceed 400,000 per year. FAA guidance states "If the level of annual enplanements exceeds 1,300,000 (or 2.6 MAP), the level of

general aviation and air taxi activity exceeds 180,000 operations per year or a combination thereof, a NAAQS assessment should be considered." Therefore, an air quality analysis is not required.

No Action: Airport facilities would remain as they are today, with only forecast changes in operations and maintenance projects. Therefore, no impacts to air quality are expected.

Proposed Action: Because the level of activity that currently occurs is expected to occur in the reasonably foreseeable time horizon, and the Airport is located in an attainment area for all pollutants and is not subject to indirect source review requirements, no air quality analysis was performed in accordance with FAA guidance. In addition, the proposed project is not expected to induce additional passengers or aircraft operations. Therefore, the only change in operational condition would be temporary construction related emissions, which based on similar projects at other airports, are expected to be minimal.

## 4.3 Climate

Although there are no Federal standards for aviation-related greenhouse gas (GHG) emissions, it is well-established that greenhouse gas emissions can affect climate. The Council on Environmental Quality (CEQ) has indicated that climate should be considered in NEPA analysis. As noted by CEQ, however, "it is not currently useful for the NEPA analysis to attempt to link specific climatological changes, or the environmental impacts thereof, to the particular project or emissions; as such direct linkage is difficult to isolate and to understand."

No Action: Airport facilities would remain as they are today, with only forecast changes in operation and maintenance projects. Therefore, no impacts from climate change are expected.

Proposed Action: Based on FAA data, operations activity at the Grand Junction Regional Airport, relative to aviation throughout the United States, represents less than 0.07% of US aviation activity. Therefore, assuming that greenhouse gases occur in proportions to the level of activity, greenhouse gas emissions associated with existing and future aviation activity at the Grand Junction Regional Airport would be expected to represent less than 0.03% of US based greenhouse gases. Because of the related uncertainties involving the assessment of such emissions regionally and globally, the incremental contribution of this proposed action cannot be adequately assessed given the current state of the science and assessment methodology.[1] Therefore, we would not expect the emissions of greenhouse gases from this project to be substantial.

1 NEPA Regulations, Council on Environmental Quality, 40 CFR 1502.22, *Incomplete or unavailable information.*

## 4.4 Compatible Land Use

The compatibility of existing and planned land uses in the vicinity of an airport is usually associated with the extent of the airport's noise impacts. Noise impacts are covered in detail in Section 4.15. Please refer to that section for more information.

No Action: The No Action Alternative would have no adverse impacts on land uses surrounding the Airport, because it would not involve any changes in operations that would result in a change in noise contours nor would it change existing land uses.

Proposed Action: This alternative would not result in the disruption of any communities or the relocation of residences or business, and no residences would be located within the 65 DNL noise contour. This alternative would result in the transfer of approximately 188 acres of BLM managed land. All 188 acres are currently open for recreational purposes. Of the 188 acres of land transferred from BLM to the Airport, the 108 acres north of the proposed runway would be fenced in and would no longer be able to be used for recreation purposes. The 80 acres off the end of the proposed runway would continue to be open for recreational purposes, which are considered a compatible land use. Additionally, no alternatives that meet the Purpose and Need would avoid this recreational resource entirely. However, recreational land use is generally considered compatible with normal airport operations.

This alternative is consistent with existing zoning and planned future land use as this area has long been considered as important for future airport use. Following the land transfer, the City of Grand Junction would need to revise its zoning map to reflect the new airport boundary. The Proposed Action would not result in aircraft operations being located closer to any known wildlife attractants. In fact, the Proposed Action would result in a fully fenced airport boundary that reduces the potential for aircraft and wildlife incidents.

Additional compatible land use considerations include a right-of-way (ROW) for an existing transmission line that crosses Parcel A, and the mineral rights for an oil and gas lease on part of Parcel B.

One ROW is authorized within the Study Area. Grand Valley Rural Power is the holder of the ROW issued for a perpetual term for an existing power transmission line. In accordance with BLM policy, if the decision is made to complete the proposed land transfer, the ROW holder may choose to have the land patent issued subject to the ROW, thereby maintaining the ROW under its current terms and conditions, with the Airport taking over all matters relating to the management of the ROW; or, the holder may choose to either negotiate a new agreement with the Airport or make a request to BLM to convert the ROW to an easement. Therefore, the proposed action is not expected to negatively impact the ROW.

The area proposed for transfer from the BLM to the Airport, as well as the proposed BLM ROW area, is currently open to oil and gas leasing. One existing well head was identified within the initial 720-acre parcel, however, the wellhead is outside of the reduced size land transfer area (188-acre parcel) under the Proposed Action. There are also two oil and gas leases on the property. Under the Proposed Action, the 188 acres would be transferred, but the mineral rights would be retained by the BLM and managed by the BLM as a split estate, so there would be no impacts expected to occur on the existing leases.[2] Access to these minerals would be in accordance with applicable Federal laws, regulations, lease stipulations and permit requirements, as well as any surface use agreements between the Airport and the lessee/operator.

The potential for natural gas commercial operations is considered low, no mining claims have been staked on the property at the time of the site investigation, and no solid mineral leases are held in the Study Area. The full mineral report is included in the Mineral Report (Appendix 9).

## 4.5 Construction Impacts

Construction activities are regulated by Local, State, Tribal, and/or Federal requirements. Typical construction impacts include air, water, and noise pollution, along with the potential change in traffic patterns during construction. Contractors are required to comply with all regulations, including FAA guidance contained in FAA AC 150/5370-10F, *Standards for Specifying Construction of Airports*, AC 150/5320-15 (including Change #1) *Management of Airport Industrial Waste*, AC 150/5320-5B, *Airport Drainage,* and Item P-156, *Temporary Air and Water Pollution, Soil Erosion and Siltation Control.*

No Action: The No Action reflects the current airport facilities with anticipated minor maintenance projects in the future. The continued operation of the Airport and the rehabilitation of the runways and taxiways are not expected to have substantial construction related impacts. There are no permanent construction impacts anticipated as a result of the No Action Alternative.

Proposed Action: Final plans and provisions for the construction of the proposed project have not been developed yet. However, these plans would include BMPs to minimize impacts due to erosion, air and water pollution, sanitary waste, waste disposal, and traffic alterations caused by the construction work. The construction projects might temporarily increase noise and dust related to construction. The construction contractor would implement control measures for the fugitive dust and dust suppression from construction related activities. These measures could include covering or wetting the dry material, cleaning vehicles before exiting the construction site, using bump strips or grates to shake dust from the vehicles, and paving the construction site access roads.

2 Split estate is a situation in which a property owner is not the same party who owns the rights to extract minerals from underneath the property.

Construction impacts could also include the temporary increase of solid waste and the potential for an increase in point source pollutant emissions such as: particulate matter ($PM_{10}$), carbon monoxide, hydrocarbons, nitrogen oxides, and carbon dioxide. However, point source pollutant emissions can be minimized through implementation of BMPs. Construction waste would be minimized through best management practices. The contractor would be required to dispose of all construction waste in accordance with all applicable State and Federal guidelines.

The construction contractor would also have to apply for a Stormwater Construction General Permit, monitored by the USEPA, requiring that the crew follow the BMPs to prevent stormwater pollution and erosion during construction. These preventative measures might include sedimentation basins, silt traps, catch basins, and drip pans. The Proposed Action would temporarily increase construction-related traffic in the area surrounding the Airport and would temporarily disrupt traffic during the relocation of 27 ¼ Road. This construction could also temporarily increase traffic congestion, and the people who use these roads may be temporarily delayed due to construction traffic. Because these roads currently support very little traffic, this potential for temporary delay would not produce any substantial permanent traffic impacts on other routes or majorly alter the travel time for the public.

The construction impacts such as increases in emissions, traffic, or noise related to the Proposed Action are expected to be temporary. Traffic patterns might be temporarily altered due to the construction and relocation of 27 ¼ Road. However, the construction is not expected to alter any major routes for long periods of time and should not impact traffic patterns. Any additional temporary construction impacts would be minimized by the construction contractor through the use of BMPs.

## 4.6 Department of Transportation Act: Section 4(f)

A DOT Section 4(f) Evaluation was prepared due to the anticipated unavoidable project-related effects and is included in Appendix 8.

No Action: The No Action Alternative includes only maintenance projects that would not affect DOT Section 4(f) lands.

Proposed Action: All of the area proposed for transfer from the BLM to the Airport is currently used for recreational activities, such as the use of ATVs, off-road motorcycles, and other activities and thus meets the criteria for DOT Section 4(f) lands. In addition, the historic railroad grade (see Section 4.11 for more information), identified during the site survey for historical and archaeological resources, is eligible for listing on the National Register of Historic Places (NRHP). Therefore, it is also considered a Section 4(f) resource. The 4(f) resources are illustrated in Figure 4-1.

Section 4(f) mandates that the Secretary of Transportation will not approve any project that requires the "use" of a 4(f) resource unless "there is no feasible and prudent alternative to the use of such land and such program, and the project includes all possible planning to minimize harm resulting from such use." As described in the Section 4(f) Evaluation (Appendix 8), there are no alternatives that meet the Purpose and Need that are able to avoid Section 4(f) resources. The Airport Sponsor and FAA have worked with the BLM to reduce the acquisition area from the original proposed 720-acres to 188-acres, which is less than one percent of the entire 11,400 acre Grand Valley OHV area, to minimize the impact on the Grand Valley OHV area. The 4(f) resources are illustrated in Figure 4-1.

No adverse indirect effects that would rise to the level of being a constructive use would occur from the Proposed Action Alternative as described in the Section 4(f) Evaluation (Appendix 8). Impacts would be associated with the fence and perimeter road construction on a portion of the historic railway, and the transfer of BLM managed land that is presently used for OHV recreational uses. Because the project would result in direct effects, mitigation options are being explored. Level II photo documentation was proposed to mitigate the effects on the historic resource. The State Historic Preservation Office (SHPO) concurred with this mitigation in a Memorandum of Agreement (MOA) with the BLM and the Airport, with the FAA as a concurring party (Appendix 12). The Airport Sponsor and the BLM have coordinated with the Western Slope ATV Association to help determine potential mitigation. The Airport Sponsor proposes to construct a recreational vehicle parking/staging area, proposed to mitigate effects on the recreational resource by enhancing the recreational experience by providing a formal parking/staging area. The location of the parking/staging area is likely to be adjacent to 27 ¼ Road north of airport property.

## 4.7 Farmlands

No Action: This alternative would not require any additional disruption of undisturbed land or soil and would therefore not impact any potential prime or unique farmland.

Proposed Action: This alternative would convey approximately 188 acres of land managed by BLM to the Airport Sponsor. According to the *National Cooperative Soil Survey* from the NRCS, the soils on and in the vicinity of existing airport property vary widely. The two most abundant soils located within airport property are Killpack-Badlands-Persayo complex, 3-25% slopes, saline; and Uffens fine sandy loam, 1-6% slopes. Neither of these soil types are designated prime or unique farmland.

However, there are small segments of designated prime farmland, if irrigated soils in pockets of land surrounded by non-prime farmland soils on the south side of the runway. However, prime and unique farmland, as defined by the FPPA, does not include land already committed to urban

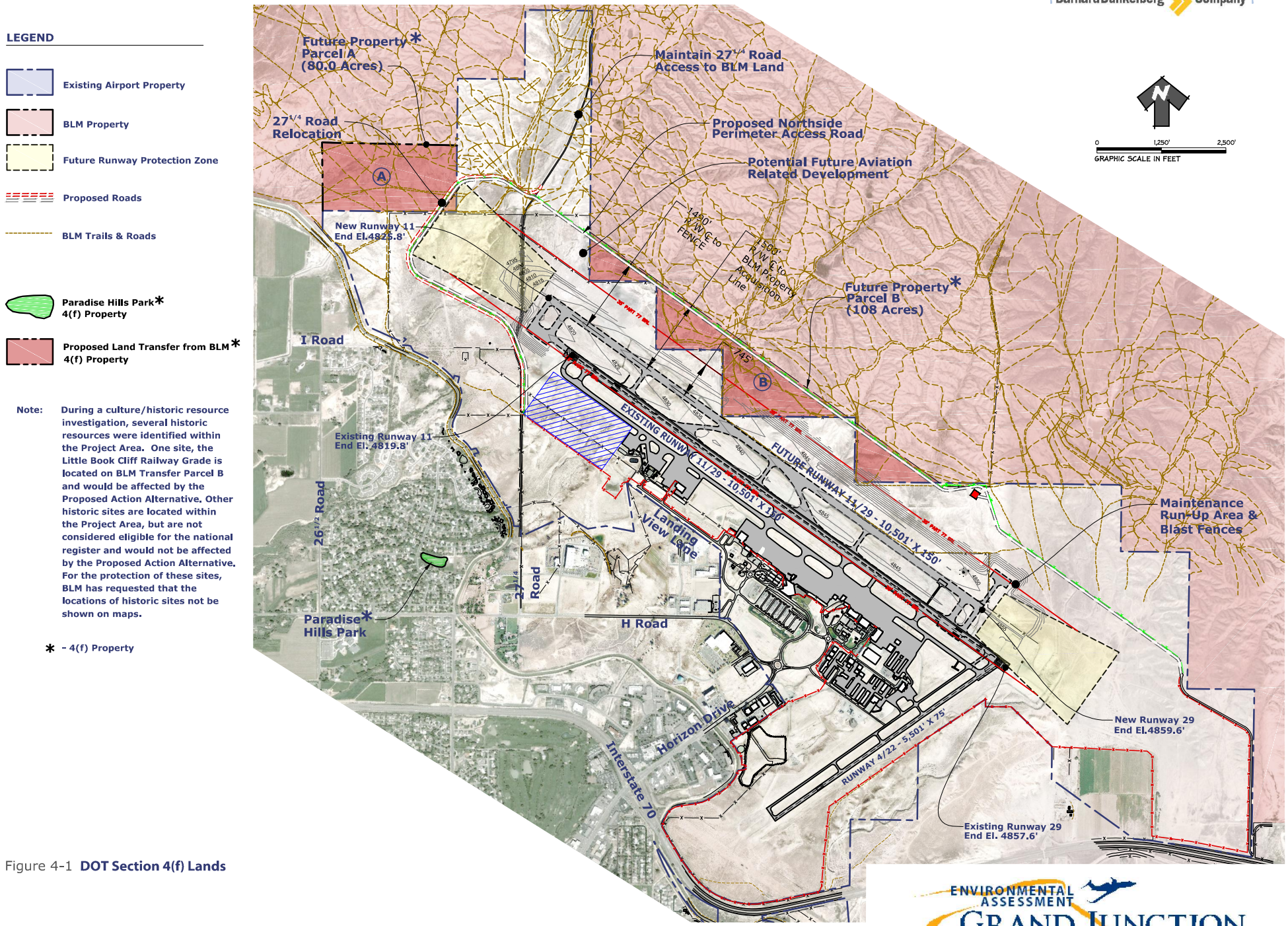


Figure 4-1 **DOT Section 4(f) Lands**

development or water storage. The area contained within airport property is located within the Urban Growth Boundary, and therefore is not designated as prime farmland. The area north of the runway is characterized primarily by Killpack-Badlands-Persayo complex, 3-25% slopes, saline, and Uffens fine sandy loam, 1-6% slopes. Neither of these soil types are designated prime or unique farmland (Appendix 4). There are no prime or unique farmlands within the Study Area. Therefore, the Proposed Action Alternative would have no impact on prime or unique farmland/important soils.

## 4.8 Fish, Wildlife, and Plants

The following subsections describe the potential impacts to fish, wildlife, and plants within the direct Study Area as well as within the ROW grant area for the detention pond construction (Figures 4-2 and 4-3).

### 4.8.1 Fish

There are no perennial streams within the Study Area. As a result there are no direct impacts to common fish species from the No Action or the Proposed Action Alternatives. There are indirect impacts from the Proposed Action Alternative to the four endangered fish species in the Colorado River. Discussion of these endangered species is in the section entitled *USFWS Threatened and Endangered Fish and Wildlife*.

### 4.8.2 Common Wildlife

Terrestrial vertebrate species other than endangered, threatened, and candidate species include small rodents, lizards, snakes, birds, and larger mammals including red fox, coyotes, and possibly deer. Common species to the adobe badlands are listed in the previous chapter (Chapter 3) as are BLM sensitive species. Availability of habitat for these species is limited on airport property and the proposed BLM transfer property as a result of OHV use, grazing, and denuding of the vegetation by prairie dogs. Without tree and shrub cover and year-round water sources, many species of wildlife cannot readily survive or reproduce. Those adapted to desert conditions could thrive, but would be limited by the degraded habitat within the Study Area.

The lack of habitat with vegetative cover within the Study Area are limiting to species that might be common to adobe badlands.

No action: Species common to adobe badlands would not be impacted.

Proposed Action:
*BLM Managed Land Impacts:* The proposed BLM transfer land is degraded from OHV use, grazing, and the presence of humans in the area. That wildlife are present in the area is a testament to the ability to tolerate such disturbances. Transfer of the property to the Airport with attendant fencing is unlikely to impact common species mentioned in Chapter 3. Wildlife would alter their habits to accommodate the transfer, but populations are unlikely to decrease meaningfully.

*Airport Property Impacts:* The airport property is currently impacted by human activity, which has resulted in a denuded and/or developed landscape. The Proposed Action Alternative is unlikely to impact common species as these are adapted to disturbance. Wildlife would alter their habits to accommodate airport expansion, but populations are unlikely to decrease substantially.

## 4.8.3 BLM Sensitive Wildlife Species

Two BLM sensitive species were located in the Study Area in 2010 (Figure 4-2). Those species are white-tailed prairie dog and the Botta's pocket gopher. Active white-tailed prairie dog colonies were observed and only diggings from the gopher were located. No burrowing mounds were detected and thus no density estimations are available.

### 4.8.3.1 White-tailed prairie dog

This species is prevalent within the Study Area (Figure 4-2).

No Action: There would be no impact to the white-tailed prairie dog from the No Action Alternative.

Proposed Action:
*BLM Managed Land Impacts:* Approximately 13.1 acres of white tailed prairie dog habitat is identified within the proposed BLM transfer property. The Proposed Action Alternative would displace white-tailed prairie dog habitat on 3.3 acres of the BLM transfer property as a result of constructed roads at the northeastern edge of the Study Area. The remaining 9.8 acres of white-tailed prairie dog habitat on the BLM transfer property would not be impacted because this acreage would not be graded (Table 4-1). While this action may cause the migration of some of the prairie dogs, it is unlikely to cause a reduction in the overall population. With the exception of road crossings through the proposed BLM transfer property, the prairie dog colonies would likely remain undisturbed since the Airport does not plan to grade the remaining prairie dog habitat on the proposed BLM transfer property. There would be a buried skirt under a constructed perimeter fence, which could cut the colony off and possibly result in the elimination of those inside the fence, but would likely not meaningfully impact the population. The intent of the buried skirt is to prevent burrowing animals from coming under the fence and on to airport property (Table 4-1).

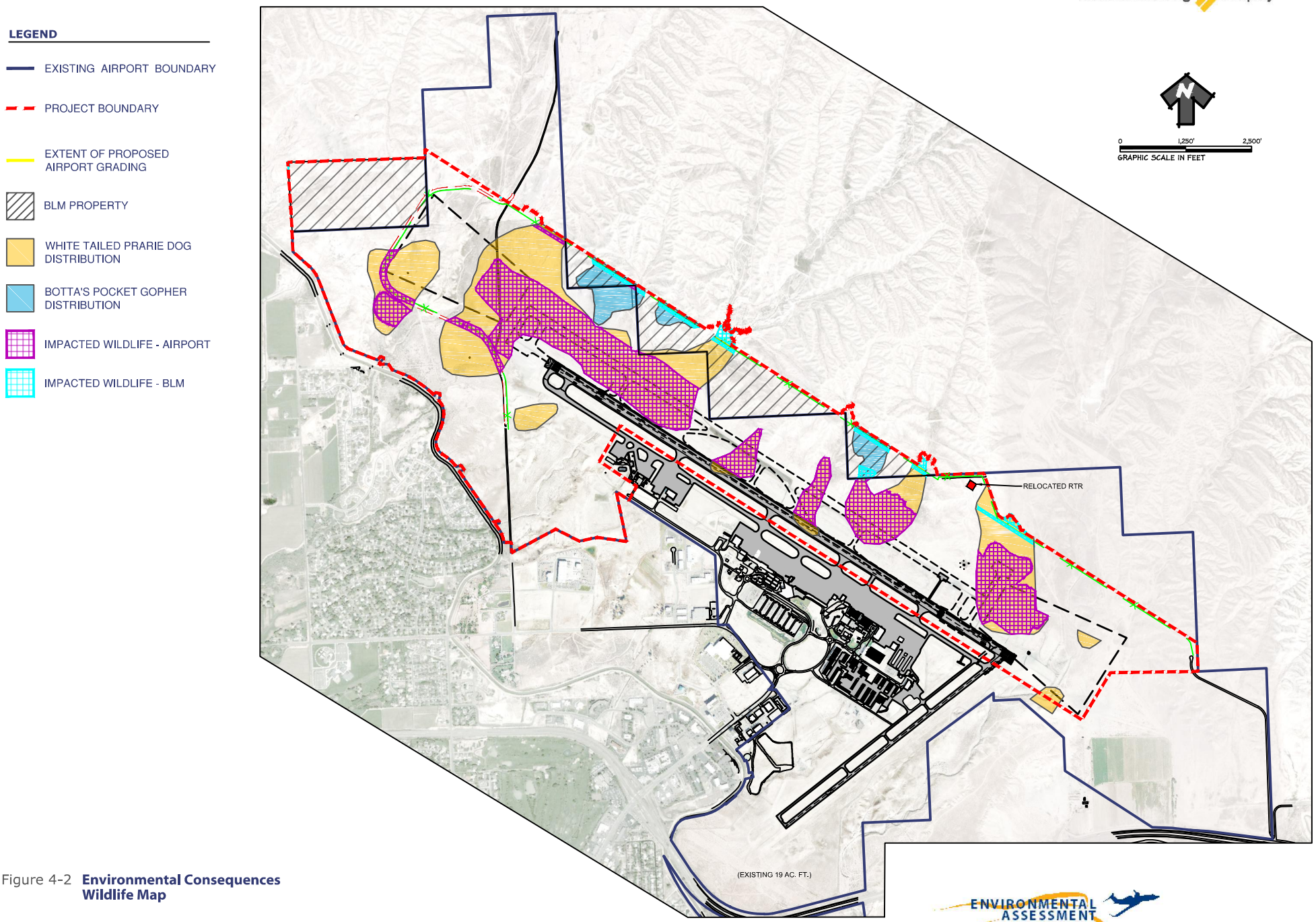


Figure 4-2 **Environmental Consequences Wildlife Map**

*Airport Property Impacts:* Approximately 214 acres of mapped white-tailed prairie dog habitat within the airport property would be graded resulting in the potential migration and/or death of prairie dogs. An additional 99 acres of white-tailed prairie dog habitat on airport property would not be disturbed by grading or other means. While OHV and other recreation use on BLM land apparently does not prevent the establishment of the colonies, grading of the airport property would likely impact white-tailed prairie dogs; however if grading occurs outside of the breeding season, the potential of impact to the prairie dog population would decrease; instead the prairie dogs would likely move to other locations on BLM managed land or other suitable habitat. Also, in accordance with the Airport's Wildlife Hazard Management Plan, efforts are made to discourage prairie dog habitat to avoid prairie dog predators on airport property.

#### 4.8.3.2 Botta's Pocket Gopher

Evidence of diggings by this species was observed within the Study Area, but no mounds were encountered. Habitat estimates are made based on the observations of the diggings (Figure 4-2).

No Action: There would be no impact to the Botta's pocket gopher from the No Action Alternative because only maintenance projects would occur.

Proposed Action:

*BLM Managed Land Impacts:* Approximately 26.0 acres of Botta's pocket gopher habitat are located on BLM transfer property within the Study Area. The Proposed Action Alternative is unlikely to impact the majority of the gopher's mapped habitat, because the BLM property within the Study Area would not be graded or disturbed except for 4.0 acres associated with perimeter road construction and grading (Figure 4-2), mostly outside of the Botta's habitat area.

*Airport Property Impacts:* Approximately 10.7 acres of Botta's pocket gopher habitat is mapped on airport property within the Study Area, none of which would be graded. Impacts to the gopher's habitat are unlikely to occur on the airport property.

#### 4.8.3.3 Other BLM Sensitive Species

No kit foxes, burrowing owls, spadefoot toads, American kestrels, barn owls, ferruginous hawks, red-tailed hawks, longnose leopard lizards, sage grouse, or midget faded rattlesnakes were located on BLM transfer property or on airport property within the Study Area during the 2010 Wildlife Surveys. Within the proposed BLM transfer property and the airport property, no direct impacts to these species are expected as a result of any of the alternatives. Presence of the kit fox is unlikely due to the level of human activity in the area. Burrowing owls and spadefoot toads were observed by the BLM in the survey area, but not within the

proposed BLM transfer property or airport property. Their presence near the Study Area indicates that they can tolerate being in proximity to high levels of noise and disturbance. Impacts to these species are unlikely from the transfer of land from BLM to the Airport.

Table 4-1
**IMPACTS TO WILDLIFE HABITAT**
*Grand Junction Regional Airport Environmental Assessment*

| Species | Habitat Present BLM (acres) | Impact BLM (acres) | Habitat (acres) Airport Property | Airport Impact (acres) | Total Acres of Impact |
|---|---|---|---|---|---|
| **White tailed prairie dog** (Cynomys leucurus) | 13.1 | 9.8 | 313 | 214 | 223.8 |
| **Botta's pocket gopher** (Thomomys bottae) | 26.0 | 22.0 | 10.7 | 0.0 | 22 |

**Source**: *BioEnvirons*, 2012.

## 4.8.4 USFWS Threatened and Endangered Fish and Wildlife

For each subsection within this section, the impacts are separated into the BLM proposed land transfer and the airport property.

### 4.8.4.1 Endangered Fish

As presented in the Chapter 3, there are no perennially flowing creeks, streams, or rivers within the direct effects Study Area, and therefore, likely no habitat for fish species exists within the direct affects Study Area. Two intermittent streams, Leach Creek and Indian Creek, both of which rarely contain flow, occur on airport property within the Study Area. Eight ephemeral drainages occur within the Study Area. However, only a portion of four ephemeral drainages (E-2, E-3, E-4, E-5) and the embankment for three detention features occur within the BLM transfer property within the Study Area; the remainder of the detention features occurs on Airport property within the Study Area. Several water features flow through the Study Area, but only two, WF-1 and WF-3, flow through the BLM transfer property within the Study Area. All of the drainages connect to the City of Grand Junction stormwater system, and water from the city system is likely to flow to the Colorado River, which is approximately two miles (3.2 km) to the southwest of the Airport.

#### 4.8.4.1.1 Greenback Cutthroat Trout

The greenback cutthroat trout is a cold-water inhabitant and historically found at the headwaters of the Arkansas and South Platte River drainages east of the Continental Divide. The Study Area does not include habitat for this species and therefore no impacts would occur.

#### 4.8.4.1.2 Colorado Pikeminnow, Humpback Chub, Bonytail, and Razorback Sucker

Under the Proposed Action Alternative, all water that could flow within the ephemeral drainages would still be directed towards the Colorado River, and water temporally captured in detention features or water quality features would eventually flow to the Colorado River, except for very minor depletions in the form of evaporation from the detention features. Based on preliminary engineering and design of the detention features, in the event of a measurable storm, any water that would be detained in the proposed detention features would be released within approximately 40 hours of a storm event; the pond basins would be inundated for a very short duration with little evaporation taking place. The detention features were designed per the Grand Junction Stormwater Management Manual for 10-year (1.12 inch) and 100-year (2.01 inches) storm events. If water remains in the detention features for only 40 hours, evaporation is minimal – approximately 0.26 ac-ft/year based on a calculation using the Thornwaite method for estimating PET (potential evapotranspiration).[3]

Given that the proposed action would result in the depletion of 0.26 acre-feet of water from within the Colorado River basin, this project falls under BLM Colorado's Programmatic Biological Assessment (PBA) for water depleting activities (excluding fluid minerals development) on BLM managed lands in the Colorado River basin in Colorado (BLM 2008).

In response to BLM's PBA, the USFWS issued a Programmatic Biological Opinion (PBO)(ES/GJ-6-CO-08-F-0010) on February 25, 2009, which concurred with BLM's determination that water depletions are "Likely to Adversely Affect" the Colorado pikeminnow, humpback chub, bonytail, and razorback sucker. Likewise, the project is also likely to adversely affect designated critical habitats for these endangered fish along the Green, Yampa, White, Colorado, and Gunnison rivers. However, the USFWS also determined that BLM water depletions from the Colorado River Basin are not likely to jeopardize the continued existence of the Colorado pikeminnow, humpback chub, bonytail, or razorback sucker, and that BLM water depletions are not likely to destroy or adversely modify designated critical habitat.

No Action: There would be no effect to the four endangered fish species from the No Action Alternative because it does not include any activities that could directly/indirectly (through depletions of water to the Colorado River Basin) affect fish species.

[3] Dunne, T. & Leopold, L.B. (1978). Water in Environmental Planning. (pp. 136-138). W. H Freeman and Company.

Proposed Action:

*BLM Managed Land Impacts:* Under the Proposed Action Alternative, the ephemeral drainages' connection to the Colorado River via the City of Grand Junction stormwater system would be maintained by placing bottomless culverts under 2 of the 3 road crossings. Also, detention features would be placed on 5 of the 8 ephemeral drainages north of the runway, of which three are on BLM managed land proposed for transfer. Water quality features, which store water and later release it (within 40 hours) to ditches, which eventually flow to the Colorado River would be established southwest of the runway. All of these detention type features aid in improving water quality downstream by allowing sediment to be captured within the features.

A Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin was initiated in January 1988. The Recovery Program serves as the reasonable and prudent alternative to avoid jeopardy and aid in recovery efforts for these endangered fishes resulting from water depletions from the Colorado River Basin. The PBO addresses internal and external BLM projects including impoundments, diversions, water wells, pipelines, and spring developments. The USFWS determined projects that fit under the umbrella of the PBO would avoid the likelihood of jeopardy and/or adverse modification of critical habitat for depletion impacts to the Upper Colorado River Basin if they deplete relatively small amounts of water (less than 100 AF), and BLM makes a one-time contribution to the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program) in the amount equal to the average annual acre-feet depleted by each project. The PBO instructed BLM to make an annual payment to the National Fish and Wildlife Foundation (NFWF) to cover all BLM authorized actions that result in water depletions. The airport transfer and associate ponds would deplete 0.26 AF annually. The depletion fee for this project is $5.02 ($19.32 x 0.26 AF). This project has been entered into the Grand Junction Field Office water depletion log which will be submitted to the Colorado State Office at the end of the Fiscal Year. The CSO is responsible for paying depletion fees based on the annual statewide total.

In February of 2012, a Biological Assessment (Appendix 6) was submitted to the USFWS with a determination that the proposed action, "may affect, is likely to adversely affect the four Colorado River endangered fish, including the Colorado pikeminnow, humpback chub, bonytail, and razorback sucker. On March 22, 2013, USFWS concurred with this effect determination (Appendix 13) and stated that the water depletions are addressed by the USFWS 2009 PBO, and water depletions would be reported under the annual reporting provisions of the PBO.

*Airport Property Impacts:* As discussed previously, the PBO addresses the project-related water depletions impacts to the Colorado River.

#### 4.8.4.2 Endangered Wildlife

There is no habitat for the yellow-billed cuckoo and the Canada lynx, within the Study Area. The Canada lynx lives in high altitude, boreal, subalpine, or hardwood forest habitats. The yellow-billed cuckoo requires riparian habitat of which there is none within the Study Area. Due to the lack of habitat, no effects would be expected to occur to these species or their habitat.

No kit foxes, burrowing owls, or spadefoot toads were located on BLM transfer property or on airport property within the Study Area during the 2010 Wildlife Surveys. No impacts to these species are expected as a result of any of the alternatives.

### 4.8.5 Migratory Birds, and Bald and Golden Eagles

A raptor survey was completed in 2010 along with incidental observations of other migratory birds. A loggerhead shrike nest was found outside of the Study Area, but no other migratory bird nests or bald or golden eagle nests were found within the Study Area. Under the Migratory Bird Treaty Act (MBTA) and Executive Order (EO)13186 guidance emphasizes management of habitat for species of conservation concern by avoiding or minimizing negative impacts and restoring and enhancing habitat quality, and suggests use of a timing limitation to avoid the direct take of migratory bird population or nests.

The Study Area largely encompasses a variety of extremely degraded habitats and some saltbrush communities subject to grazing and intense OHV use. These habitats support some migratory birds during the breeding season (generally May through July). The BLM lends increased management attention to migratory birds listed by the USFWS as Birds of Conservation Concern (BOCC). These are bird populations that monitoring suggests are undergoing range-wide declining trends and are considered at risk for becoming candidates for listing under the ESA if not given due consideration in land use decisions. One species associated with the Southern Rockies/Colorado Plateau region[4] that was found near the Study Area is the loggerhead shrike.

No Action: No impacts would occur to migratory birds including the loggerhead shrike, or to bald or golden eagles from the No Action Alternative, because no projects would occur as a result of the No Action.

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4 USFWS. *Birds of Conservation Concern.* Retrieved 4/01/2012 from http://www.fws.gov/migratorybirds/NewReportsPublications/SpecialTopics/BCC2008/BCC2008.pdf

Proposed Action:

*BLM Managed Land Impacts:* As stated above, a shrike nest was found on BLM managed land outside of the current Study Area. No bald or golden eagle nests were found within or in the immediate vicinity of the Study Area. Because no Bald or Golden Eagles or other raptor nests were observed within the Study Area during the 2010 field survey, impacts to nesting raptors as a result of construction activities are not expected to be necessary, however, burrowing owls have been observed in the project area since the time of survey. The BLM considers raptor surveys to be valid for two years, and raptor nests could have established in the area between 2010 and the present time. Therefore, construction activities occurring between February 1 and August 15 would require an additional survey prior to construction, and if nesting raptors are identified, appropriate timing limitations would be applied. Should any raptor nests be discovered during construction, work would immediately cease, and the USFWS would be contacted to determine an appropriate course of action.

*Airport Property Impacts:* The Study Area largely encompasses a variety of extremely degraded habitats and some saltbush communities subject to grazing and intense OHV use. These habitats support some migratory birds during the breeding season (generally May through July). No evidence of breeding populations of migratory birds was found on the airport property during the 2010 survey. Also, no bald or golden eagle nests were found within or in the immediate vicinity of the Study Area. Because no Bald or Golden Eagles or incidental observations of migratory birds occurred within the Study Area during the 2010 filed investigation, seasonal time limits to construction activities are not necessary, and no impacts to migratory birds are expected to result on airport property. However, the BLM considers raptor surveys to be valid for two years, and raptor nests could have established in the area between 2010 and the present time. Therefore, construction activities occurring between February 1 and August 15 would require an additional survey prior to construction, and if nesting raptors are identified, appropriate timing limitations would be applied. Should any raptor nests be discovered during construction, work would immediately cease, and the USFWS would be contacted to determine an appropriate course of action.

### 4.8.6 Plants

Chapter 3 described four different habitats, or vegetative communities, that dominate the Study Area, impacts to which are described below. These include: 1) annual/bareground graded areas; 2) degraded saltbush areas; 3) saltbush/annuals area; and 4) greasewood/rabbitbrush community; the first three areas are highly disturbed as a result of grading around the Airport and through OHV recreational activities. The greasewood/rabbitbrush community is located to the west of the Study Area and not included within the BLM managed lands to be transferred.

#### 4.8.6.1 Threatened Plants

The USFWS identified two Federally listed threatened plants species – the Colorado hookless cactus and Debeque phacelia – that occur in Mesa County. However, the BLM identified that Sclerocactus was the species most likely to occur in the project area. A habitat assessment indicated that the Debeque phacelia did not have potential or suitable habitat in the Study Area.

*Colorado hookless cactus.* The cactus was located outside of the current Study Area on BLM managed land. In the 2010 survey, no individuals were found on the proposed BLM transfer property nor on the airport property within the Study Area, therefore no direct impacts from any of the alternatives are expected. A Biological Assessment (Appendix 6) was submitted to the USFWS to address potential indirect impacts on the cactus with a determination of "may affect but is not likely to adversely affect" the hookless cactus. On March 22, 2013, USFWS concurred with this determination (Appendix 14) because no Colorado hookless cacti were found within the BLM proposed transfer property during the surveys, and the Proposed Action Alternative would not concentrate livestock grazing or OHV use around the known cactus occurrences to any measurable level on the BLM managed land north of the proposed transfer area.

#### 4.8.6.2 Common Plants

*Annual/bareground graded areas.* The area of annuals/bareground is a highly disturbed area that supports little vegetation. Restoration to a saltbush habitat is highly unlikely. Development of this ground by further grading or covering with impervious materials would cause little impact to this annual/bareground area. Approximately 102.0 acres within the proposed BLM transfer property is comprised of the annual/bareground graded habitat. This acreage would not be disturbed by the Proposed Action Alternative, but 12.0 acres of BLM transfer property would be graded and used as perimeter road and relocation of 27 ¼ road (Figure 4-3). Since the habitat is already highly impacted, additional impacts are expected to be minimal (Appendix 5).

No Action: There would be no impact to the annual/bareground graded areas from the No Action Alternative.

Proposed Action:

*BLM Managed Land Impacts:* Minimal impacts to this area would occur on the proposed BLM transfer property or the ROW grant area. This vegetative community is already degraded; therefore the quality of the habitat is not expected to be diminished by the Proposed Action Alternative.

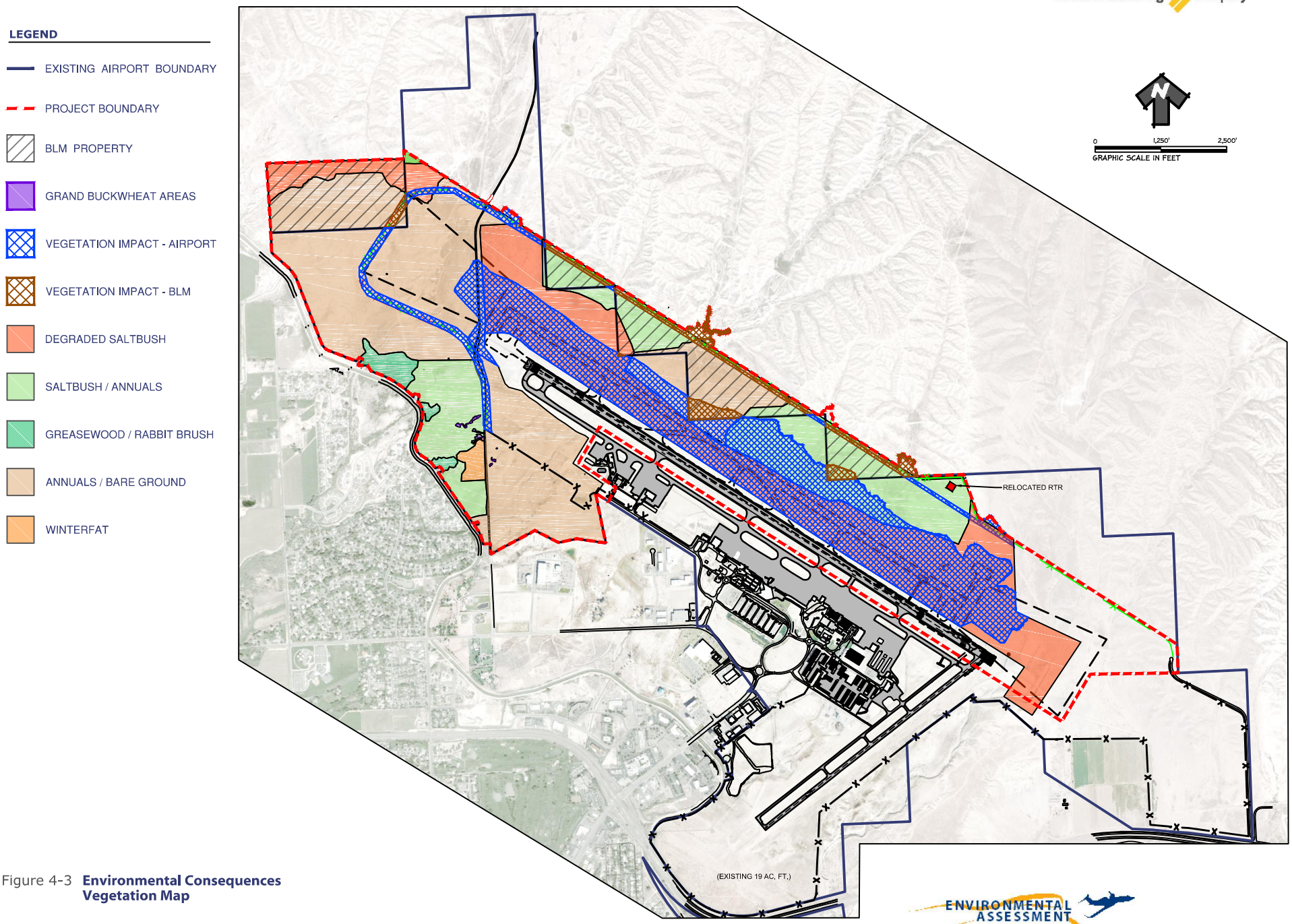


Figure 4-3 **Environmental Consequences Vegetation Map**

*Airport Property Impacts:* Approximately 45.1 acres of the annual/bareground vegetative type would be graded; however, since these areas are already disturbed, additional impacts are not expected.

*Degraded saltbush areas.* The degraded saltbrush area comprises much of the Study Area and is heavily impacted by OHV use, though it does support a sparse community of saltbush and annual species (Figure 4-3).

No Action: There would be no impacts to the degraded saltbush area from the No Action Alternative.

Proposed Action:
*BLM Managed Land Impacts:* Minimal impacts to this area would occur since only 0.08 acres of grading would occur on the proposed BLM transfer property/ROW grant area within this plant community. This vegetative community is already impacted, therefore the quality of the habitat is not expected to be meaningfully diminished by this action (Table 4-2).

*Airport Property Impacts:* Approximately 256 acres of degraded saltbush vegetative type would be graded. However, since these areas are already disturbed and are not critical habitat, substantial impacts are not expected.

*Saltbush/annuals area.* The saltbrush/annuals area is a saltbush community and has not been heavily impacted by OHV use, but still receives recreational activity and is grazed by cattle. Approximately 79.0 acres of this habitat is located on the proposed BLM transfer property within the Study Area (Figure 4-3*).*

No Action: There would be no impacts to the degraded saltbush from the No Action Alternative.

Proposed Action:
*BLM Managed Land Impacts:* Of the 79.0 acres of saltbush/annuals community, 14.8 acres would be impacted by grading and perimeter road construction on the proposed BLM transfer property/ROW grant area. This vegetative community is partially impacted already and grading is not expected to further affect the quality of the habitat. This area does not support the BLM sensitive species, Grand buckwheat or Grand Junction suncup, and therefore these species would not be impacted (Table 4-2).

*Airport Property Impacts:* Approximately 54.8 acres of this habitat would be graded on airport property within the Study Area, thus contributing to an overall loss of this vegetative type. This vegetative type already incurs grazing activity and some recreational use which has impacted its quality. Seeding or mulching the graded area with a drought-tolerant seed mix may reduce some erosion, but overall grading of this area would not substantially affect the area.

*Saltbush/Grand buckwheat area.* There is one small 1.0-acre area that is located southwest of 27 ¼ road that supports Grand buckwheat within the Study Area (Figure 4-3).

No Action: There would be no impacts to the Grand buckwheat from the No Action Alternative.

Proposed Action:
*BLM Managed Land Impacts:* There would be no impacts to the Grand buckwheat from the Proposed Action Alternative, because it is not present on the proposed BLM transfer property or ROW grant area within the Study Area (Table 4-2).

*Airport Property Impacts:* There are populations of Grand buckwheat on airport property within the Study Area. Approximately 1.0 acre of this species and its habitat occurs on airport property in the southwestern portion of the Study Area. This habitat is not targeted for grading.

*Greasewood/rabbitbrush community.* There are no areas within the Study Area that support the greasewood/rabbitbrush community (Figure 4-3), therefore no impacts to this habitat are expected to occur as a result of any of the alternatives.

Table 4-2
**VEGETATION IMPACTS**
*Grand Junction Regional Airport Environmental Assessment*

| Species | Habitat Present BLM (acres) | Impact BLM (acres) | Habitat (acres) Airport Property | Airport Impact (acres) | Total Acres of impact |
|---|---|---|---|---|---|
| **Annual/bareground** | 102.00 | 12.00 | 452.00 | 45.10 | 57.10 |
| **Degraded saltbrush** | 30.00 | 0.08 | 373.00 | 256.00 | 286.00 |
| **Saltbrush/annual** | 79.00 | 14.80 | 118.80 | 54.80 | 69.60 |
| **Saltbrush/grand buckwheat** | 0.00 | 0.00 | 1.04 | 0.00 | 0.00 |
| **Greasewood/rabbitbrush** | 0.00 | 0.00 | 16.50 | 0.00 | 0.00 |

**Source**: *BioEnvirons, 2012.*
**Note:** *BLM Acreage includes the 188-acre parcel of proposed land transfer.*
*Airport property acres includes those areas within airport property boundaries.*

### 4.8.7 Wildlife Hazards

The Proposed Action would not create a wildlife hazard as defined in FAA AC 150/5200-33 nor would it affect any existing wildlife hazard areas, because the alternative would not result in the development of wildlife attractants. The Proposed Action does include the construction of detention ponds, but the majority of the time these ponds would be dry. During the rare significant storm event, stormwater would only be detained for a maximum period of 40 hours prior to being released. Consequently, these ponds are not considered a wildlife attractant.

## 4.9 Floodplains

No Action: The No Action Alternative would not adversely impact any floodplains.

Proposed Action: As described in Chapter 3, while a portion of the Airport property is located within the 100-year floodplain, according to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps, none of the project area is located within a 100-year floodplain. To prevent flooding downstream from the Airport, water quality and detention ponds have been included in the preliminary design of the project and coordinated with the City of Grand Junction. Therefore, the Proposed Action Alternative would not result in any substantial impacts to floodplains.

## 4.10 Hazardous Materials, Pollution Prevention, and Solid Waste

No Action: According to the EPA, there are a few sites located near the Airport that are permitted as small generators of hazardous wastes. However, most of these sites are located at least one half-mile to a mile away from the Airport, and would not be impacted by the continued operation of the Airport or future maintenance projects.

Proposed Action: There are no known uses of the land required for the Proposed Action Alternative that would involve or produce hazardous materials. According to the EPA, there are a small number of sites located near the Airport that are permitted as small generators of hazardous wastes. These sites are located southwest of the primary runway, outside of the Study Area, and would not be impacted by the Proposed Action Alternative.

There would likely be a temporary increase in the amount of solid waste due to construction-related activities. The local land fill has a capacity of approximately 1,500 acres, of which only 127 acres are currently used. The increase would be temporary, associated with the construction phase, and would not be expected to overextend the capacity of the Mesa County Landfill.

Construction activities can generate hazardous wastes, and some construction materials constitute hazardous substances. These materials could include fuel, oil, lubricants, paints, solvents, concrete-curing compounds, fertilizers, herbicides, and pesticides. The contractor would be required to implement proper practices to prevent or minimize the potential for these hazardous substances to be released into the environment. Chemicals, petroleum-based products, and waste materials, including solid and liquid waste, would be stored in areas specifically designed to prevent discharge into stormwater runoff.

Areas used for storage of toxic materials could be designed with full enclosure in mind, such as the establishment of a dike around the perimeter of the storage area. Construction equipment maintenance would be performed in a designated area and control measures, such as drip pans to contain petroleum products, would be used. All spills would be cleaned up immediately and disposed of properly.

FAA regulations consider waste disposal sites to be an incompatible land use if located within or planned to be within 5,000 feet of all runways planned to be used by piston-type aircraft and within 10,000 feet of all runways planned to be used by turbojet aircraft. There are no landfills within 10,000 feet of the Airport.

A Phase I Environmental Site Assessment (Appendix 10) was conducted over the 188 acres of BLM managed land proposed for transfer. No recognized environmental issues were found during the assessment. No Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites were listed, and two Resource Conservation and Recovery Act (RCRA) sites in the vicinity of the Airport were found. Based on the distance and down-gradient position, these two sites are not expected to pose an environmental risk. Visual inspection of the site did not reveal potentially hazardous materials.

Because no hazardous waste sites would be affected, because no meaningful increases in solid waste would occur, and because any temporary increases in pollution would be mitigated through Best Management Practices following FAA AC 150/5370-10F, there would be no substantial impacts relating to hazardous waste, pollution prevention, and solid waste.

Also, it is likely that the uranium mill tailings located at the existing remote transmitter/receiver (RTR) site would have to be moved and re-buried in association with the RTR relocation project included in the Proposed Action Alternative. The Colorado Department of Health has indicated that relocating the mill tailings on site is acceptable, as long as they are buried under at least six inches of good material and the location is not accessible to the general public. The Colorado Department of Health will be contacted prior to relocation and burial to ensure compliance with all applicable regulations. The mill tailings would be buried under the existing runway and would not result in any impacts.

## 4.11 Historical, Architectural, Archaeological, and Cultural Resources

No Action: Continued operation of the Airport and future maintenance projects would not result in impacts to any cultural or historic resources.

Proposed Action: The APE for the Proposed Action Alternative is illustrated in Figure 4-4. A cultural resource survey of the APE was completed in March 2011, and the potential impacts on the resources identified by this survey are described below. A copy of the survey can be found in Appendix 6. To protect site security, specific locations of these sites are not identified in accordance with standard practice.

This survey identified three historic sites and nine isolated finds (one prehistoric and eight historic). Two of the sites (a historic homestead site (5ME17676)/feature and a dam (5ME17686)) are recommended as not eligible for inclusion in the NRHP under Criteria A-D, because they lack integrity and other qualities that would make them eligible for inclusion (Appendix 6). The remaining site is a segment of the railroad bed of the historic Little Book Cliff Railway (5ME768.4). 5ME768.4 is recommended as eligible under Criterion A for inclusion in the NRHP, because of its association with transportation and industry and the pioneering development of energy resources in the area. The not-eligible isolated finds, (5ME17677-5ME17685), include eight historic trash scatters, or minimal historic artifact distributions, and one prehistoric artifact. The historic trash scatters would likely be destroyed by earthmoving activities associated with the Proposed Action.

The Proposed Action would adversely impact a portion of the railroad grade that was found to be eligible for listing on the NRHP. Only a small portion of the grade would be impacted by the construction of the perimeter fence and perimeter service road. In addition, the historic trash scatters would likely be destroyed by earthmoving activities associated with the Proposed Action.

A Memorandum of Agreement (MOA) between the BLM and the State Historic Preservation Officer (SHPO) (Appendix 12) defines the mitigation determined to be adequate given the impacts. The mitigation includes a Level II (intensive) photo documentation survey, which was completed for the portion of the grade within the APE (approximately 844 linear feet).

The FAA will complete coordination with Tribal Governments after the Environmental Assessment (EA) is released. All correspondence will be included in the Final EA. Tribal coordination completed by the BLM is discussed in Section 4.19.

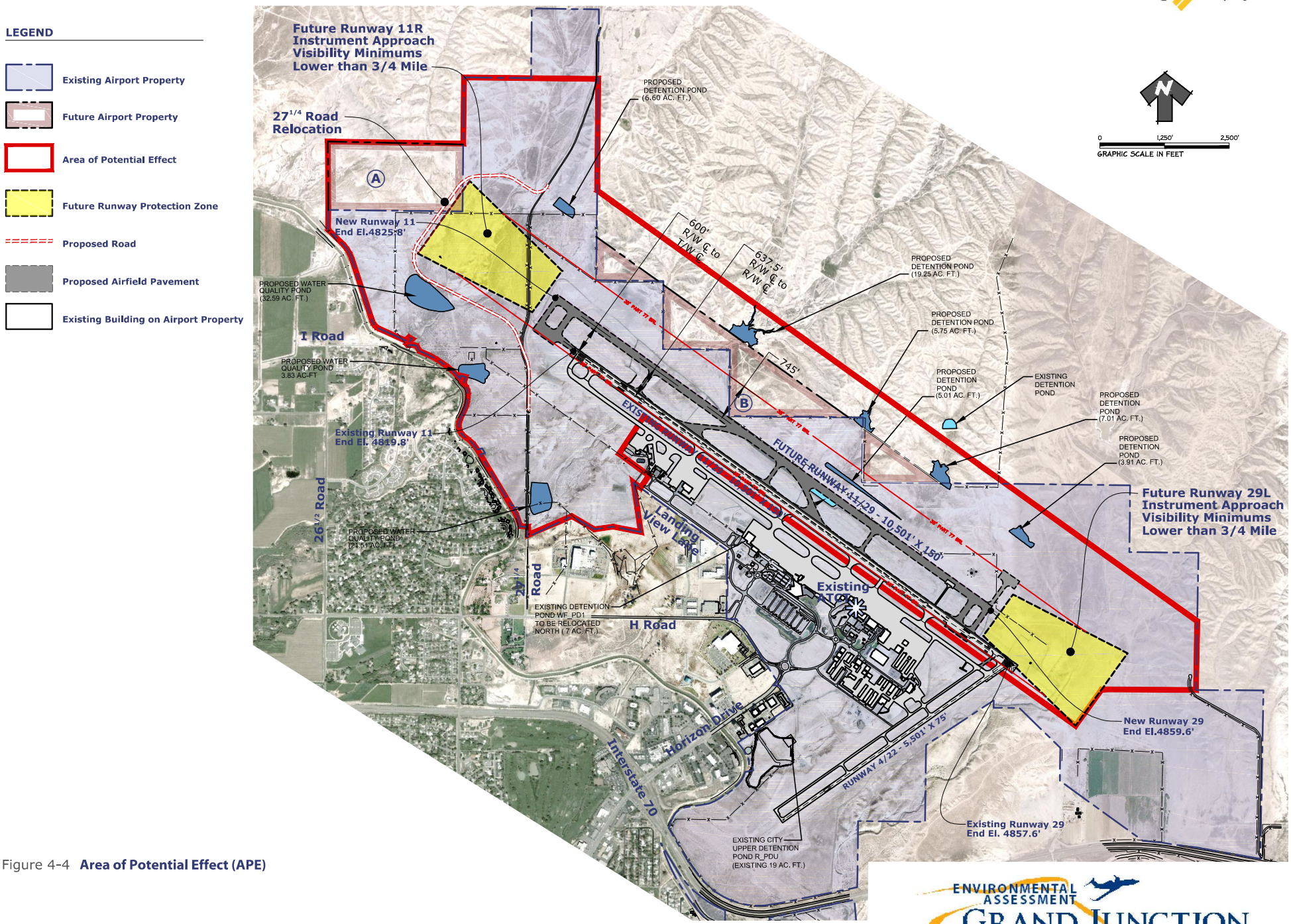


Figure 4-4 **Area of Potential Effect (APE)**

## 4.12 Light Emissions and Visual Environment

The primary lights associated with the Airport are the FAA-required lighting for runways, taxiways, and aircraft visual and navigational aids. According to FAA Order 1050.1E, Change 1 (Environmental Impacts: Policies and Procedures), due to the relatively low levels of light intensity from airport lights compared to background levels associated with airport development actions, light emissions impacts are unlikely to have an adverse impact on human activity or the use or characteristic of the protected properties. This section examines local conditions to determine if a project-related impact would occur.

No Action: There would be no change to the existing airport lighting associated with this alternative. Therefore, lighting or visual impacts are not expected.

Proposed Action: Because the Proposed Action Alternative would involve shifting the runway approximately 637.5 feet to the northeast of the existing runway centerline, the existing navigational aids and lights would be relocated resulting in a slight shift in the location of the lights to the northeast. Additionally, taxiway lighting would be placed on the existing Runway 11/29, which would become the new runway's parallel taxiway. This relocation of the runway and taxiway lights would result in a slight change in the light environment around the Airport as a result of the Proposed Action Alternative due to the installation/relocation of necessary airport lighting. This relocation would generally relocate the lights further from residential areas. The lights would technically be located closer to BLM recreational property, but this change in light exposure is not expected to be substantial as the recreational property is primarily used during daylight hours. Additionally, the Airport is located within an urban environment and the relocation of the lights for the Proposed Action Alternative is not anticipated to create any substantial lighting impacts.

Visual impacts, according to the FAA, are more subjective because they include personal aesthetic preferences. These impacts include things such as increasing contrast between an area and its environment and the community's perception of that change.

The Proposed Action Alternative would slightly alter the existing layout of the Airport, but not substantially alter the overall visual impact of the Airport on the surrounding area. Therefore, this alternative is not expected to substantially alter the visual environment.

The proposed transfer parcel lies within undesignated Visual Resource Management (VRM) areas. It has been the general practice of the GJFO to manage undesignated areas using VRM Class III objectives which allow moderate levels of change to the landscape and where management activities may attract attention, but should not dominate the view of the casual observer. The Proposed Action would include the construction of a perimeter fence, a perimeter service road, and the dams necessary for three storm-water detention ponds on this parcel. Construction would remove vegetation, expose soil, and create new landforms, introducing moderate contrast in line, form, color, and texture to the landscape in the short term. Over time, the contrast would weaken as soils

weathered and vegetation was reestablished. The level of change to the characteristic landscape created by the Proposed Action Alternative would be moderate and considered acceptable.

## 4.13 Natural Resources, Energy Supply, and Sustainable Design

No Action: The No Action Alternative would not result in the consumption of large quantities of natural resources, energy, or fuel in order to maintain the Airport. Therefore, there would no impacts to natural resources or energy supply.

Proposed Action: The Proposed Action Alternative would result in a minor, temporary increase in fuel consumption from construction-related traffic. This construction would also slightly increase the use of natural resources that would principally include construction materials and water. However, this increase in material and water use would not impact the viability of any natural resource or the water rights in the area because of its temporary and minor nature. No known natural gas, geothermal, or other energy resources would be impacted by this alternative.

Therefore, this slight increase of consumption relating to the temporary construction effects would not put substantial pressure on Local, State, or National fuel sources and would not result in any substantial impacts on natural resources or the energy supply. Where able, the Airport would recycle materials during construction and include elements of sustainable design, where feasible.

## 4.14 Noise

FAA's Integrated Noise Model (INM), Version 7.0c, was used to develop the 65 DNL noise contours and evaluate land use impacts. Using the INM model, the population and land use within the 65 DNL and greater were evaluated. To assess the compatibility of various land uses with the anticipated noise exposure, FAR Part 150 land use guidelines were used. The number of acres and types of such incompatible land uses for the Proposed Action Alternative was compared with the No Action Alternative to determine the extent of impact, if any, that the Proposed Action Alternative would have on incompatible land uses. Noise-sensitive areas exposed to a project-related increase of DNL 1.5 dB or more within the 65 DNL contour are considered to experience significant project-related effect.

No Action: The No Action Alternative would not result in any changes to the number, location or type of operations at the Airport. Under the No Action Alternative, there would be approximately 8 residential units and 19 people within the 65 DNL contours, as illustrated in Figure 4-5.

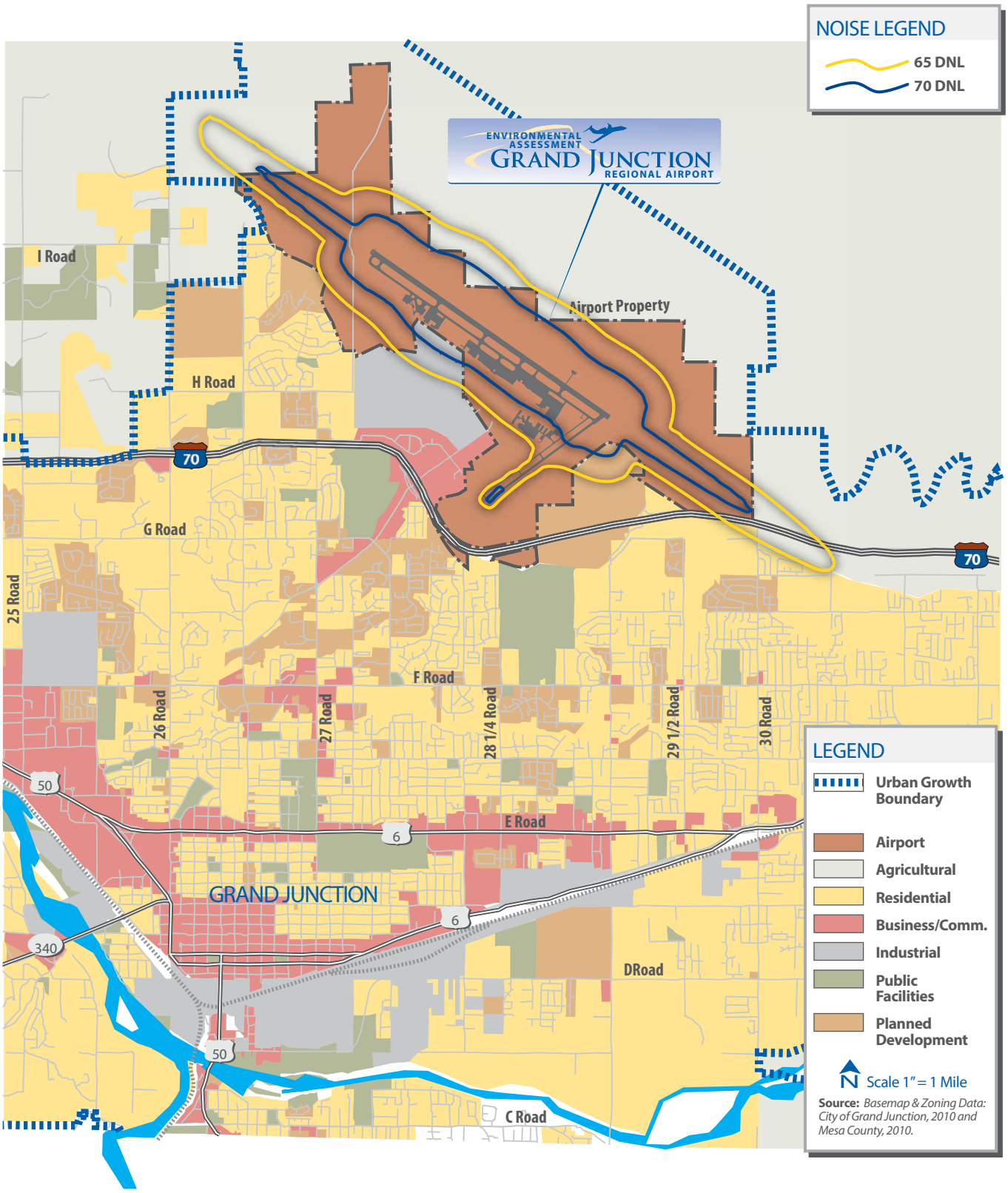


Figure 4-5 **Future 2030 Noise Contours with Future No Action and Generalized Existing Zoning**

Proposed Action (first year of implementation, 2025). Given that the latest project schedule shows the project may be phased over 8 to 10 year, the first year of implementation is considered to be 2025. While the Proposed Action would not change the number or type of operations at the Airport, it would result in a slight shift of the runway location that would result in an associated shift of the noise contours (Figure 4-6). As a result, there would be no homes or other incompatible land uses within the 65 DNL or greater noise contours. Therefore, there would not be any noise impacts in 2025 as a result of the Proposed Action Alternative and implementation would actually result in a noise reduction to the residential areas south of Interstate 70.

Proposed Action (implementation plus five years, 2030). While the Proposed Action would not change the number or type of operations at the Airport, it would result in a slight shift of the runway location that would result in an associated shift of the noise contours (Figure 4-7). As a result, there would be no homes or other incompatible land uses within the 65 DNL or greater noise contours (Table 4-3). Therefore, there would not be any noise impacts in 2030 as a result of the Proposed Action Alternative, and implementation would actually result in a noise reduction to the residential areas south of Interstate 70.

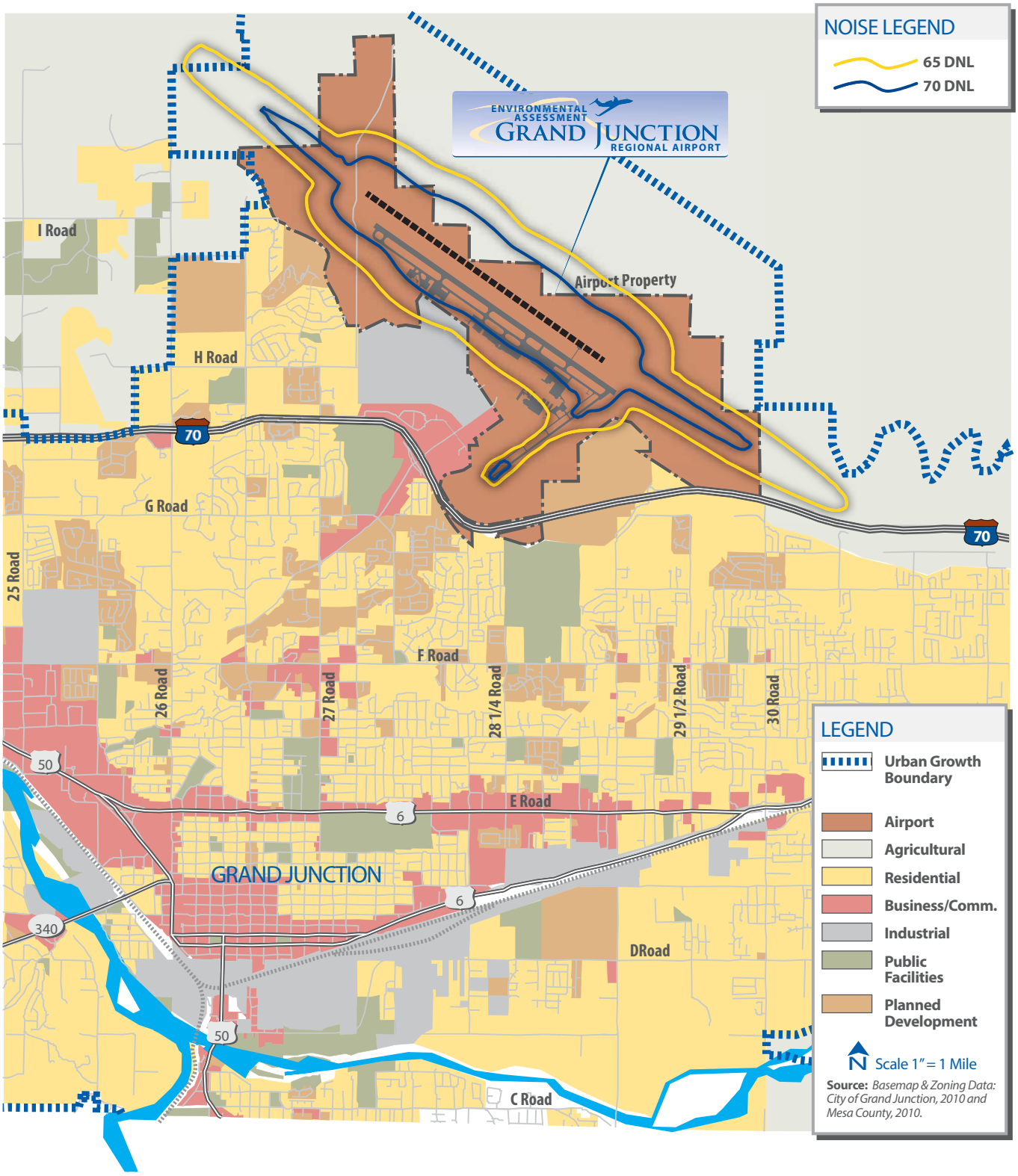


Figure 4-6 **2025 Noise Contours with Proposed Project and Generalized Existing Zoning**

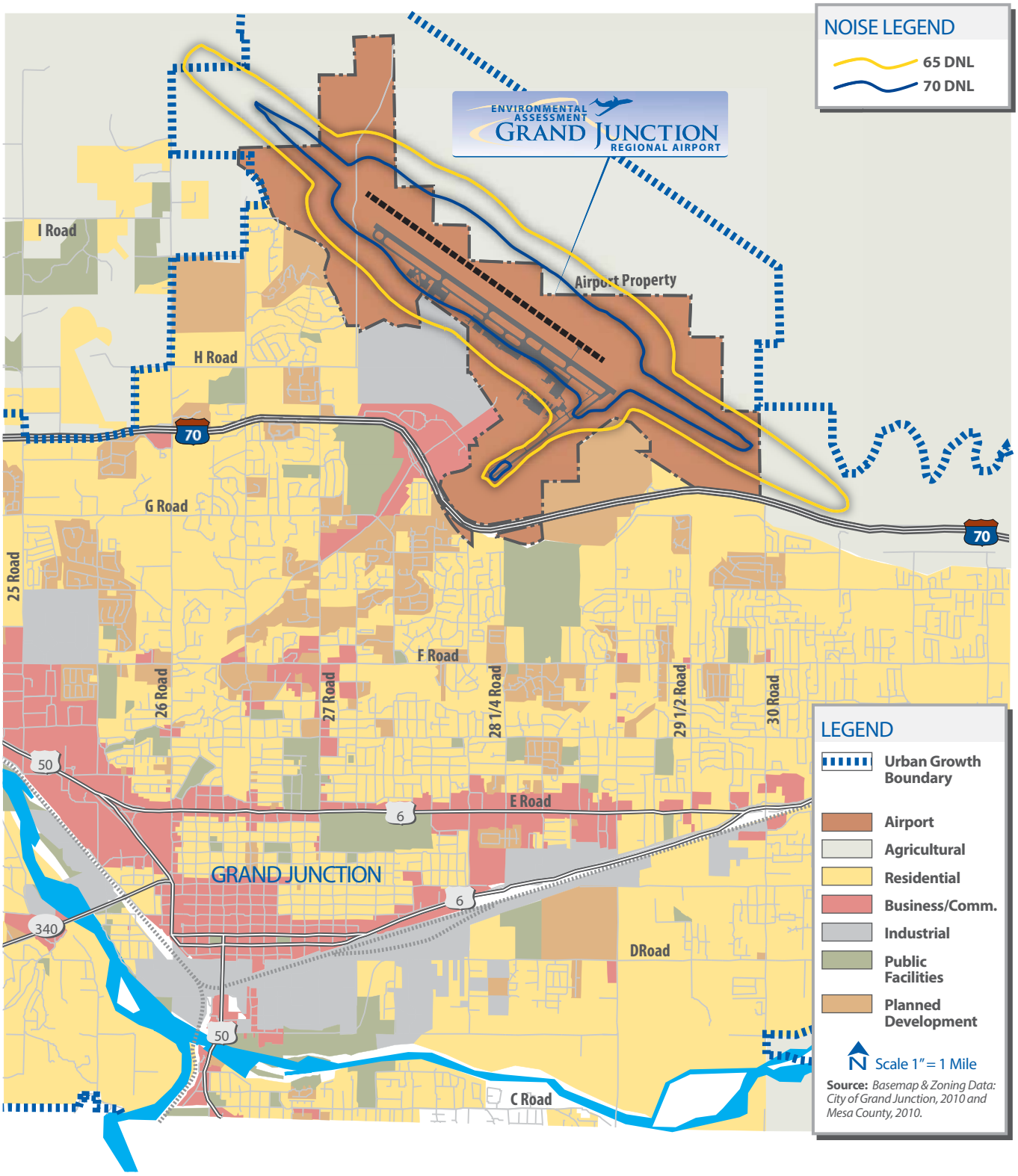


Figure 4-7 **2030 Noise Contours with Proposed Project and Generalized Existing Zoning**

Table 4-3
**LAND USE ANALYSIS, 2030**
*Grand Junction Regional Airport Environmental Assessment*

| | 65 DNL | 70 DNL |
|---|---|---|
| **No Action** | | |
| ***Population/Housing Impacts*** | | |
| Population | 19 | 0 |
| Housing Units | 8 | 0 |
| Schools, Religious Facilities, etc. | 0 | 0 |
| | | |
| ***Land Use (Acres)*** | | |
| Agriculture | 1.0 | 0.0 |
| Commercial | 111.9 | 19.4 |
| Industrial | 44.4 | 1.0 |
| Open Space | 236.8 | 26.0 |
| Residential | 0.0 | 0.0 |
| Rural | 39.4 | 0.0 |
| Airport | 1,519.9 | 890.0 |
| **Total Acres** | **1,990.7** | **938.7** |
| | | |
| **Proposed Action** | | |
| ***Population/Housing Impacts*** | | |
| Population | 0 | 0 |
| Housing Units | 0 | 0 |
| | | |
| ***Land Use (Acres)*** | | |
| Agriculture | 0.0 | 0.0 |
| Commercial | 44.9 | 0.0 |
| Industrial | 96.6 | 0.0 |
| Open Space | 496.5 | 142.8 |
| Residential | 0.0 | 0.0 |
| Rural | 0.0 | 0.0 |
| Airport | 1,463.5 | 840.9 |
| **Total Acres** | **2,105.4** | **984.4** |

**Source:** Barnard Dunkelberg & Company, 2011.

## 4.15 Secondary (Induced) Impacts

No Action and Proposed Action: Major development projects could potentially influence induced or secondary impacts on the surrounding community. Some of these induced impacts could include the relocation of people, or a substantial change to traffic patterns in the area. However, the proposed project does not include any residential or business relocation. Thus, no population migration is expected with the proposed project. As stated in FAA Order 5050.4B, Table 7-1, "Induced impacts would normally not be significant, except where there are also significant impacts in other categories, especially noise, land use or direct social impacts." Because no substantial noise, land use, or direct social impacts would be expected with either the No Action or the Proposed Action, no substantial secondary or induced impacts are expected. Off-road vehicle users would be displaced from a portion of the existing recreational area, resulting in a displacement of those activities to the rest of the recreation area. However, given that the area of acquisition is small relative to the entire recreation parcel, this displacement is not expected to result in substantial secondary impacts. Mitigation through the development of a parking/staging area for off-road recreation vehicle users would enhance the recreational lands adjacent to the Study Area.

## 4.16 Socioeconomic Environment, Environmental Justice, and Children's Environmental Health and Safety Risks

No Action: Because this alternative only includes the continued operation of the Airport and maintenance projects, there would be no change in the local socioeconomic environment, no environmental justice impacts, and no impacts related to children's health and safety.

Proposed Action:

*Socioeconomic Environment.* Indirect, long-term impacts, both beneficial and adverse, are typically associated with a secondary event or action, developed from implementing one or more primary actions. The relocation of the runway is not anticipated to have any negative direct or indirect socioeconomic impacts either during construction or following project completion. Businesses on the Airport would not be negatively impacted by the project because no on airport development areas or airport access are affected. Furthermore, business would benefit from a runway that meets FAA design standards. The relocation of 27 ¼ Road would be designed in order to minimize impact to users of the road, and the portion of the road that is closed as a result of the Proposed Action Alternative would not be closed until the relocated portion of the road is open.

Indirect socioeconomic impacts are expected when the approximately 188 acres of previously available recreational land is transferred to the Airport, fenced, and no longer available for recreational use. However, this 188-acre parcel represents less than 1% of the entire 11,000-acre Grand Valley OHV Area. This area is managed by the BLM as an IRMA. Furthermore, the BLM Grand Junction Field Office manages over 275,000 acres of land as IRMAs. For these reasons, the

removal of 188 acres of recreational land is not anticipated to result in any decrease in the number of recreational users and consequently not have a substantial, indirect socioeconomic impact.

Also, the Proposed Action Alternative would induce temporary positive socioeconomic impacts within the region as a result of construction activity. These impacts would benefit the City of Grand Junction and Mesa County during the multi-year phased construction process by increasing employment opportunities and expenditures on local services and materials.

*Environmental Justice.* An Environmental Justice evaluation was conducted to determine whether the Proposed Action Alternative would result in an inequitable distribution of negative effects to special population groups. These special population groups include minority, special ethnicity, or low-income neighborhoods. Environmental Justice is examined during the evaluation of other impact categories, such as noise, air quality, water, hazardous materials and cultural resources.

There would be no negative noise or relocation impacts on any population groups. Therefore, the Proposed Action Alternative is not expected to result in any substantial negative or otherwise disproportionate impacts to any specific population groups within the Study Area.

*Children's Environmental Health and Safety Risks.* Agencies are encouraged to identify potential impacts and ensure that their policies, programs, activities, and standards address disproportionate risks to children resulting from environmental health risks or safety risks. Impacts on schools and homes with children are examined in terms of noise impacts and other general environmental health and safety issues.

The Proposed Action Alternative is not expected to result in any environmental health risks or safety risks for children. There are no schools, parks, or playgrounds within the Study Area or within the 65 DNL or greater noise contour that might be affected by noise or other impacts associated with the Proposed Action.

## 4.17 Water Quality

Water quality considerations related to airport development often include increased surface runoff, erosion, and pollution from fuel, oil, solvents, and deicing fluids.

Potential pollution could come from petroleum products spilled on the surface and carried through drainage channels off of the Airport. State and Federal laws and regulations have been established that include standards for above ground and underground storage tanks, leak detection, and overflow protection.

No Action: The No Action Alternative includes only the continued operation of the Airport and maintenance projects, with no change in impervious surface; therefore, there would be no impacts on water quality.

Proposed Action: The Proposed Action Alternative would change the drainage patterns and slightly increase the impervious surface within the study area (Figure 4-8), thus increasing the amount of stormwater runoff. This Alternative would require a change to the National Pollution Discharge Elimination System (NPDES) Permit for the Airport due to increased stormwater runoff as a result of the new runway and taxiway system. The Proposed Action would include the construction of detention ponds, water quality ponds, and appropriately sized culverts to accommodate changes in drainage patterns associated with the Proposed Action. The maintenance of these ponds and culverts would be the Airport's responsibility following construction. The perimeter service road would serve as airport access to the ponds for the purpose of regular maintenance. The alteration of the drainages crossing the Study Area is also addressed in the Wetlands section of this Chapter and in the Drainage Analysis in Appendix 15.

Below the project area it is anticipated that stormwater erosion would be less than under current conditions as the detention basins, and stormwater controls would reduce flood peaks limiting soil loss from stream banks and flood prone areas. Reduced erosion downstream of the structures would improve water quality as sedimentation, and salt loading rates to the Colorado River would be reduced from current conditions below these structures.

Natural erosion rates outside of the construction area and up-stream of the proposed stormwater controls would persist at rates estimated under the affected environment. However, stormwater detained by the detention basins would deposit some sediment and salts typically carried downstream to the Colorado River. Therefore, the proposed structures would reduce the volume of salt and sediment currently being produced from these watersheds to the Colorado River potentially improving water quality.

Any construction projects requiring earthwork would result in some erosion and sedimentation. The construction contractor would be required to follow guidelines outlined by the FAA's Advisory Circular 150/5370-10F, *Standards for Specifying Construction of Airports*. Final plans for any project would incorporate the provisions of AC 150/5370-10F to ensure minimal impact due to erosion, pollution, sanitary waste, and chemical use. The construction contractor would also implement BMPs following FAA AC 150/5370-10F, in order to avoid and minimize risk of impact to any surface water resources adjacent to the Study Area during construction.

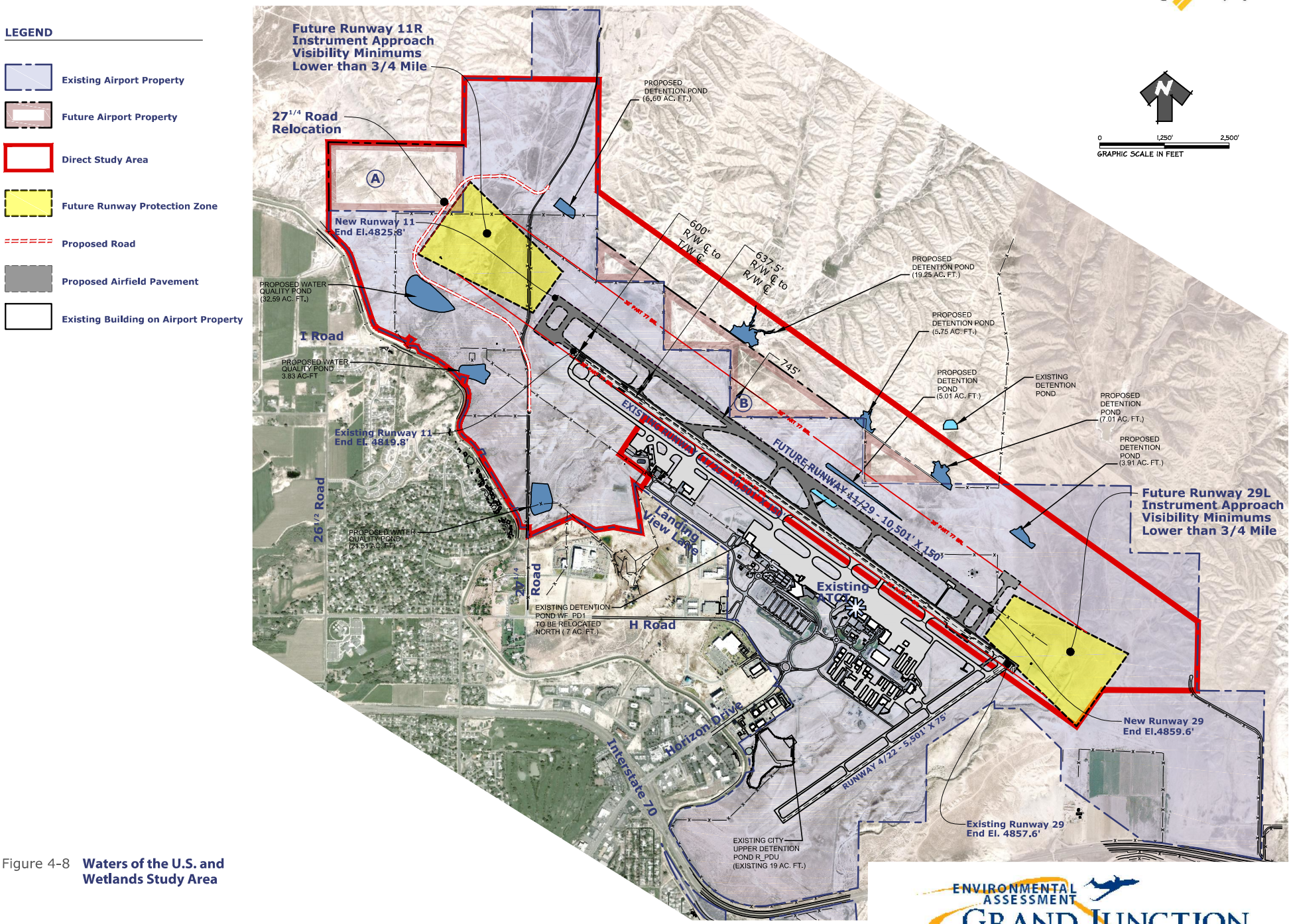


Figure 4-8 **Waters of the U.S. and Wetlands Study Area**

## 4.18 Wetlands

A complete survey of the site was completed in 2010 of both the proposed impact areas on airport property and the initial BLM conveyance area of 720 acres. It is important to note that the Proposed Action Alternative only includes 188 acres of the original 720 acres of BLM managed land for transfer to the Airport Sponsor. Therefore, the Study Area for this resource category includes a smaller area than the survey area.

Based on this survey, there are no wetlands within the Study Area, but there are ten drainages that cross the area, two of which are identified as intermittent with the remainder as ephemeral, which are considered Waters of the U.S. Three water features that appear to have no outlet or connection to Waters of the U.S. are also present within the Study Area (Figure 4-9). In other words, no nexus to the Colorado River can be determined for these three water features. These drainages support bare banks at places where the banks are at right angles to the drainage bottom or a combination of greasewood (*Sarcobatus vermiculatus*) and rubber rabbitbrush (*Chrysothamnus nauseosus*) if the banks slope to the drainage bottom. Also, OHV tracks crossed many if not all of the drainages, and these crossings included location of tracks down the banks, on occasion through the drainage, and then up the other bank. In some cases, the bottom of the larger drainages are used as active OHV routes.

No Action: There would be no impacts to the waters of the U.S. from the No Action Alternative.

Proposed Action:

*BLM Managed Land Impacts:* Approximately 2,115 linear feet and 0.13 surface acres of ephemeral drainage would be impacted in association with the development of detention features and the airport perimeter road on the proposed BLM transfer property and ROW area within the Study Area (Table 4-4). These areas are regulated by the Army Corps of Engineers and are further described in the *Total Impact* subsection below.

*Airport Property Impacts:* The on-airport impacts include approximately 5,400 linear feet (this total includes 800 linear feet of a linear water feature identified as WF-3 that does not connect to other waters) and approximately 0.07 acres of ephemeral drainage that would result from the of grading associated with runway construction, the development of detention features, and the construction of a perimeter service road (Table 4-5). These areas are regulated by the Army Corps of Engineers and are further described in the *Total Impact* subsection below.

*Total Impacts (BLM and Airport):* These drainages serve to move water from the surrounding landscape to drainage ditches that eventually flow to the Colorado River. Water would still continue to flow through the drainages during storm events following construction of the Proposed Action Alternative, but would be detained for a short period of time to slow flows, decrease erosion downstream, and improve water quality. Vegetation would be removed or occasionally inundated within the proposed detention features. The area of BLM transfer land and ROW converted from sparse upland vegetation to detention feature is approximately 13.4 acres.

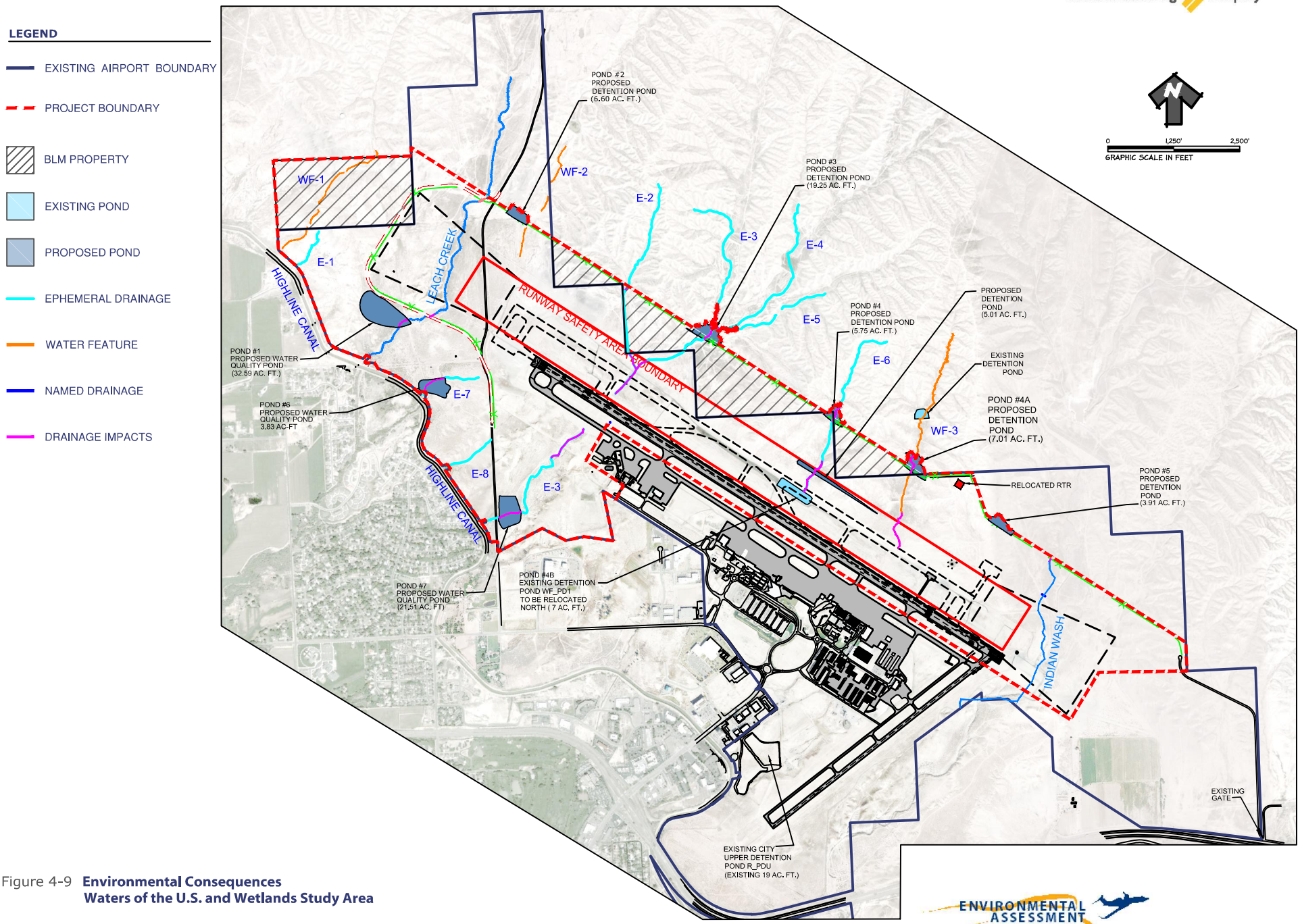


Figure 4-9 **Environmental Consequences**
**Waters of the U.S. and Wetlands Study Area**

In total, approximately 7,475 linear feet and 0.38 surface acre of ephemeral drainage located within the Study Area would be impacted by the proposed runway improvements. Potential mitigation for impacts to Waters of the U.S. is described in the *Mitigation* section of this chapter and in the pre-construction notice to the Army Corps of Engineers included in Appendix 11. With the proposed mitigation, the impacts would not be substantial.

Table 4-4
**EXISTING DRAINAGE AND PROPOSED IMPACTS – BLM TRANSFER PROPERTY**
*Grand Junction Regional Airport Environmental Assessment*

| Water of the US | Linear Feet Within Study Area | Impacts to Drainage Feature- Road and/ or Grading (LF) | Impacts to Drainage Feature- Detention Feature (LF) | Area of Impact - Road or Grading (Acres) | Area of Impact - Detention Feature (Acres) |
|---|---|---|---|---|---|
| **E-3 North** | 1,100 | 40 | 670 | 0.004 | 0.08 |
| **E-4** | 340 | 40 | 340 | 0.005 | 0.01 |
| **E-5** | 200 | 0.0 | 200 | 0.0 | 0.007 |
| **E-6** | 425 | 0.0 | 425 | 0.0 | 0.02 |
| **WF-1** | 2,078 | 0.0 | 0.0 | 0.0 | 0.0 |
| **WF-3** | 400 | 0.0 | 400 | 0.0 | 0.0 |
| **Total** | **4,543** | **80** | **2,035** | **.009** | **0.12** |

**Source:** *BioEnvirons,* 2012.

Table 4-5
**EXISTING DRAINAGE AND PROPOSED IMPACTS – AIRPORT PROPERTY**
*Grand Junction Regional Airport Environmental Assessment*

| Water of the US | Linear Feet Within Study Area | Impacts to Drainage Feature - Road and/ or Grading (LF) | Impacts to Drainage Feature - Detention Feature (LF) | Area of Impact - Road or Grading (Acres) | Area of Impact - Detention Feature (Acres) |
|---|---|---|---|---|---|
| **Leach Creek** | 4,770 | 188 | 260 | 0.009 | 0.01 |
| **Indian Wash** | 3,267 | 40 | 0.0 | 0.005 | 0.0 |
| **E-1** | 890 | 0.0 | 0.0 | 0.0 | 0.0 |
| **E-2** | 1,760 | 400 | 0.0 | 0.02 | 0.0 |
| **E-3 North** | 1,704 | 1,000 | 0.0 | 0.1 | 0.0 |
| **E-3 South** | 3,340 | 910 | 450 | 0.05 | 0.02 |
| **E-4** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **E-5** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **E-6** | 1,520 | 820 | 80 | 0.03 | 0.003 |
| **E-7** | 1,293 | 0.0 | 530 | 0.0 | 0.02 |
| **E-8** | 1,066 | 0.0 | 0.0 | 0.0 | 0.0 |
| **WF-1** | 694 | 0.0 | 0.0 | 0.0 | 0.0 |
| **WF-2** | 550 | 0.0 | 0.0 | 0.0 | 0.0 |
| **WF-3** | 1,536 | 800 | 0.0 | 0.0 | 0.0 |
| **Total** | **22,390** | **4,158** | **1,320** | **0.21** | **0.053** |

**Source:** *BioEnvirons,* 2012.

## 4.19 BLM Specific Resource Considerations

The Study Area for these BLM specific resource considerations includes the area of proposed transfer (188-acre parcel of BLM managed land) and the BLM ROW area. There are a number of BLM specific environmental resource considerations in this EA. Because the preparation of this document is a joint effort between the FAA and the BLM and primarily follows FAA orders and guidance, these BLM resource categories are being listed separately and are the subject of BLM Guidance (BLM NEPA *Handbook*). However, where the environmental resource considerations of both agencies (BLM and FAA) overlap, such as Land Use and Fish, Wildlife and Plant; the NEPA requirements of both agencies are discussed under that specific resource category.

### 4.19.1 Transportation and Access

No Action: No impacts to transportation and access are expected under the No Action Alternative, because no projects would occur.

Proposed Action: The primary access point for the public is 27 ¼ Road, and the construction phasing plan for relocation of a portion of this road has the road construction taking place prior to the closure of the existing road in order to maintain access. Additionally, because there is a secondary access point at 29 Road that would not be altered as a part of the Proposed Action Alternative, several access points would be kept open during and after construction. Because of these plans, no substantial impacts to access are expected as a result of the Proposed Action Alternative; however, the realignment of 27 ¼ Road would add approximately 3,500 feet to the access route for recreational users of BLM managed land in this area.

### 4.19.2 Land Tenure and Realty Authorizations

No Action: No impacts to land tenure or realty authorizations are expected under the No Action Alternative, because no projects would occur and title to the land would not be transferred.

Proposed Action: There is one existing ROW grant within the Study Area issued for a perpetual term to Grand Valley Rural Power for an existing power transmission line. If the decision is made to complete the proposed land transfer, the patent may be issued subject to the ROW, thereby maintaining the ROW under its current terms and conditions, with the Airport taking over all matters relating to the management of the ROW. The ROW holder would also have the option of either a) negotiating a new agreement with the Airport; or b) making a request to BLM to convert the ROW to an easement. Therefore, the proposed action is not expected to negatively impact the ROW. The Airport would need to file an application and obtain a ROW grant from the BLM authorizing construction of the three water detention ponds proposed on BLM managed land outside of the transfer parcel, the impacts of which are analyzed in this document. Also, as a result of the Proposed Action Alternative, there would be a total of approximately 188 fewer acres available within the Grand Junction Field Office for land use authorizations.

### 4.19.3 Recreation

No Action: No impacts to recreation are expected under the No Action Alternative, because no projects would occur.

Proposed Action: The Study Area is currently used for recreational activities such as use of Off-Highway Vehicles (OHVs). Within the Grand Valley OHV Recreation Area, under a signed Memorandum of Understanding (MOU) in 1991, the BLM listed a 2,163.46-acre area (including the entire 188-acre Study Area that is the focus of this EA) as lands intended to be available to the Airport for future airport expansion.[5] As stated in Section 4.7, no prudent or feasible alternative exists to avoid the acquisition of a portion of this recreation area. The Proposed Action Alternative as described in the Section 4(f) Evaluation (Appendix 8) minimizes the effects to recreation. Additionally, construction of an alternative staging/parking area has been included to mitigate the effects on recreational uses. Due to the proposal's minimized area of impact, the large total area available for recreational use, and the proposed staging area mitigation measures, the impacts on recreational users would be minimal. The staging/parking area would likely be two to four acres in size and would likely need to be surveyed for biological and cultural resources prior to construction.

### 4.19.4 Mineral Resources

No Action: No impacts to oil and gas or other minerals are expected under the No Action Alternative, because no projects would occur.

Proposed Action: The area proposed for transfer from the BLM to the Airport, as well as the proposed BLM ROW area, are open to oil and gas leasing. One existing shut-in well head was identified within the initial 720-acre parcel, however, the wellhead is outside the reduced size land transfer area (188-acre parcel) under the Proposed Action Alternative. There are also two oil and gas leases on the property. Under the Proposed Action Alternative, the surface estate of the 188 acres would be transferred, but the mineral rights would be retained by the BLM and managed by the BLM as a split estate, so there would be no impacts expected to occur on the existing leases.[6] Access to these minerals would be in accordance with applicable Federal laws, regulations, lease stipulations, and permit requirements, as well as any surface use agreements between the Airport and the lessee/operator.

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5 Memorandum of Understanding between Walker Field, Colorado, Public Airport Authority and U.S. Department of the Interior, Bureau of Land Management, Grand Junction District Office, July 18, 1991 (BLM MOU CO-076-91003).

6 Split estate is a situation in which a property owner is not the same party who owns the rights to extract minerals from underneath the property.

The potential for natural gas commercial operations is considered low, no mining claims have been staked on the property at the time of the site investigation, and no solid mineral leases are held in the Study Area. The full mineral report is included in the Mineral Report (Appendix 9).

No impacts related to oil and gas or other minerals are expected as a result of the Proposed Action Alternative.

### 4.19.5 Livestock Grazing

No Action: No impacts to livestock grazing are expected under the No Action Alternative, because no projects would occur.

Proposed Action: The area proposed for transfer from the BLM to the Airport, as well as the proposed BLM ROW area, is currently permitted for livestock grazing and is within the Mount Garfield Allotment. Approximately 188 acres of 26,100 acres would be lost that are currently available for grazing. The Federal grazing permit would need to be modified to remove the 188-acre parcel from the permit. In accordance with Federal regulations at 43 CFR 4110.4-2(b), the BLM notified the grazing permittee of the proposed land transfer by letter dated March 28, 2011. On October 31, 2011 the permittee signed a Grazing Cancellation Waiver stating agreement to a reduction in the size of the Mount Garfield Allotment due to the conveyance of public lands to Grand Junction Regional Airport. Significance relates to the amount of grazing area impacted, as well as potential for impact to overall health of the land and the stock. No Animal Unit Months (AUMs) would be lost as a result of the Proposed Action.

### 4.19.6 Soils

No Action: No impacts to soils are expected under the No Action Alternative, because no projects would occur.

Proposed Action: Erosion potential from the construction area would be elevated during construction and maintenance activities as soils would be striped of stabilizing agents such as vegetation, woody debris, and rock. However, design features brought forward from the Airport's Stormwater Management Plan would reduce the significance of this direct effect to soil erosion. Natural erosion rates outside and upstream of the proposed construction area would persist at rates estimated under the affected environment. Below the construction area, it is anticipated that stormwater erosion would be less than under current conditions as the stormwater controls would reduce flood peaks, limiting soil loss from stream banks and flood-prone areas. Upland erosion rates would remain unchanged from current conditions.

### 4.19.7 Migratory Birds

No Action: No impacts to migratory birds are expected under the No Action Alternative, because no projects would occur.

Proposed Action: Migratory birds are further addressed in the *Fish, Wildlife, and Plants* section of this EA. Due to the low habitat quality and the lack of presence of species present in the project area during surveys, paired with the BMPs (in accordance with FAA AC 150/5370-10F) to reduce potential impacts on migratory birds, there would be no anticipated impacts related to migratory birds.

### 4.19.8 Invasive Species

No Action: No impacts to invasive species are expected under the No Action Alternative, because no projects would occur.

Proposed Action: The results of the field survey (Appendix 5) indicate that the majority of the Study Area consists of bare ground and/or a mix of exotic, invasive annual grasses. These invasive grasses include cheatgrass (*Anisantha tectorum*) and annual wheatgrass (*Eremopyrum triticeum*). There is a potential for cumulative impacts from the expected construction activities. Construction activities disturb soils and provide a foothold for some invasive species of plants. However, BMPs (in accordance with FAA AC 150/5370-10F) should prevent and minimize most impacts.

### 4.19.9 Tribal/Native American Religious Concerns

No Action: No impacts to tribal/Native American religious concerns are expected, because no projects would occur as a result of the No Action Alternative.

Proposed Action: There is no known evidence that suggests the Study Area holds special significance for Native Americans or is actively used to maintain any traditional practices. Therefore, substantial impacts are not expected. If any potentially important sites are unearthed during construction, construction would immediately cease and the BLM, FAA, State Historic Preservation Office, and Tribes would be contacted. Tribal Consultation for this project occurred in 2012 and 2013 with the Ute Indian Tribe of the Uintah and Ouray Reservation, the Ute Mountain Ute Tribe and the Southern Ute Tribe. No concerns have been brought forward to date.

### 4.19.10 Paleontological Resources

No Action: No impacts to paleontological resources are expected, because no projects would occur as a result of the No Action Alternative.

Proposed Action: There are no known paleontological resource sites in the Study Area. However, since the surface geologic unit is rated as a Class 3 using the BLM PFYC system there is a moderate potential for impacts and/or discovery of vertebrate fossils with any surface disturbing activities. Should an inadvertent discovery of any vertebrate paleontological resources happen, construction would immediately cease and the BLM geologist would be notified to identify resources and determine the best course of action.

### 4.19.11 BLM Land Use Considerations

The Standards for Public Land Health need to be met for the proposed 188-acre land transfer including in the Proposed Action Alternative. In January 1997, Colorado Bureau of Land Management approved the Standards for Public Land Health. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. An assessment of the applicability for each standard was made in Chapter 3 (see page 3.41), and a finding for each standard is included below, including Standard 1, Upland Soils, Standard 2, Riparian Systems, Standard 3, Plant and Animal Communities, Standard 4, Threatened and Endangered Species, and Standard 5, Water Quality.

- Standard 1: The land health assessment for Standard 1 is "*meeting with problems*," trending towards "*not meeting*." The proposed transfer area has extensive OHV use and trails, soil loss in heavily-travelled areas, and lack of native vegetation to build soils. Consequently, the finding is that transfer parcel A would remain the same and transfer parcel B would improve under the Proposed Action Alternative given that transfer parcel B would be fenced and would no longer be open to recreational use.

- Standard 2: The proposed transfer area contains no riparian systems, therefore, Standard 2 is not applicable.

- Standard 3: The land health assessment for Standard 3 is "*meeting with problems*", trending towards "*not meeting*." The proposed transfer area has excessive OHV use and trails, cheatgrass and annual wheatgrass invading drainage areas, and lack of perennials. In regards to animal communities, the same rating could be used. The lack of perennial vegetation and high level of motorized activity is considered problematic. Consequently, the finding is that transfer parcel A would remain the same and transfer parcel B would improve under the Proposed Action Alternative given that transfer parcel B would be fenced and would no longer be open to recreational use.

- Standard 4: The land health assessment for Standard 4 is "*not meeting*" due to the fact that the proposed transfer area no longer supports a health native plant community, upon which threatened and endangered and special status species are dependent. Consequently, the finding is that both transfer parcels would remain the same under the Proposed Action for Standard 4.

- Standard 5: The land health assessment for Standard 5 is "*meeting with problems*," trending towards "*not meeting*." The proposed transfer area has excessive OHV use and trails, plants are pedestalled indicating excessive soil loss, infiltration impaired by loss of soil, and lack of vegetation. Consequently, the finding is that transfer parcel A would remain the same and transfer parcel B would improve under the Proposed Action Alternative given that transfer parcel B would be fenced and would no longer be open to recreational use.

Based on the above analysis, no substantial impacts would occur relating to BLM Standards for Public Land Health.

## 4.20 Cumulative Impacts

Cumulative effects are impacts "On the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR § 1508.7)." The basis for this analysis is the recognition that while the impacts of many actions may be individually small, the cumulative effects of past, present, and reasonably foreseeable actions on populations or resources can be considerable. NEPA requires that cumulative effects be evaluated along with the direct and indirect effects of the Proposed Action Alternative. The level of analysis and scope of cumulative effect assessment are typically commensurate with the potential impacts, resources affected, project scale, and other factors. As with direct and indirect effects, the No Action Alternative serves as the baseline against which to evaluate cumulative effects.

### 4.20.1 Resources of Concern

The focuses of this cumulative impact analysis are those resources either directly or indirectly impacted by the Proposed Action. If the Proposed Action would not cause a direct or indirect impact on a resource, then it would not contribute to a cumulative impact on that resource.

Resources of concern for this analysis include biotic resources, DOT Section 4(f) resources, floodplains, historic resources, and water quality/wetlands.

Implementation of the Proposed Action is not expected to result in increased aircraft operations. The projects would slightly change flight and traffic patterns, but would not impact noise over noise sensitive areas or substantially affect traffic. Therefore, the Proposed Action is not expected to produce substantial adverse noise or air quality cumulative impacts. In addition, through the analysis completed for this EA, the Proposed Action was found not to impact the remaining resource categories.

### 4.20.2 Geographic Scope and Time Frame

A cumulative impact analysis considers impacts to resources within defined geographic and temporal boundaries. The geographic area varies by the affected resource. The defined geographic boundaries for this analysis consist of:

- DOT Section 4(f) – the Grand Valley OHV area and the historic railroad grade.
- Fish, Wildlife & Plants– the segment of the Colorado River that receives runoff from the project area and habitat for species of concern.
- Historic Resources – the historic railroad grade.
- Water quality/wetlands – the watershed.

The temporal timeframe should go back far enough to capture, at the very minimum, baseline conditions and into the future far enough to allow impacted resources to return to pre-project conditions or for the useful life of the project. For this analysis, the timeframe includes the previous decade (to capture baseline conditions) and the useful life of the project for the future (approximately 20-years).

When considering the significance of the cumulative effects, the same thresholds of significance used in identifying significant project-related effects are used, and such thresholds of significance are defined in FAA Order 1050.1E, Change 1, *Environmental Impacts: Policies and Procedures*

### 4.20.3 Past, Present and Reasonably Foreseeable Projects

As defined by CEQ guidance, the consideration of cumulative effects must consider the past, present, and reasonably foreseeable projects. Such projects include actions undertaken at the Airport, as well as development undertaken in the airport environs. This subsection identifies those past, present, and reasonably foreseeable future projects.

#### 4.20.3.1 Past Projects

For purposes of this evaluation, the review of past projects has considered actions at the Airport and in the vicinity within the last decade. The most notable project was completed in 2008, which was the reconstruction of Walker Field Drive and included new landscaping, signage, and a passenger parking lot. Other projects include: rehabilitation of the General

Aviation (GA) ramp; Runway 11/29 rehabilitation; and a detention pond west of 27 ¼ Road constructed by the City on BLM managed land. Most of these projects all had minimal environmental effects and were environmentally cleared via categorical exclusions. BLM recently prepared an EA for new storm water detention basins in the intermittent Leach Creek and Bosley Wash drainages located north and east of Grand Junction. The purpose of the detention basins is to reduce flooding and property damage to residential and commercial areas in Grand Junction. In addition, infill development is expected to occur in the neighborhoods in the airport environs as population and economic activity grows over time.

Because quantifiable information is not readily available for past projects and conditions, the cumulative impact analysis relative to past projects is largely qualitative.

#### 4.20.3.2 Current Projects

For purposes of this cumulative effects analysis, "current" refers to projects that would be under construction during year 2013-14 timeframe. No airport projects are currently ongoing other than routine airport maintenance, and Terminal Building Expansion Phase I which includes an Airport Administration Building.

#### 4.20.3.3 Reasonably Foreseeable Future Actions

A number of capital projects are planned in the future for Grand Junction Regional Airport. However, none of these projects are being examined or cleared in this EA. However, for the purposes of examining cumulative impact, reasonably foreseeable future actions may include:

- Relocation of airport administration offices.
- Surface maintenance - Runway 4/22, GA Ramp, Air Carrier Ramp.
- Acquisition of 3,000 Gallon Airport Rescue and Firefighting (ARFF) Vehicle.
- ARFF Building Addition.
- Air Cargo Apron Utility Relocation.
- Passenger Terminal Building Expansion/Replacement Terminal.
- Taxiway C Relocation.
- South General Aviation (GA) Expansion Ramp Embankment and Infrastructure.
- Rental Car Service Facility.
- 29 Road - Land Purchase.
- City of Grand Junction Leach Creek Detention Basin.
- Livestock Grazing.
- Dispersed recreation.
- Natural gas development.

- OHV use.
- Rights-of-Way.

When considering other reasonably foreseeable future projects, other projects in the airport vicinity were also identified. BLM recently prepared an EA for new storm water detention basins in the intermittent Leach Creek and Bosley Wash drainages located north and east of Grand Junction. The purpose of the detention basins is to reduce flooding and property damage to residential and commercial areas in Grand Junction. In addition, infill development is expected to occur in the neighborhoods in the airport environs as population and economic activity grows over time.

## 4.20.4 Assessment of Potential Cumulative Impacts

### 4.20.4.1 DOT Section 4(f) Resources

The Proposed Action Alternative would affect two Section 4(f) resources: the BLM managed lands that are used for recreational purposes and the Little Book Cliff Railway line (which is on BLM managed land). No other reasonably foreseeable future projects are known that would affect the BLM managed lands or other historic/recreational/park uses that comprise DOT Section 4(f) lands.

The Airport Master Plan Update notes that in the future, after acquisition of the land needed for the Proposed Action Alternative is completed, the Airport Authority may develop the land for aviation purposes that is located between the runway and the new fence line. If the railway bed is not removed at this time as part of the Proposed Action, a future airport project could require its removal or substantial alteration to use/develop that land. As part of the mitigation for the Proposed Action Alternative, a Level II documentation will have occurred to create a record of the condition and history associated with this railway line. Because of the degradation that has already occurred as part of the off-road vehicle use of the railway bed, the cumulative effects associated with a permanent loss of the railway bed are not considered significant. Therefore, no substantial cumulative impacts to DOT 4(f) lands were identified.

### 4.20.4.2 Fish, Wildlife, and Plants

As noted previously in Section 4.8 (*Fish, Wildlife, and Plants)*, the Proposed Action Alternative is not expected to affect fish as the calculated loss of 0.26 acre feet per year is well below the 100 acre-feet per year threshold of significance and would be covered by the Programmatic Biological Assessment (ES/GJ-6-CO-08-F-0010). Other development in the region that results in the need for detention or creation of impervious surface could similarly contribute to additional water loss, however, any development on BLM managed land would

also likely be covered under the Programmatic Biological Assessment. Cumulative impacts likely to impact Fish, Wildlife, and Plants in the area surrounding the Proposed Action include dispersed recreation and natural gas development. The Proposed Action, when combined with past, present, and reasonably foreseeable actions, is not expected to result in declines of fish, wildlife, or plant species. While plant and habitat for various wildlife in the area would be affected by the Proposed Action Alternative, no endangered species are known to occur in the project area and no endangered species would be affected. No other future projects are known that would add additional impacts to these plants or wildlife systems. Therefore, no cumulative impacts are expected.

#### 4.20.4.3 Historical, Architectural, Archaeological, and Cultural Resources

As noted above, the only historic site that would be affected by the Proposed Action Alternative is a segment (5ME768.4) of the Little Book Cliff Railway bed that occurs on BLM managed land that would be transferred to the Airport Sponsor to enable the relocation of Runway 11/29. While the Proposed Action Alternative would not result in a permanent loss of the railway bed, long-term planned airport development would likely result in the removal of the rail bed. However, as is noted above, this cumulative impact is not substantial because of the proposed mitigation associated with the project – the Level II documentation of the segment that will preserve the history associated with the railway bed. Therefore, no substantial cumulative impacts are expected.

#### 4.20.4.4 Water Quality and Water Resources (Floodplains and Wetlands)

The Proposed Action Alternative would include construction of detention ponds, water quality ponds, and appropriately sized culverts to accommodate changes in drainage pattern associated with the project. In addition, separately, BLM recently evaluated storm water detention basins in the intermittent Leach Creek and Bosley Wash drainages to reduce area flooding. While other regional development would likely continue to increase the amount of impervious surface in the region, the cumulative effect of past, present, and future projects is not expected to generate substantial water quantity amounts.

As noted, the Proposed Action Alternative would require a modification in the Airport's NPDES permit, which would require the Airport to control storm water runoff, thus ensuring that no cumulative water quality impacts occur to any receiving water resources.

Therefore, the Proposed Action would not generate cumulative water quality or quantity impacts.

## 4.20.5 Resources Considered but Found not to be of Concern

### 4.20.5.1 Air Quality and Climate

Nationwide air quality has been adversely affected as a result of human activities and development. In the past three decades, application of Federal and State emissions regulations and significant technological improvements aimed at reducing effects on air quality and energy conservation have acted to counter emission increases caused by population and development growth.

A significant impact to air quality could occur if the project alternatives, when considered in combination with other past, present, or reasonably foreseeable actions, would exceed a NAAQS or would not conform to the State Implementation Plan (SIP). As is noted in the previous section entitled *Air Quality*, the activity levels of the Airport, combined with generally good local air quality, indicates that a quantitative air quality analysis was not warranted. Therefore, air quality effects were considered in a qualitative manner. During construction, the Proposed Action Alternative would generate construction emissions, and once complete, the project may result in a slight increase in aircraft taxiing emissions. The anticipated increases are not expected to be substantial given the relatively low level of aircraft operations. Because the area enjoys air quality that has met and is expected to continue to meet air quality standards, the slight increase that could occur due to the proposed actions would not be expected to result in exceedances of air quality standards. Other regional and airport projects in the future would also likely produce emissions. However, such emissions would occur in a different timeframe than those of the Proposed Action Alternative, and the project would not influence those emissions. Therefore, no project-related cumulative impacts are expected.

With respect to greenhouse gas emission, aviation activity at the Airport represents a very small amount of U.S. and global emissions, as noted previously in the section entitled *Air Quality*. Therefore, cumulative greenhouse gas emissions associated with the Proposed Action Alternative would not be expected to be substantial.

### 4.20.5.2 Construction Impacts

FAA Order 1050.1E (Change 1), Appendix A18 states: "Construction impacts alone are rarely significant pursuant to NEPA." That document also notes: "A significant impact would occur when the severity of construction impacts cannot be mitigated below FAA's threshold levels for the affected resource." A significant cumulative construction impact could therefore occur if the combined effects of construction activity associated with the Proposed Action Alternative, combined with the effects of other concurrent construction activities, would exceed the FAA threshold of significance for any resource category.

The construction projects might temporarily increase noise and dust related to construction. The construction contractor would implement control measures for the fugitive dust and dust suppression from construction-related activities. Construction of the Proposed Action Alternative would not involve a property on or eligible for the NPL nor any other hazardous sites. Further, the future projects identified that would occur at the Airport or in the environs are not known to have effects on hazardous material sites. Therefore, no substantial adverse cumulative impacts would occur.

#### 4.20.5.3 Energy Supply, Natural Resources, and Light Emissions

In general, energy consumption has increased nationwide over the past 20 years. The cumulative impact of the Proposed Action Alternative with other airport and regional projects are not expected to induce additional energy demands, but rather are consistent with the anticipated increases in energy projected region-wide due to increases in population and economic activity. In recent years, a renewed interest in energy conservation for electrical use and vehicle fuels has occurred with the increases in prices of electricity and gasoline. It is anticipated that as fuel costs remain high, financial incentives would exist for parties to reduce reliance on various forms of energy. No off-airport project-related light emissions are expected and thus are not expected to combine with other sources to create light emissions concerns. As a result, no substantial adverse cumulative effects on energy, natural resources, or light emissions are expected.

#### 4.20.5.4 Hazardous Materials and Solid Waste

A cumulative impact related to hazardous materials could occur if the project alternatives, when considered in combination with other past, present, or reasonably foreseeable actions, would:

- Involve a property on or eligible for the National Priorities List (NPL).
- Result in the sponsor having difficulty meeting applicable Local, State, or Federal laws and regulations on hazardous materials.
- Involve unresolved issues regarding hazardous materials.

Construction of the Proposed Action Alternative would not involve a property on or eligible for the NPL nor any other hazardous sites. Therefore, no substantial adverse cumulative impacts would occur.

#### 4.20.5.5 Noise and Compatible Land Use

Cumulative noise impacts would be significant if the combined effects of the proposed action coupled with other anticipated projects or actions resulted in a DNL 1.5 dBA increase in aircraft noise levels, compared to the No Action Alternative over a noise-sensitive land use where the DNL is at or above 65 DNL. As shown previously in the noise contour graphics, the only areas where the Proposed Action Alternative alters aircraft noise exposure in proximity to noise-sensitive uses are on the north and east sides of the Airport. Because the Proposed Action Alternative would not affect the number or type of aircraft operations, the existing and future aircraft operations are anticipated to be the same under the No Action and Proposed Action Alternatives. Due to the runway relocation under the Proposed Action Alternative, there are no homes or other incompatible land uses within the 65 DNL or greater noise contours; therefore, the Proposed Action Alternative would reduce aircraft noise exposure, benefiting the residential areas south of Interstate 70. No future projects are expected to alter aircraft noise exposure, and thus, the Proposed Action Alternative is not expected to produce significant cumulative noise exposure impacts.

Aircraft noise-related land use incompatibilities have decreased in recent years as a result of national efforts to reduce aircraft noise at the source. Existing incompatibilities are expected to decrease in the future due to source noise reductions, despite the anticipated population increases in the region. Increased population in the greater Grand Junction region would continue to place development pressures on the region, including the neighborhoods in the airport environs. The Proposed Action Alternative is not expected to result in land use incompatibilities, as the project is consistent with current zoning.

For the reasons noted above, the Proposed Action Alternative is not expected to produce substantial adverse cumulative noise and land use compatibility impacts.

#### 4.20.5.6 Social Impacts and Induced Socioeconomic Impacts

The evaluation of social and induced socioeconomic impacts includes the consideration of the effects associated with acquisition, surface transportation changes, environmental justice, and general socioeconomic conditions.

*4.20.5.6.1 Land Transfer:* The Proposed Action Alternative would not require the transfer of any developed area. Rather, the transfer includes undeveloped BLM managed land adjacent to the Airport. Therefore, no land transfer-related cumulative impacts are expected to the social or socioeconomic conditions. Impacts associated with recreational uses are discussed later relative to DOT Section 4(f) lands.

*4.20.5.6.2 Surface Transportation:* The Proposed Action Alternative would increase construction-related traffic in the area and would temporarily disrupt traffic during the relocation of 27 ¼ Road. This construction could also temporarily increase traffic congestion, and the people who use these roads may be temporarily delayed due to construction traffic. Because these roads currently support low levels of traffic, this potential for temporary delay would not produce substantial permanent traffic impacts on other routes or majorly alter the travel time for the users. No other known projects are expected to occur in the area that would cumulatively produce surface traffic congestion. No loss of access to areas would occur.

A slight vehicular traffic pattern change would occur with planned improvements to the terminal building, diverting employee traffic from Walker Field Drive to Eagle Drive and Blue Angle Lane, and the new administrative building parking lots. However, this change is minimal and is considered a positive change for the employees, because it would involve fixing the existing office space issues that result from the current constrained configuration in the terminal. As a result, no substantial adverse cumulative surface traffic impacts were identified.

*4.20.5.6.3 Environmental Justice:* As shown in *Chapter 3*, there are no known special populations in the airport vicinity that are considered protected under Executive Order 12898. Therefore, no substantial adverse cumulative effects to environmental justice populations would occur.

*4.20.5.6.4 Socioeconomic Impacts:* Past, present, and future socioeconomic effects have occurred in the airport environs as beneficial consequences of construction activities, increased employment, and further commercial development. Over the last few decades in general, the region has experienced economic growth, resulting in continuous construction activity, bringing contractors and economic activity to the area. However in the recent five years, due to a national economic downturn, economic growth has slowed. While the Proposed Action Alternative would not be expected to generate long-term increases in jobs or local economic activity, the short-term construction effects would be beneficial and could return some unemployed to work. However, in the long-term (after construction), no substantial cumulative effects would be expected. Other planned development either at the Airport or in the region is also expected to exert a positive socioeconomic effect. Therefore, in combination, a substantial adverse effect is not expected.

*Summary:* As noted in the prior subsections, the Proposed Action Alternative is not expected to produce effects that, when combined with other past, present, or reasonably foreseeable actions, would generate cumulative social or induced socioeconomic effects.

## 4.21 Mitigation, Avoidance and Minimization

As described in previous sections of this chapter, both adverse and beneficial impacts to the natural and social environment would result from implementing the Proposed Action Alternative. This section outlines the proposed process to avoid, reduce, and minimize those impacts to the environment. Mitigation measures and BMPs (in accordance with FAA AC 150/5370-10F) that could be employed to reduce impacts are identified and described.

### 4.21.1 Fish, Wildlife, and Plants

A Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin was initiated in January 1988. The Recovery Program serves as the reasonable and prudent alternative to avoid jeopardy and aid in recovery efforts for these endangered fishes resulting from water depletions from the Colorado River Basin. The PBO addresses internal and external BLM projects including impoundments, diversions, water wells, pipelines, and spring developments. The USFWS determined that projects that fit under the umbrella of the PBO would avoid the likelihood of jeopardy and/or adverse modification of critical habitat for depletion impacts to the Upper Colorado River Basin if they deplete relatively small amounts of water (less than 100 AF), and BLM makes a one-time per project contribution to the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program) in the amount equal to the average annual acre-feet depleted by each project. The PBO instructed BLM to make an annual payment to the National Fish and Wildlife Foundation (NFWF) to cover all BLM-authorized actions that result in water depletions. The airport transfer and associate ponds would deplete 0.26 AF annually. The depletion fee for this project is $5.02 ($19.32 x 0.26 AF). This project has been entered into the Grand Junction Field Office water depletion log which will be submitted to the Colorado State Office at the end of the Fiscal Year. The CSO is responsible for paying depletion fees based on the annual statewide total.

### 4.21.2 Historic Resources and DOT Section 4(f)

Two potential DOT Act Section 4(f) resources are located within the Study Area: a railroad grade that is potentially eligible for inclusion in the NRHP and the BLM recreation land used for off-road vehicles. No alternatives would avoid these resources entirely, and therefore, the Proposed Action Alternative results in direct impacts/uses. However, the Proposed Action Alternative was selected in order to minimize the amount of the recreational land impacted.

To mitigate the effects on the historic railroad grade, a Level II photo documentation was conducted. This photo documentation process documented the historic features of the resource prior to construction in accordance with the consultation letters and signed MOA in Appendix 12.

For the recreation land, mitigation measures include maintenance of access to the remaining BLM managed land open to recreation by relocating 27 ¼ Road and construction of a parking/staging area. The parking/staging area is to be constructed adjacent to 27 ¼ Road somewhere between the northern boundary of airport property and south of the BLM shooting range. The exact location, size and scope of this parking/staging area and the size and scope of any associated facilities are yet to be determined. These mitigation measures have been coordinated with users of the recreational land as documented in Appendix 8.

### 4.21.3 Waters of the U.S.

Ephemeral drainages serve to move water off the landscape during storm events. They are susceptible to severe erosion depending on the intensity and duration of the storm, and therefore, are very dynamic. While placing culverts in the drainages, or constructing detention features, may constitute an impact according to the Clean Water Act, the impact is negligible to aquatic organisms since permanent waters are not present. Impacts may accrue to mammals and birds that use the drainages for cover, food, roosting, and nesting. However, the reduction in wildlife would be a benefit for the Airport since it would reduce the potential for wildlife strikes. Bottomless culverts would be used under project features such as roads and berms. This can provide a minimum of habitat for aquatic organisms.

Mitigation would also include use of vertical mulching on the slopes of the existing drainages. Vertical mulching includes "planting" dead woody material in a vertical position and placing native rock in strategic locations in order to catch debris that is carried down during storm events. The accumulation of material behind the vertical mulch and rock would allow for microhabitat development suitable for plant growth on the drainage banks. Though desirable in many restoration situations where a desert climate does not prevail, direct seeding or planting on the slopes of these drainages is unsustainable due to the dynamic nature of these drainages. This approach to mitigation could take place on Leach Creek, Indian Wash, and ephemeral drainages E-2 and E-3.

## 4.22 Summary of Potential Impacts

The following table, *ENVIRONMENTAL CONSEQUENCES SUMMARY* includes a list of potential environmental impacts resulting from the implementation of the No Action and Proposed Action Alternatives.

Table 4-6
**ENVIRONMENTAL CONSEQUENCES SUMMARY**
*Grand Junction Regional Airport Environmental Assessment*

| | **No Action** | **Proposed Action** |
|---|---|---|
| Air Quality | Possible temporary increases due to construction activity for routine maintenance; no change in airport emissions. | Possible temporary increases in emissions due to construction activity; airport operational emissions are not expected to increase over the no action alternative. |
| Coastal Resources | No Impacts | No Impacts |
| Compatible Land Use | No changes over existing conditions. | Aircraft noise exposure effects on land use would not materially change. Transfer of BLM land required. |
| Construction Impacts | Temporary impacts during the construction phase; reduced through BMPs (in accordance with FAA AC 150/5370-10F). | There are no permanent construction impacts anticipated as a result of the Proposed Action. The construction impacts such as increases in emissions, traffic, or noise related to the Proposed Action are expected to be temporary. Traffic patterns might be temporarily altered due to the construction and relocation of 27 ¼ Road. Temporary construction impacts would be minimized by the construction contractor through the use of the BMPs. |
| DOT Section 4(f) Lands | No Impacts | Project effect to 188 acres of BLM recreational land. |
| Farmland | No Impacts | No Impacts |
| Fish, Wildlife and Plants | No Effect | No threatened or endangered species of plant, fish, or wildlife in the Study Area. Indirect fish impacts covered under PBO. |
| Floodplains | No Impacts | No Impacts, project design to include measures to reduce downstream flooding. |
| Hazardous Materials, Pollution Prevention, and Solid Waste | No Impacts | Minor increase in solid waste during construction |
| Historical, Architectural, Archeological, and Cultural Resources | No Impacts | Project effect to historic railroad grade segment 5ME768.4. Mitigated through Level II photo documentation survey. |

Table 4-6, continued
**ENVIRONMENTAL CONSEQUENCES SUMMARY**
*Grand Junction Regional Airport Environmental Assessment*

| | No Action | Proposed Action |
|---|---|---|
| Paleontological Resources | No Impacts | Moderate potential for impacting and/or discovery of currently unknown paleontological resources. |
| Light Emissions and Visual Impacts | No Impacts | There would be a slight change in the light environment around the Airport due to installation/relocation of necessary airport lighting such as runway lights, taxiway lights, and visual/approach lights. |
| Natural Resources and Energy Supply | No Impacts | No material change in energy or natural resource use. |
| Noise | Several homes are located within the 65 DNL noise contour to the south of I-70. | No homes or other incompatible land uses within the 65 DNL or grater noise contours. |
| Secondary (Induced) Impacts | No Impact | No Impact |
| Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks | No Impact | No Impact |
| Water Quality | No Impacts | The Proposed Action includes an extensive system of water quality ponds and detention ponds to maintain water quality and control drainage. This drainage system was designed in accordance with the City of Grand Junction's Stormwater Management Manual as well as the Urban Storm Drainage Criteria Manual. |
| Wetlands | None | Impacts to drainages and water features identified as Waters of the U.S. Impacts mitigated through proposed maintenance of drainages, natural bottom culverts and vertical mulching. |
| Wild and Scenic Rivers | No Impacts | No Impacts |

**Source**: Barnard Dunkelberg & Company, 2013.