

Section 4.21

Cumulative Impacts

This section updates the cumulative impacts analysis presented in the Final EIS. The updated analysis is based on a revised list of past, present, and reasonably foreseeable projects that are, or would be, located in the Legacy Parkway study area, and that could impact the same resources that would be affected by the proposed action.

4.21.1 Approach and Methodology

As described in the Final EIS, the Council on Environmental Quality (CEQ) defines a cumulative effect as:

The impact on the environment which results 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).

CEQ guidance recommends that a cumulative impact analysis focus on effects that can be evaluated meaningfully. This recommendation, along with guidance from the Environmental Protection Agency (EPA) in the publication *Consideration of Cumulative Impacts in EPA Review of NEPA Documents* (U.S. Environmental Protection Agency 1999), and guidance from CEQ in the publication *Considering Cumulative Effects under the National Environmental Policy Act* (Council on Environmental Quality 1997), was used to complete the cumulative impacts analysis for the Supplemental EIS, taking into consideration an updated list of past, present, and reasonably foreseeable projects.

The updated information presented in this section, including both the list of considered projects and the resource specific cumulative impact analysis, is based on the updated information presented in Chapter 4 of the Supplemental EIS. As such, the study area for each cumulative impact evaluation varies by resource area. The general study area boundary for the proposed action is defined in Section 4.0.1, *Study Area*, of this document; modifications to this boundary, if they were made, are described in the specific resource area sections in Chapter 4 and listed in Section 4.0.1.

4.21.2 Past, Present, and Reasonably Foreseeable Future Actions

This section provides an updated list of past, present, and reasonably foreseeable projects considered in the cumulative impacts analysis. The following highway projects were included in the cumulative impacts analysis.

- I-15 reconstruction from 600 South in Salt Lake City to 200 North in Kaysville (future);
- I-15 reconstruction from 31st Street to 2700 North in Ogden (future);
- The proposed Layton interchange on I-15 about 8 km (5 mi) north of Legacy Parkway (future);
- US-89 reconstruction (present);
- Mountain View Corridor on the west side of Salt Lake valley (future—EIS is currently in progress);
- Redwood Road improvements (future);
- Commuter rail (future—EIS currently in progress).

In addition, past, present, and proposed future land development throughout the study area has resulted in open land being converted to agricultural and urban uses. Past development includes conversion of open land to agricultural and urban uses in both Salt Lake and Davis Counties. Current developments include the new Foxboro residential development in North Salt Lake, and Farmington Ranches located west of the Davis County Fairgrounds. Based on the number of Davis County building permits issued since 1999, about 283 ha (700 ac) acres of land are being developed per year in Davis County (Sommerkorn pers. comm. c). A similar rate of land development is expected in the future.

4.21.3 Evaluation of Cumulative Impacts

Most of the potential cumulative impacts described in the following sections would be associated with growth that will occur in the region and the change in land use from open to developed land. This planned growth and change in land use will occur regardless of whether the proposed Legacy Parkway is implemented, although the types of land use and timing would be different, mainly around the two proposed Legacy Parkway interchanges. The growth and change in land use could cause cumulative impacts on land use, farmland, pedestrian and bicycle facilities, air quality, noise, wetlands, wildlife, habitat for threatened and endangered species, historical and archaeological resources, and visual resources as the area is developed.

Changes in the discussions provided in this section from that provided in the Final EIS are attributable either to the addition of reasonably foreseeable projects to the cumulative impacts analysis or to changes in the methodology used to determine direct and indirect impacts for specific resource topic areas, as described in the previous sections of Chapter 4. If the information presented relative to cumulative effects in the Final EIS has not changed, a statement to that effect is presented in the discussion below.

4.21.3.1 Land Use

As described in Section 4.1.2, the study area for land use extends to the north to account for potential growth inducement impacts in northern Davis and Weber Counties. Section 4.1.3 of this document concluded that the Shared Solution could contribute to the conversion of land to development uses by changing the land use around the two proposed Legacy Parkway interchanges to commercial use, but that it would not in and of itself induce growth north of the study area.

The combined projects in the Shared Solution, which include the proposed Legacy Parkway, I-15 north reconstruction (widening), and commuter rail, could induce growth and development in northern Davis County and in Weber County¹. Section 4.1.4 of the Final EIS disclosed that, although Legacy Parkway would greatly improve north-south mobility in the North Corridor, the major portion of this improvement in mobility would be attributable to the combined expansion of I-15 and the construction of Legacy Parkway. The cumulative effect of commuter rail was not assessed in the Final EIS because commuter rail was not a reasonably foreseeable project and was not a component of the Shared Solution or the WFRC long range plan at the time of publication of the Final EIS, even though the Final EIS included a transit component. The addition of commuter rail to the long range plan reinforces the conclusion in the Final EIS that the accessibility provided to these areas by Legacy Parkway, I-15, and commuter rail could promote accelerated development of residential growth in Davis and Weber Counties, provided other key characteristics of the area are favorable for such growth (e.g., neighborhood conditions [schools, crime], price and economics, air quality, noise, etc.). Transit-oriented development (TOD) associated with the commuter rail portion of the Shared Solution may occur near the rail stations in a manner consistent with planned development near the proposed Mildale and Sandy stations in Salt Lake City. However, it should be noted that TOD would be attributable to the Shared Solution rather than Legacy Parkway in and of itself.

With the exception of the project right-of-way and Legacy Nature Preserve, local jurisdictions interviewed for both the Final EIS and the Supplemental EIS stated that the level of development in the study area is expected to be the same, regardless of the mobility improvements made and even though the improvements offered under the Shared Solution could affect the short-term location and timing of development in the study area and areas to the north.

4.21.3.2 Farmland

During the 1990s, Utah's loss of farmland was about 8,000 ha (20,000 ac) per year (Utah Department of Agriculture and Food 2000). The amount of farmland in Utah has continued to decline in the study area as agricultural areas within city boundaries have been converted to urban uses. Approximately 263 ha (700 ac) of land are being developed per year in Davis County, much of which is farmland (Sommerkorn pers. comm. b). Further, the Utah Division of Water Resources' Water-Related Land Use Data Inventory Map dated 2003 shows about 1,073 ha (2,652 ac) of farmland in the study area, while the Final EIS showed 1,582 ha (3,917 ac) in the study area in 2000.²

These historic cumulative impacts on farmland are attributable to development and will probably continue to occur given the current conversion rate of land to urban uses in the study area. Since Legacy Parkway would affect between 97 and 207 ha (243 and 508 ac) of farmland, depending on the build alternative, it would contribute to the cumulative loss of farmland. However, it is likely that most of this farmland loss would be due to planned and ongoing development and would occur regardless of whether Legacy Parkway is implemented.

¹ The Shared Solution concept identifies a multi-modal solution to transportation deficiencies both in and around the study area. The concept did not include commuter rail at the time the Final EIS was published. A complete description of the Shared Solution and its evolution since publication of the Final EIS is contained in Chapter 1.

² See Section 4.2, *Farmland*, of the Supplemental EIS. Some farmland acreage differences between the Supplemental EIS and Final EIS are attributable to changes in the way farmland was categorized in each document.

4.21.3.3 Social

As described in the Final EIS, none of the social impacts associated with the past, present, and reasonably foreseeable projects would occur in the same area or on the same groups as those affected by the proposed action, except that many groups (e.g., minority and low income populations) would more generally benefit by improvements in mobility. This discussion has not changed since publication of the Final EIS.

4.21.3.4 Relocations

Section 4.3 of this document describes the relocations that would be required if any build alternative is constructed. As stated in the Final EIS, other projects considered in this section, including the I-15 reconstruction projects, would also require some relocation of residences and businesses. Residential units affected by highway projects qualify for relocation assistance, and businesses and farms affected qualify for business or farm displacement assistance. This assistance may not be available if similar displacements occur as a result of other types of development.

This discussion has not changed since publication of the Final EIS.

4.21.3.5 Economics

As described in the Final EIS, the economic impacts associated with construction of Legacy Parkway and other projects considered in this section would be temporary and would generally occur at different times. They would represent only a small portion of the overall economics in the study area (see Section 4.5.2), and therefore would only result in a minor cumulative impact. This discussion has not changed since publication of the Final EIS.

4.21.3.6 Joint Development

As described in the Final EIS, the main joint development opportunity made possible by Legacy Parkway would be associated with the multi-use trail that would run adjacent to the proposed highway. Ongoing development in the corridor, including the Foxboro development and Farmington Ranches, could provide additional opportunities for recreational development in conjunction with the Legacy Parkway Trail. There would be no other joint development cumulative impacts.

4.21.3.7 Pedestrian and Bicycle Considerations

As described in the Final EIS, the main pedestrian and bicyclist activities made possible by the Legacy Parkway project would be those provided by the multi-use trail. This trail would benefit the pedestrian and bicycle trail systems spanning Davis and Salt Lake Counties (see Figure 4.6-1). The trail is reflected in the general plans of several cities in the study area, and it has been integrated into the proposed trail systems for several proposed and existing residential developments near the proposed highway (see Section 4.7).

Construction of commuter rail would also improve pedestrian access in the study area by generally improving the walkability of transportation options in the study area. Although improvements to I-15 would not specifically contribute to pedestrian and bicycle opportunities in the study area, the combined

effect of commuter rail and the proposed action would result in a beneficial cumulative impact on pedestrian and bicycle opportunities in the study area.

4.21.3.8 Air Quality

As described in the Final EIS, air quality would improve over future No-Build conditions with implementation of the Legacy Parkway project and other projects considered in this section because the projects are designed to reduce congestion and travel times, facilitating compliance with air quality standards. The predominant air quality factors influencing air quality in the study area have historically been and will likely continue to be the stationary and mobile source emissions associated with the continued development, all of which would occur with or without implementation of the Legacy Parkway project. It should also be noted that conformity with state air quality goals requires a regional and cumulative analysis, which is discussed in Section 4.8, *Air Quality*.

4.21.3.9 Noise

Construction of any proposed build alternative would increase noise levels in the noise study area (i.e., within 457 m (1,500 ft) of the proposed build alternatives) from noise levels typical of a rural area to those associated with the new highway (Table 4.21-1). Existing noise levels in the study area, which represent the baseline for the cumulative impact analysis, range from about 39 dBA (undeveloped areas) to 67 dBA (next to I-215). Potential cumulative impacts from noise would be associated with the travel-related noise from the highway projects described in this section, including the proposed action, as well as from ongoing and planned residential, commercial, and industrial development in and adjacent to the study area.

Table 4.21-1 Typical Noise Levels in Rural and Urban Areas in the U.S.

Area	Typical Range of dBA	Average Census Tract Population Density (people/square mile)
Wilderness and rural	16–35	Zero to little population
Quiet suburban residential	48–52	630
Normal suburban residential	53–57	2,000
Urban residential	58–62	6,300
Noisy urban residential	63–67	20,000
Very noisy urban residential/downtown city	68–75	63,000

Source: Cooper Engineering 1985; Canter 1996

It is likely that, by 2020, the study area will be developed to include more residential, commercial, and industrial land uses, with or without implementation of the Legacy Parkway project (see Section 4.1, *Land Use*, of this document). In addition, as roadways and municipal support systems are developed to support these changes in land uses, it is likely that noise levels would continue to increase, changing from those of a suburban residential area to those of an urban residential area. As stated above, these cumulative noise impacts would likely occur with or without the proposed action.

It should be noted that the northern portion of Legacy Parkway would parallel I-15 just south of the US-89/I-15 interchange. Projected traffic on Legacy Parkway in combination with traffic on US-89 and I-15, as well as operation of commuter rail, would result in a cumulative noise impact on the surrounding area. Operation of the highways alone would result in noise levels approximating an urban residential/downtown city environment. Noise levels would increase when a commuter rail train is using a track in the area but would decrease to between 68 dBA and 75 dBA after the train passes.

4.21.3.10 Water Quality

As described in the Final EIS, the primary effect on water quality from the Legacy Parkway project would be from pollutants and sediments contained in stormwater runoff from impervious surfaces and construction sites. Since development, including construction of additional impervious surfaces, would likely occur in the study area with or without the proposed action, Legacy Parkway would have a relatively minor cumulative impact on water quality, taking into consideration potential build out conditions without the project. In addition, the Legacy Parkway project, as well as the other highway projects assessed in this section, would use extensive best management practices during construction to minimize pollutant and sediment concentrations in stormwater runoff.

Deicing practices associated with Legacy Parkway, as well as other roadway improvements considered in this section, could affect the salinity of runoff in the study area. Since much of the soil and water in the study area is already highly saline because it is within the floodplain of Great Salt Lake, it is unlikely that temporary acute increases in salinity associated with deicing practices would have a long-term impact on water resources in the study area. Both the Legacy Nature Preserve and the vegetated filter strips associated with the highway would minimize the cumulative impact of this practice.

This discussion has not changed since publication of the Final EIS.

4.21.3.11 Wetlands

As described in Sections 4.12, *Wetlands*, and 4.13, *Wildlife*, of this document, the loss of wetland habitat in the study area has been an ongoing process that began with settlement and development of agriculture in the nineteenth century and continues under current conditions. For the wetlands analysis, the Supplemental EIS assumed that future development could affect all remaining uplands in the wetlands study area, resulting in adverse indirect impacts on remaining wetlands. The wildlife analysis, using a slightly different characterization of habitats (see Section 4.12.2.2, *Wetland Cover Types*), concluded that there was a historic loss of approximately 58 percent of the wetland/riparian habitat in the modified project area (Jones & Stokes 2004).

Loss of wetlands continues; wetland fill authorized in Salt Lake and Davis Counties between 1992 and 2003 averaged over 12 ha (30 ac) per year. Future loss of wetlands and wetland functions appears likely, with or without implementation of any of the proposed build alternatives, given the historic trend and future development pressure within the study area. Under the future conditions No-Build Alternative, even if no wetland fill were to occur, wetland functions in the study area would decrease over 20 percent due to planned development of adjacent upland habitat.

The Legacy Parkway project would contribute to the cumulative loss of wetlands and wetland functions in the study area. The impact is substantial both because of the timing of the impact (after many wetlands have already been filled or lost wetland functions) and the magnitude of the impact, compared with those of other current projects.

4.21.3.12 Wildlife

See Section 4.13, *Wildlife*, for a discussion of cumulative impacts on wildlife and wildlife habitat.

4.21.3.13 Floodplains

As described in Section 4.14, floodplain impacts were assessed for both the 100-year floodplain associated with Great Salt Lake and the 100-year floodplains of the streams that the proposed highway would cross within the study area. Cumulative impacts on stream floodplains from past, present, and reasonably foreseeable projects are limited because project proponents are generally required to maintain the existing flood characteristics (i.e., flood elevation and boundary) of rivers and streams affected by a project.

For the Great Salt Lake floodplain, most of the proposed build alignments would traverse the eastern edge of the floodplain, as delineated by the Corps and FEMA (see Section 4.14). Where the Great Salt Lake floodplain lies on the eastern side of Legacy Parkway, the highway design would allow flood waters to pass to the west side of the highway through equalization culverts to minimize impacts on the floodplain elevation or boundary. Similarly, the I-15 reconstruction projects would require a slight encroachment on the Great Salt Lake floodplain north of Chase Lane in Centerville, and future development could encroach on the floodplain, although the nature and location of such encroachment are not known at this time.

4.21.3.14 Threatened and Endangered Species

As described in the Final EIS, Legacy Parkway, combined with other highway projects and development in the study area, could have a cumulative effect on threatened, endangered, and state species of special concern in the study area. An updated list of federal threatened and endangered species and state species of special concern that could occur in the study area was provided by USFWS and the Utah Division of Fish and Wildlife, and is summarized in Section 4.15, *Threatened and Endangered Species*, of this document.

The bald eagle (*Haliaeetus leucocephalus*) is the only federally listed species that could be affected by the proposed action. The commuter rail draft EIS (Utah Transit Authority 2004) and the I-15 draft EIS (Federal Highway Administration and Utah Department of Transportation, 1998) both state that impacts on federally listed species, including the bald eagle, and state species of special concern are not expected. Legacy Parkway, as well as some private developments proposed in the study area, could contribute to cumulative impacts on threatened and endangered species through loss of habitat and an increase in human disturbances.

4.21.3.15 Historic and Archaeological Resources

Past regional transportation projects, future regional transportation project (including Legacy Parkway), and current and planned development, have affected and will continue to affect historic and archaeological resources in the study area that have various degrees of integrity and significance (see Section 4.16.2). The Final EIS recognized the cumulative effects on cultural resources of the reconstruction of I-15 and future development, along with the impacts of Legacy Parkway. The other reasonably foreseeable actions will have additional cumulative effects on historic and archaeological resources.

4.21.3.16 Hazardous Waste Sites

As stated in the Final EIS, there would be no cumulative effects on hazardous waste sites because any environmental effects would be mitigated. There has been no change in this discussion since publication of the Final EIS.

4.21.3.17 Visual Resources

As described in the Final EIS, the majority of the cumulative visual impacts in the study area have been caused by land development and the infrastructure associated with it, including streets, highways, railroads, and power lines. The existing visual character of the study area is already disturbed by the presence of pavement, cut-and-fill slopes, grade separations, lighting, roadway hardware, and drainages structures associated with I-15, I-215, and US-89, as well as other local roadways in the vicinity (see Section 4.18, *Visual Resources*). Several new developments in the study area, including the Foxboro development and Farmington Ranches, have been completed since publication of the Final EIS, further changing the visual environment and making it more urban.

The proposed Legacy Parkway would result in an additional amount of currently undeveloped land being converted to roadway use. This conversion and any indirect development associated with the new roadway would contribute to the historic, cumulative visual impact associated with changing the visual nature of the study area from rural to urban uses.

Short-Term Uses Versus Long-Term Productivity

The short-term use of the environment versus preserving its long-term productivity relates to converting the natural productivity of the land to some developed use. The natural productivity of the land is considered a renewable use of the land; developed use generally has a relatively short economic lifespan and is regarded as a short-term use.

As described in the Final EIS, all the proposed build alternatives would have an impact on farmland, wetlands, and other wildlife habitats in the study area. No changes to the consistency of the proposed action's short-term uses of the environment with local land use and transportation plans or maintenance and enhancement of long-term productivity, as defined by local governments, have occurred since publication of the Final EIS. However, since publication of the Final EIS, construction activities associated with Alternative D (Final EIS Preferred Alternative) and development unrelated to the proposed action have affected farmland and wetland and upland habitats in the project study area. See Sections 4.2, 4.12, 4.13, and 4.20 for a complete description of farmland impacts, impacts on wetland and wildlife habitats, and construction-related impacts that have occurred since publication of the Final EIS.

Irreversible and Irretrievable Commitment of Resources

Implementation of the proposed action since publication of the Final EIS (i.e., project construction prior to the court injunction) involved the commitment of a range of natural, physical, human, and fiscal resources. Land affected in the construction of Legacy Parkway was committed to use as a highway; however, it could be converted to another use should a greater need arise. As a result of the initial project construction, fossil fuels, labor, highway construction materials, and funding were irretrievably committed to the project. See Section 4.20, *Construction*, for a complete description of construction impacts that have occurred since publication of the Final EIS.

As stated in the Final EIS, the commitment of the resources is based on the premise that residents in the immediate area, the region, and the State of Utah would benefit by the improved transportation system, which would outweigh the commitment of these resources. If an alternative on another alignment is selected or if the No-Build Alternative is selected, wetland and other natural habitat resources that were removed by grading and other construction activities would be returned to a natural state. In addition, property acquired for the proposed action would be disposed of.

Table 4.24-1 Mitigation Summary

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
Land Use		
Cities and Counties	(None)	No change.
Consistency with Plans and Policies	(None)	No change.
Growth within and beyond the North Corridor	(None)	No change.
Farmland		
All Farmland	<i>All Build Alternatives.</i> Owners of farmland directly within the Legacy Parkway right-of-way would be compensated according to requirements of the URAA and other state and federal guidelines. In the case of indirect impacts, the Utah Department of Transportation (UDOT) would determine whether (based on the comparative costs) access is restored or the remainder of the farmland is purchased.	No change. These mitigation measures do not replace any farmland taken by the project.
Social		
Socially Disadvantaged Groups and Environmental Justice Populations	<i>Alternative A and the PA.</i> Business displacement assistance would be provided to Commercial Coatings pursuant, to the eligibility and other requirements of the Uniform Relocation Assistance Act (URAA).	No change.
Neighborhood and Community Cohesion	(None)	No change.
Travel Patterns and Accessibility	(None)	No change.

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
Public Facilities	<i>All Build Alternatives.</i> The impacts on public facilities would be mitigated by providing compensation for the real property taken or damaged or by functionally replacing the publicly owned real property with another facility that would provide an equivalent use.	No change.
Public Services and Utilities	The relocation of utilities would cause possible impacts on wetlands, farmlands, and native vegetation. Generally, these impacts would be temporary in nature. Disturbed areas from pipeline relocations would be backfilled and restored to their natural state.	Mitigation measures for impacts on wetlands are described in Section 4.12, <i>Wetlands</i> , and in Section 4.2, <i>Farmlands</i> , for farmlands.
Recreation Resources	<i>All Build Alternatives.</i> Access to the southern entrance of the Farmington Bay Waterfowl Management Area (FBWMA) and to the Bountiful City Pond would be maintained by a frontage road and a non-motorized overpass at Page's Lane. Mitigation for impacts of all build alternatives, except Alternative A on the Bountiful City Pond, would be mitigated by replacing the lands lost and by reshaping the shoreline to provide an equivalent area for users of the pond. <i>Alternatives B and C.</i> The impact on FBWMA's eastern entrance and parking lot would be mitigated by providing a frontage road along the western side of Legacy Parkway from Sheep Road to the eastern entrance. The parking lot and other land would be replaced with land of at least equal value and usefulness.	<i>All Build Alternatives.</i> The non-motorized vehicle overpass at Page's Lane has been eliminated. As a result, motorized vehicles would access the FBWMA by taking the 500 South exit off Legacy Parkway and the corresponding frontage road. Similarly, motorized vehicles would access Bountiful City Pond by taking the 500 South exit and the frontage road along the west side of Legacy Parkway. Non-motorized access would be provided to both the FBWMA and the Bountiful City Pond by the frontage roads that run along the west side of the proposed alignments. Access to the frontage roads would be provided at 500 South.
Relocations		
Residential	<i>All Build Alternatives.</i> Relocation assistance would be provided to the affected households, pursuant to the eligibility and other requirements of the URAA.	No change.
Business	<i>All Build Alternatives.</i> Business relocation and re-establishment assistance would be provided to the affected businesses, pursuant to the eligibility and other requirements of the URAA.	No change.

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
Farm and Horse Paddocks	<i>All Build Alternatives.</i> Assistance would be provided to the affected farmstead and horse paddock operations, pursuant to the eligibility and other requirements of the URAA.	No change.
Economic		
Regional Economic Impacts	(None)	No change.
Local Economic and Community Impacts	(None)	No change.
Joint Development	The 100-m (328-ft) highway right-of-way proposed for this project includes room for the trail. Impacts on wetlands, farmlands, and wildlife from the trail would be included in the mitigation for the overall project.	No change other than change in right-of-way width to 95 m (312 ft).
Considerations Relating to Pedestrians and Bicyclists	(None)	No change.
Air Quality	(None)	Non-tailpipe PM10 emissions would be minimized through street sweeping, minimal use of sand for snow and ice control (see Section 4.10, <i>Water Quality</i>), and other general maintenance measures performed by UDOT. See Section 4.20, <i>Construction Impacts</i> , for a discussion of mitigation for construction-related air quality impacts.

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
Noise	<p>The extent of the noise impacts would be determined during the design phase, and UDOT's current noise abatement policy would be applied.</p> <p>Preliminary analysis shows construction of noise barriers would be feasible in the following areas:</p> <p><i>Noise Abatement for Alternative A</i></p> <p>Noise barriers would be feasible west of 1100 West and 800 West in Davis County and West Bountiful City.</p> <p><i>Noise Abatement for Alternative B</i></p> <p>Noise barriers would be feasible in south Kaysville for 25 residences along Sheppard Lane near the northern project terminus.</p> <p><i>Noise Abatement for Alternative C</i></p> <p>Noise barriers would be feasible between 1200 north and 2200 north in West Bountiful.</p> <p><i>Noise Abatement for the Preferred Alternative</i></p> <p>Noise barriers would be feasible between 1200 north and 2350 north in West Bountiful.</p>	<p>It should be noted that the potential locations for noise barriers evaluated in this document are different than those evaluated in the Final EIS. The differences are attributable to updated noise monitoring data; use of a different traffic noise model (TNM instead of the STAMINA model used for the Final EIS), which takes into consideration terrain features not available with the STAMINA model; more sophisticated noise transmission algorithms; and the shielding effects of intervening rows of residences.</p> <p><i>Noise Abatement for Alternative A</i></p> <p>None.</p> <p><i>Noise Abatement for Alternative B</i></p> <p>The Alternative B alignment would pass within 152 m (500 ft) of residences near the southern terminus of the project, east of 2200 West (near ML-2). At this location and under this alternative, a noise barrier 377 m (1,237 ft) long and 5 m (16.4 ft) high would provide an acoustic benefit to five residences. The cost per dwelling of \$13,527 would be less than the abatement limit (\$22,600) per affected residence. Therefore, a noise barrier at this location would be reasonable and feasible according to UDOT's Noise Abatement Policy.</p>

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
		<p><i>Noise Abatement for Alternative C</i></p> <p>The Alternative C alignment would pass within 152 m (500 ft) of the residences near ML-7 at 1200 North. At this location and under this alternative, a noise barrier 225 m (738 ft) long and 5 m (16.4 ft) high would provide an acoustic benefit to four residences. The cost per dwelling of \$10,091 would be less than the abatement limit (\$22,600 per affected residence). Therefore, a noise barrier at this location would be reasonable and feasible according to UDOT's Noise Abatement Policy.</p> <p><i>Noise Abatement for Alternative D</i></p> <p>None.</p> <p><i>Noise Abatement for Alternative E</i></p> <p>None.</p>
Water Quality		
Surface Water and Groundwater from Parkway Operations	<p><i>All Build Alternatives.</i> Through coordination with the U.S. Army Corps of Engineers (Corps), the Utah Department of Environmental Quality (UDEQ), and the Utah Department of Transportation (UDOT), mitigation requirements were selected that would provide acceptable water quality protection, once Legacy Parkway is operational. The following mitigation would be provided:</p>	No change.
	<p><i>Minimization of Concentrated Discharges.</i> Legacy Parkway would be constructed without curbs so that stormwater runoff would sheetflow off the highway. Stormwater would be concentrated only where necessary (that is, to collect drainage on overpasses). This concentrated stormwater would not be discharged directly into wetlands or into streams with quantitative water quality standards. Instead, concentrated discharges would be routed over vegetated buffer strips (grassy median) or dissipated back to sheetflow.</p>	No change.

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
	<p><i>Vegetated Filter Strips.</i> Roadway design would include vegetated filter strips (grassy median) to improve the quality of water runoff from the highway, as recommended by the Corps and UDEQ. All cleared areas within the right-of-way except the paved surface would be vegetated. The vegetation would filter suspended particles, metals, oils, and greases from the runoff.</p> <p><i>Equalization Culverts.</i> Runoff on the upstream side of the road would gradually flow to the toe of the roadway slope and/or the berm, then cross under the road through small equalization culverts. The culverts would be positioned to maintain sheetflow conditions across the study area to the extent practical and, at a minimum, would limit culverted discharges to less than 0.14 cu m (5 cu ft) per second. For costing purposes, it is assumed that there would be a culvert every 150 m (492 ft).</p>	<p><i>Vegetated Filter Strips.</i> The narrower right-of-way would reduce the width of the vegetated filter strips from 20 m (66 ft) to 15 m (50 ft). This reduction in the width of the vegetated filter strips would not affect the ability of the vegetated filter strips to treat water quality to the standards required in the CWA Section 401 water quality certification</p> <p><i>Surface Water Conveyance.</i> The equalization culverts referred to in the FEIS that were intended to allow free movement of water in either direction, maintain sheetflow conditions to the extent practical, and minimize concentrated discharges for water quality and wetland mitigation, are now referred to as surface water conveyances.</p> <p>Although the Final EIS may have implied that surface water conveyances would be installed at regular intervals along the project alignment, surface water conveyances would actually be installed in areas where an existing hydrologic connection would be cut off by the proposed highway. The surface water conveyances would be designed to pass surface water through the road in the direction or directions of its existing flow. The conveyances could be manifest as many types of drainage structures, including culverts, series of small culverts, French drains, corrugated strip drains, synthetic drainage nets, and gravel layers.</p> <p><i>Floodplain Equalization Culverts.</i> Based on more specific hydraulic design information, UDOT and the Corps determined that equalization culverts for the purpose of equalizing floodwaters across the road would only be needed within the Corps floodplain boundary, rather than along entire length of the proposed roadway.</p>

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
Groundwater Rights	<p><i>Scour and Erosion Protection.</i> If warranted, scour protection to mitigate downstream erosion would be provided at all culvert outlets and stream crossings, based on a case-by-case analysis to determine outlet velocities. Velocities would be calculated for 50-year storm flows except at stream crossings, where the 100-year storm flow would be used.</p> <p>The following criteria would apply:</p> <p>For velocities greater than 1.2 m (4 ft) per second but less than 4.6 m (15 ft) per second, loose riprap would be provided, based on UDOT design guidelines (UDOT 2004).</p> <p>For velocities greater than 4.6 m (15 ft) per second, an energy dissipater would be provided.</p>	<p><i>Groundwater Conveyance.</i> Groundwater conveyance structures would be installed to mitigate the potential impact of the road embankment consolidating underlying soils and impeding groundwater flows. Groundwater conveyances would be installed in areas where fill heights exceed approximately 3 m (10 ft), and would extend from the eastern fill limit to the western fill limit.</p> <p>No change.</p>
Groundwater Rights	<p>UDOT would either purchase the groundwater right from the owner or pay for a transfer of the right. The determination would be made on a case-by-case basis.</p>	<p>No change.</p>
Permits	(None)	<p>No change.</p>

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
Wetlands		
Wetlands (Direct and Indirect)	<p><i>All Build Alternatives.</i> The Legacy Nature Preserve will mitigate the wetland impacts of all build alternatives. Restoration is included within the Preserve.</p> <p>The Legacy Nature Preserve was initially formulated for each build alternative using a mitigation ratio of 10 to 1. The Legacy Nature Preserve would be about 440 ha (1,088 ac) for Alternative A, 856 ha (2,116 ac) for Alternative B, 621 ha (1,535 ac) for Alternative C, and 506 ha (1,251 ac) for the Preferred Alternative.</p> <p>An additional 128 ha (317 ac) of mitigation lands proximate to the FBWMA were added to the Legacy Nature Preserve associated with Alternative D (Final EIS Preferred Alternative) at the request of USFWS.</p> <p>Restoration measures described in the Final EIS that have been updated are described in the Legacy Nature Preserve Addendum to the Wetland Mitigation Plan (April 2001).</p>	<p>The extent of the Legacy Nature Preserve has been modified since publication of the Final EIS. In addition to the 126 ha (317 ac) of mitigation lands added at the request of USFWS, four additional parcels totaling 217 ha (530 ac) were added to the Legacy Nature Preserve to address EPA’s concerns regarding the adequacy of the mitigation package for Alternative D. The incorporation of these additional parcels directly into the mitigation packages for all the other proposed build alternatives would result in the preservation of the following.</p> <ul style="list-style-type: none"> • An additional 193 ha (478 ac) of wetlands (315 ha [778 ac] of wetlands in total) under Alternative A. • An additional 115 ha (285 ac) of wetlands (348 ha [861] of wetlands in total) under Alternative B. • An additional 106 ha (261 ac) of wetlands (323 ha [796 ac] of wetlands in total) under Alternative C. • An additional 180 ha (446 ac) (315 ha [778 ac] of wetlands in total) under Alternative E. <p>Inclusion of these additional mitigation lands equally under all the build alternatives would be discussed with the regulatory agencies upon selection of a preferred alternative to determine the adequacy of the mitigation package.</p> <p>As of June 2004, mitigation that has already been completed within the Legacy Nature Preserve includes the following.</p> <ul style="list-style-type: none"> • Acquisition of 788 ha (1,948 ac) of land associated with the Legacy Nature Preserve. • Installation of 9.7 km (6 mi) of perimeter fencing and 549 m (1,800 ft) of silt fence. • Removal of 3048 m (10,000 ft) of internal fences.

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
		<ul style="list-style-type: none"> • Removal of one road, including restoration of the area to original contours and reseeding. • Filling of one abandoned and unused drainage ditch in the southern section of the Legacy Nature Preserve. • Removal of 905 tires, 3,614 dump truck loads of trash, five buildings, and five car frames. • Regarding of large areas that were disturbed by uncontrolled access and illegal dumping. • Revegetation of disturbed areas. • Relocation of a Davis County sewer line out of the Legacy Nature Preserve. • Relocation of two QUESTAR gas lines out of the Legacy Nature Preserve relocation. • Installation of a water control structure diverting water from the Jordan River into the floodplain and a water control structure regulating water returning to the Jordan River. • Development of an active water management plan for the 121 ha (300 ac) Jordan River Floodplain in the southern portion of the Legacy Nature Preserve. • Re-creation of the old Jordan River oxbow and channel, called the Mini Jordan River, totaling 2.4 km (1.5 mi). • Creation of an island called Lord Byron’s Island within the Mini Jordan River. • Construction of 390 m (1,280 ft) of meander channel. • Construction of a storm drain to handle stormwater from North Salt Lake. • Establishment of artesian wells and subsequent creation of approximately 4.9 ha (12 ac) of groundwater slope wetlands.

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
Wildlife		
Wildlife (Direct and Indirect) Acreage	<i>All Build Alternatives.</i> The restoration measures for the Legacy Nature Preserve (see Wetland Mitigation Summary above) would also benefit wildlife. The Legacy Nature Preserve would provide wetland and upland habitat for a wide variety of species. An additional 126 ha (317 ac) of mitigation lands proximate to the FBWMA were added to the Legacy Nature Preserve associated with Alternative D (Final EIS Preferred Alternative), at the request of USFWS, to offset wildlife impacts not captured by the wetland functional assessment models.	<p>The extent of the Legacy Nature Preserve has been modified since publication of the Final EIS. In addition to the 126 ha (317 ac) of mitigation lands added at the request of USFWS, four additional parcels totaling 217 ha (530 ac) were added to the Legacy Nature Preserve to address EPA’s concerns regarding the adequacy of the wetland mitigation package for Alternative D. As a result, the total mitigation area for the Legacy Nature Preserve proposed by UDOT and approved by the Corps and FHWA is 849 ha (2,098 ac).</p> <p>The extent of the original Legacy Nature Preserve and additional parcels was based on implementation of Alternative D (Final EIS Preferred Alternative). Although this mitigation package would apply in full to Alternative E (despite the narrower right-of-way width), modifications to the Legacy Nature Preserve boundary would be considered in consultation with the regulatory agencies to determine the adequacy of the mitigation package, and if the additional lands added after publication of the Final EIS should be incorporated in full or in part. UDOT will monitor noise and survey for representative breeding migratory bird species in the Legacy Nature Preserve during spring 2005 and after completion of the proposed action to determine the impacts of noise.</p> <p>Based on the analysis presented in Section 4.13, <i>Wildlife</i>, the Legacy Nature Preserve would mitigate the direct loss of wildlife habitat, habitat fragmentation, and noise impacts.</p>
Wildlife (Direct and Indirect) Streams	<i>All Build Alternatives.</i> The Jordan River would be bridged, and natural stream substrate culverts would be used along perennial streams (Farmington Creek) and other large drainages requiring culverts larger than 1.2 m (4 ft) in diameter to facilitate movement of fish and other aquatic wildlife. The culverts would be placed at an elevation that would retain natural stream substrates and have the greatest value in maintaining natural conditions.	No change.

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
Wildlife (Direct and Indirect) Vegetation	The right-of-way would be landscaped with natural vegetation.	No change.
Wildlife (Direct and Indirect) Equalization Culverts	Culverts would be installed to allow floodwater during the Great Salt Lake's high-water years to pass beneath the roadway and supply wildlife habitat east of the alignment rights-of-way.	No change.
Wildlife – Birds Raptors	<i>All Build Alternatives.</i> Raptors. Preconstruction surveys of known raptor nests would be conducted within the Legacy Parkway corridor by a qualified wildlife biologist to determine which nests are active. If nests are determined active, coordination with the USFWS and UDWR would occur and appropriate actions under the Migratory Bird Treaty Act (MBTA) and USFWS Raptor Guidelines (Romin and Muck 1999) would be followed to ensure the least amount of impact on the species.	No change. (See threatened and endangered species)
Peregrine Falcon	Peregrine Falcon. UDOT will prevent construction activities from impacting nesting peregrine falcons by implementing the following measures:	No change. (See threatened and endangered species)
Peregrine Falcon Construction Activities	UDOT shall require a qualified wildlife biologist to monitor the nest for any activities occurring within 1.6 km (1 mi) of the nest from the courtship through post-fledgling dependency periods (about a 126-day period from February 1 through August 31).	No change. (See threatened and endangered species)
Peregrine Falcon Construction Activities	If, during monitoring, the peregrine falcons appear disturbed in any manner, construction activities shall immediately cease and UDOT shall immediately consult with USFWS before continuing construction activities.	No change. (See threatened and endangered species)
Peregrine Falcon Human Use	Human use of project lands shall be controlled to prevent any take (particularly harm and harassment) of nesting peregrine falcons and/or their young.	No change. (See threatened and endangered species)
Peregrine Falcon Human Use Project Employees	Project employees shall be informed of the presence of the peregrine falcon and the need to minimize disturbance during nesting.	No change. (See threatened and endangered species)

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
Peregrine Falcon Human Use Recreation	No recreational trail facilities that encourage extended human use of the area (for example, picnic tables and rest areas) shall be constructed on project lands within 1.6 km (1 mi) of the nest and roost sites.	No change. (See threatened and endangered species) Additionally, no animals, including livestock and/or pets, will be allowed on mitigation properties.
Peregrine Falcon Human Use Right- of-Way Fences	Right-of-way fences shall be constructed and maintained along the length of the Parkway.	No change. (See threatened and endangered species)
Floodplains	<p><i>All Build Alternatives.</i> The road elevation would be sited above the 100-year flood elevation of the streams that the project crosses and the Great Salt Lake. Any damage sustained by the new roadway when the lake level is high would be corrected through road maintenance. Major drainage structures would be designed to pass the 100-year flood without overtopping the road or changing the regulatory floodway. Riprap and other measures would be provided at the ends of drainage structures to control erosion where appropriate.</p> <p><i>Equalization Culverts.</i> Equalization culverts would allow floodwater to pass back and forth beneath the roadway to preserve the natural and beneficial floodplain.</p>	<p>No change.</p> <p>No change. Equalization culverts for the purpose of equalizing floodwaters across the road would only be constructed within the Corps floodplain instead of throughout the entire roadway (Parker pers. comm. a). These equalization culverts are now referred to as floodplain equalization culverts.</p>
Threatened and Endangered Species	<p><i>All Build Alternatives.</i> The Legacy Nature Preserve would provide long-term benefits for avian species. Additional reasonable and prudent measures and their terms and conditions based on the USFWS Biological Opinion are outlined below.</p>	<p>No change. The reasonable and prudent mitigation measures outlined in the biological opinion to minimize take of bald eagle are listed in Table 4.15-3 of this document. Because the peregrine falcon has been delisted as an endangered species, the terms and conditions of the biological opinion, with respect to peregrine falcon, are no longer considered nondiscretionary under authority of the ESA. However, USFWS still recommends implementation of these measures.</p>

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
<p>Historic and Archaeological Resources</p>	<p><i>All Build Alternatives.</i> Pursuant to 36 CFR 800.5(e), the Utah State Historic Preservation Office (SHPO) would be consulted regarding methods to minimize the effects of the project on the historic qualities of the White House.</p> <p>Historic Properties eligible under criterion C would be documented to Utah State Intensive Level Survey (ILS) standards prior to demolition.</p>	<p>The White House at 10 North 650 West in Farmington, which the Final EIS identified as subject to adverse impacts associated with construction of Alternative D, has been demolished since publication of the Final EIS. Mitigation for this adverse impact was completed as described in the Final EIS (i.e., the building was documented to Utah State ILS standards before it was removed). Mitigation of adverse affects to the historic structures as 1300 W. Glover Lane and 662 W. Clark Lane, both in Farmington, would be conducted according to the revised draft MOA. These measures would include preparation of an ILS form, photographic documentation of the structures, preparation of illustrated floor plans, archival research, and a submittal to the Utah Division of History, Preservation Section.</p> <p><i>Clark Lane Historic District (All Build Alternatives)</i></p> <p>The revised draft MOA includes design mitigation measures to ensure that project-related impacts are minimized and that the CLHD and its contributory elements are returned to their original pre-construction condition. The revised draft MOA also includes measures to minimize potential harm from construction-related vibration.</p>

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
Prehistoric and Archaeological Sites	<p><i>All Build Alternatives.</i> Archeological sites would be excavated and data recovered in accordance with an approved Memorandum of Agreement (MOA). See Appendix O (Section 106 Memorandum of Agreement) for more details. All activities would be coordinated with the (Utah) State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation (ACHP). The MOA was also distributed to regional Native America Tribes for their concurrence.</p>	<p><i>All Build Alternatives.</i> Mitigation would be required for any NRHP-eligible archaeological site physically affected by construction of a proposed build alternative. Typical mitigation measures for NRHP-eligible archaeological sites include archival investigations, development of a data recovery plan, and consultation between FHWA, UDOT, SHPO, the tribes, and other consulting parties.</p> <p>To date, consultation with SHPO has resulted in the following specific mitigation measures.</p> <ul style="list-style-type: none"> • Implementation of Alternatives A, C, D, or E would result in an adverse impact on 42Dv2 and 42Dv94. If any of those build alternatives are selected for implementation, in accordance with the revised draft MOA, the site limits will be delineated and protected from construction activities through the use of construction fencing. • To minimize impacts on 42Dv70, a professional archaeologist will monitor excavation and earthmoving activities associated with highway construction in the vicinity of the site. Although 42Dv70 would only be adversely affected under Alternative B, this mitigation measure will be implemented regardless of which build alternative is chosen, in accordance with the June 2000 MOA and supplemental consultations with SHPO (Lizotte pers. comm. 2001a). <p>In addition, the Legacy Nature Preserve mitigation plan will include a management plan to ensure the future health of cultural resources within the boundaries of the Legacy Nature Preserve.</p> <p>None of the proposed build alternatives adversely affect NRHP-eligible railroad corridors identified in the APE. No mitigation measures are proposed.</p>
Historic Railroad Corridors	None.	

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
Hazardous Waste Sites	<p><i>All Build Alternatives.</i> Measures would be implemented to prevent the spread of contamination and worker exposure to contaminants during construction. In the case of known chemical hazards, the site remedy may be negotiated through the U.S. Environmental Protection Agency (EPA) and/or UDEQ; remedial action would be conducted by a qualified hazardous waste contractor certified by the U.S. Occupational Safety and Health Administration (OSHA). If contamination by unknown chemical hazards is suspected, the Parkway construction contractor would stop work. The contractor would employ the services of a certified industrial hygienist and environmental scientists who can identify the nature of the hazard and appropriate response measures.</p> <p><i>All Build Alternatives.</i> The Northwest Oil Drain site would be mitigated by avoidance through bridging.</p> <p><i>Alternatives B, C, and Preferred Alternative.</i> The impacts on the Bountiful Sanitary Landfill would be mitigated by relocating the facilities and removing landfill waste material located within the right-of-way, and disposing of it at a permitted facility.</p>	<p>No change. Landfill mitigation would apply to Alternatives B, C, D, and E.</p>

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
Visual Resources	<p><i>All Build Alternatives.</i> Revegetation of the highway grade would help soften the visual impacts of the highway and blend it into the existing landscape. Native plants would be used where possible. The work would be completed as quickly as possible after construction to lessen the amount of time the highway grade would be more visible.</p> <p>Landscaping and a trail system are planned for the entire length of Legacy Parkway. Landscaping includes different approaches for different areas. Where Legacy Parkway is adjacent to I-15, grasses would be used. In areas of open farmland and light industry, there would be moderate tree and shrub planting. Windows facing east would maintain views of the mountains and windows facing west would maintain open views. In residential areas, berms and tree and shrub plantings would be used.</p>	No change.
Energy	(None)	No change.
Construction	<p><i>All Build Alternatives.</i> A public information program would be implemented to alert the community of ongoing and future construction activities. Information would include construction work hours and alternative travel routes. Signs would be used to notify motorists of work activities and changes in traffic patterns. Night and weekend work may shorten the duration of the construction impacts. Lights used during nighttime construction would be aimed directly at the work area and/or shielded from nearby residences. Construction activities would be limited during certain periods to protect threatened and endangered species.</p>	No change.

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
Construction Noise	(none)	<p>To reduce temporary noise from construction, contractors will comply with all state and local regulations relating to construction noise. In addition, the following measures will be implemented:</p> <p>Restrict construction to daytime hours within 305 m (1,000 ft) of residences. No construction will be performed within 305 m (1,000 ft) of an occupied dwelling unit on Sundays or legal holidays or between 10:00 p.m. and 6:00 a.m. on other days. Any variance from this condition will require approval by the UDOT construction manager.</p> <p>All equipment will have sound control devices at least as effective as the original factory-installed devices. No equipment will have unmuffled exhaust.</p> <p>The noise from any rock-crushing or screening operations performed within 914 m (3,000 ft) of any occupied dwelling unit will be mitigated either by placing material stockpiles between the operation and the affected dwelling or by other means approved by the UDOT construction manager.</p> <p>As directed by the UDOT construction manager, the contractor will implement appropriate additional noise mitigation measures, possibly including changing the location of stationary construction equipment, shutting off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, or installing acoustic barriers around stationary construction noise sources.</p>
Construction Haul Routes	(none)	<p>UDOT will specify that the contractor only use state roads as haul routes. Haul routes will vary depending on where construction is taking place along the roadway.</p>

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
Construction Air Quality	(none)	Fugitive dust, which is dust generated by construction equipment such as haul trucks and earth-moving vehicles, will be mitigated according to a dust control plan, to be developed by the contractor according to Utah Division of Air Quality standards. This plan will include measures for minimizing fugitive dust, such as applying dust suppressants and water sprays, minimizing the extent of disturbed surface areas, and restricting activities during periods of high wind.
Construction Vibration on Clark Lane Historic District	(none)	Maximum energy ratings for pile driving hammers, prescribes vibration monitoring requirements for the home at 399 W. State Street, provides specific guidance on measures to take if vibration levels exceed 0.3 cm/sec (0.12 in/sec), and includes a required for pre- and post-construction surveys of structures in the CLHD and notification of homeowners in the district prior to pile driving activities.
Construction Streetscape Impacts	(none)	As described in Section 4.20.3.2, none of the build alternatives would affect mature trees in front of 393 W. State Street and 398 W. State Street in the CLHD. To ensure that the CLHD and its contributory elements area returned to their original pre-construction condition, the MOA stipulates that the design of the State Street overpass will include provisions for minimizing grade changes, redesigning and incorporating sidewalks within the CLHD into the sidewalks for the new bridge structure, and maintaining existing landscape and streetscape features. The complete text of the MOA is included for reference in Appendix A.
Short-Term Uses vs. Long-Term Productivity	(None)	No change.
Irreversible and Irretrievable Commitment of Resources	(None)	No change.

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
Section 4(f) Properties		
Farmington Bay Waterfowl Management Area (FBWMA)	<p><i>Avoidance Alternatives</i></p> <p>The direct use of the FBWMA eastern entrance would be avoided by Alternative A and the PA. It could also be avoided by shifting Alternative B entirely to the eastern side of the D&RGRR, or by elevating Alternative B or C over the parking lot and small area north of the lot.</p> <p><i>Minimization Measures</i></p> <p>128 ha (317 ac) of land would be set aside to provide a buffer to the FBWMA and would be given to the UDWR to manage as part of the FBWMA. This land would be in addition to the Legacy Nature Preserve</p>	<p><i>Avoidance Alternatives</i></p> <p>No change.</p> <p><i>Minimization Measures</i></p> <p>The amount of land required by Alternatives B and C has been reduced due to the change in the width of the right-of-way. Land required by Alternatives B and C from the eastern entrance and parking area of the FBWMA (as discussed in Section 5.5.1) would be replaced with land of equal value, location, and usefulness and the parking area relocated. If Alternative B or C were adopted, all planning to minimize further harm would be included. The 128 ha (317 ac) of land are currently managed, under the Section 404 permit, by UDOT as part of the Legacy Nature Preserve. Ultimate management authority over these 128 ha (317 ac) and the remainder of the Legacy Nature Preserve will be established through the Section 404 permit process.</p>

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
Bountiful City Pond	<p><i>Avoidance Alternatives</i></p> <p>Alternative A is the only alternative that would not require direct use of this parcel. The PA would require 2.4 ha (6 ac) of the 17-ha (43-ac) parcel (14 percent). Less than 50 m (164 ft) of the shoreline of the pond would be affected. A Bountiful City Pond Avoidance Alternate would be located between the PA and Alternative A.</p> <p><i>Minimization Measures</i></p> <p>Alternatives B and C and the PA. The Legacy Parkway right-of-way would be the minimum possible that meets design standards. The land used would be replaced with land of at least equal value and usefulness. The affected shoreline would be reshaped to provide the same habitat and an area for users to walk around the pond.</p>	<p>Direct use of this resource has been eliminated for all build alternatives due to modifications made to the final design of the build alternatives and reevaluation of specific areas of the property eligible for protection under Section 4(f). Modifications were made to the final design for Alternative D (Final EIS Preferred Alternative) that included constructing retaining walls to avoid any fill in the pond and associated wetlands. These modifications have been incorporated into the final design of all build alternatives. In addition the City of Bountiful, in coordination with the Utah Division of Wildlife Resources and Sport Fish Restoration, has developed and implemented a management plan that includes developing specific areas of the property for recreation purposes and other areas for municipal purposes. Improvements have been made to the recreation facilities near the pond, and recreation use has increased. The areas of the property used for and functioning as recreation resources are eligible for protection under Section 4(f). Those areas of the property not used for recreation have been reevaluated, and such municipal uses are not eligible for protection under Section 4(f). Specifically, areas developed and managed as public recreation areas on the property would not be incorporated into the proposed action. The City of Bountiful has agreed to accept 4 ha (10 ac) of replacement land in exchange for less than 2.4 ha (5.9 ac) of land needed for Alternatives B, C, and E.</p>
Utah State Parks Land and Jordan River Raceway (renamed Jordan River OHV Center)	<p><i>Avoidance Alternatives</i></p> <p>All Build Alternatives would require some of the Jordan River Raceway Land. To avoid using Raceway land, the interchange would have to be designed to stay within the current right-of-way, which could not be done without violating the desirable standards of geometric design.</p> <p><i>Minimization Measures</i></p> <p>All Build Alternatives would use the minimum right-of-way needed to meet roadway design standards. The land used would be replaced with land of at least equal value, location, and usefulness.</p>	<p><i>Avoidance Alternatives</i></p> <p>No change.</p> <p><i>Minimization Measures</i></p> <p>No change.</p>

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
Historic Resources	<p><i>Avoidance Alternatives</i></p> <p>All Build Alternatives would require demolition of the white house.</p> <p><i>Minimization Measures</i></p> <p>Recordation on an Intensive Level Survey Form would be done in accordance with the U.S. Secretary of Interior's <i>Standards and Guidelines</i> for documentation (48 FR 44728-37). Mitigation would be coordinated with the SHPO and ACHP.</p>	<p>All build alternatives required a direct use of the White House at 10 North 650 West in Farmington, including demolition of the structure and incorporation of the property into the right-of-way. After publication of the Final EIS, the ILS form was completed in accordance with U.S. Secretary of Interior's Standards and Guidelines for documentation (48 FR 44728-37). The site documentation was submitted to SHPO on February 21, 200. SHPO approved the site documentation on March 8, 2001. The structure was subsequently demolished.</p> <p>None of the build alternatives would require a permanent direct use of the CLHD or structures in the CLHD because design and minimization measures have been developed and included in the revised draft MOA to avoid a permanent direct use of the CLHD and result in a temporary occupancy instead. The temporary occupancy of the CLHD would meet all the criteria outlined in 23 CFR 771.135(p)(7).</p> <p><i>Avoidance Alternatives</i></p> <p>Alternative B would result in a direct use of this resource. The entire property lies within the right-of-way for Alternative B. There is no prudent avoidance alternative other than Alternatives A, C and E in this area. However, selection of any of these build alternatives to avoid using the animal facility would result in a direct use of 662 West Clark Lane in Farmington.</p> <p>Alternative B does not require a direct use of 662 West Clark Lane in Farmington. However, selection of Alternative B would result in a direct use of the historic structure at 1300 Glovers Lane in Farmington. Alternatives A and C do require a direct use of this resources and could avoid demolishing the historic structure by constructing retaining walls, but would still require a direct use of 0.02 ha (0.06 ac) from the historic property boundary.</p>

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
		<p>All the build alternatives require a direct use of the D&RG Railroad by crossing it at grade. An avoidance alternative to the direct use of the D&RG Railroad right-of-way for Alternatives A, C, and E would be to span both crossings with a roadway bridge. The cost to implement this avoidance alternative is estimated at approximately \$8,000,000. This is roughly 23 times the estimated \$350,000 cost for the two at-grade crossings per alternative. SHPO has concurred there would be no adverse effect as a result of the direct use of the D&RG Railroad by crossing it at grade. An avoidance alternative for Alternative B would be to shift the alignment further west, between Parrish Lane and Glovers Lane, and span the D&RG Railroad where the proposed Legacy Parkway connects with US-89. However, shifting the Alternative B alignment further west would result in a direct use of the FBWMA near the eastern entrance on Sheep Road and the FBWMA isolated property. SHPO has concurred that crossing at grade would not have an adverse effect on the historic resource; therefore, a direct use of FBWMA to avoid a direct use of the D&RG Railroad is not prudent.</p> <p><i>Measures to Minimize Harm</i></p> <p>Measures to minimize harm to 1300 Glovers Lane in Farmington for Alternative B would include completion of an ILS form in accordance with the U.S. Secretary of Interior's <i>Standards and Guidelines</i> for documentation (48 FR 44728-37). All actions would be coordinated with SHPO and ACHP in accordance with the revised draft MOA. The right-of-way required for Alternative B in this area was reviewed for any potential to minimize the direct use of this structure, however the current design is the minimum right-of-way width feasible in this location.</p>

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
Archaeological Sites	<i>None</i>	<p>Construction of a retaining wall for Alternatives A and C would minimize the impact on 662 West Clark Lane in Farmington and would allow the structure to remain in place, but would still require a direct use of 0.02 ha (0.06 ac) from the historic property boundary. No other minimization measures are possible for Alternatives A and C. If Alternative E is selected the direct use on this resource would be minimized through the completion of an ILS form in accordance with the U.S. Secretary of Interior's <i>Standards and Guidelines</i> for documentation (48 FR 44728-37). All actions would be coordinated with SHPO and ACHP in accordance with the revised draft MOA.</p> <p>SHPO concurred there would be no adverse effect on the D&RG Railroad by crossing it at grade, all possible planning to minimize harm to the resource would be included in implementation of the adopted alternative.</p> <p><i>Avoidance Alternatives</i></p> <p>Alternatives A, C, and E require a direct use of Sites 42Dv2 and 42Dv94 by incorporation of the site into the right-of-way required for southern interchange with I-215. An avoidance alternative would be implementation of the interchange area planned for Alternative B. However, constructing the Alternative B southern interchange would affect 13 ha (33 ac) of prime farmland, require 6 ha (15 ac) of land from a century farm compared to 2 ha (5 ac) for the other build alternatives, and would affect two multigenerational farms that the other alternatives would not affect. Because of the additional impacts required by the Alternative B southern interchange on other resources in the area and the fact that these sites would remain untouched within the right-of-way, the Alternative B southern interchange is not considered prudent avoidance alternative.</p>

Section 4.24

Mitigation Summary

4.24.1 Approach and Methodology

This section updates the summary of mitigation measures provided in Section 4.24, *Mitigation Summary*, of the Final EIS. Table 4.24-1 below provides a summary of the mitigation measures presented in Table 4-40 in the Final EIS, as well a summary of updated and supplemental mitigation measures identified since publication of the Final EIS. Mitigation measures in this document that differ from those presented in the Final EIS were modified as a result of one or more of the following items.

- Agreements made in the Final EIS Records of Decision (RODs), which were issued in October 2000.
- The Clean Water Act Section 404 permit, which was issued by the Corps in January 2001 for implementation of Alternative D (Final EIS Preferred Alternative).
- Wetland mitigation commitments outlined in *Legacy Nature Preserve Addendum to the Wetland Mitigation Plan*, prepared in April 2001.
- Narrowing of the proposed right-of-way from 100 m (328 ft) in the Final EIS to 95m (312 ft) in the Supplemental EIS for Alternatives A, B, C, and E.
- Other design modifications described in Chapter 3, *Alternatives*, and Chapter 4, *Environmental Analysis*.

Although the right-of-way and project impacts associated with the proposed build alternatives evaluated in the Supplemental EIS would be less than those associated with build alternatives evaluated in the Final EIS, proposed mitigation for project impacts, and specifically the extent of the Legacy Nature Preserve for Alternative E, has not been reduced. In light of more detailed qualitative evaluation of impacts on natural resources, particularly wildlife, done for the Supplemental EIS, UDOT has proposed to leave the size of the Legacy Nature Preserve unchanged to assure that direct and indirect impacts that may not be subject to precise quantification are mitigated. See Section 4.13, *Wildlife*, for a complete discussion of the progression of the development of the Legacy Nature Preserve.

Table 4.24-1 presents a summary of the mitigation described in this Supplemental EIS for each resource topic. Table 4.24-1 updates Table 4-40 in the Final EIS.

Impact Category	Mitigation Measures in FEIS	Current Mitigation Measures
		<p><i>Minimization Measures</i></p> <p>No further use of or impacts on these sites are anticipated during this project, any possible impacts could be minimized through the completion of archaeological data recovery in that portion of the site that was directly used upon discovery, as outlined in the revised draft MOA. Additional minimization measures for this site would include delineation of the site boundaries and fencing during construction. These alternatives would require construction activity adjacent to them but would not require any additional direct use.</p>
<p>Section 6(f) Properties</p>	<p><i>All Build Alternatives</i></p> <p>Replacement land of equal value, location and usefulness would be provided in accordance with Section 6(f) requirements to replace the portion of the Jordan River Raceway that would be required.</p>	<p>No change.</p>
<p><i>ACHP = Advisory Council on Historic Preservation</i></p>	<p><i>SHPO = (Utah) State Historic Preservation Office</i></p>	
<p><i>BMPs = best management practices</i></p>	<p><i>TSS = total suspended solids</i></p>	
<p><i>Corps = U.S. Army Corps of Engineers</i></p>	<p><i>UDEQ = Utah Department of Environmental Quality</i></p>	
<p><i>EPA = U.S. Environmental Protection Agency</i></p>	<p><i>UDOT = Utah Department of Transportation</i></p>	
<p><i>FBWMA = Farmington Bay Waterfowl Management Area</i></p>	<p><i>UDWR = Utah Division of Wildlife Resources</i></p>	
<p><i>ILS = Intensive-Level Survey</i></p>	<p><i>UPDES = Utah Pollutant Discharge Elimination System</i></p>	
<p><i>MBTA = Migratory Bird Treaty Act</i></p>	<p><i>URAA = Uniform Relocation Assistance Act</i></p>	
<p><i>MOA = Memorandum of Agreement</i></p>	<p><i>USFWS = U.S. Fish and Wildlife Service</i></p>	
<p><i>OSHA = Occupational Safety and Health Administration</i></p>		
<p><i>PA = Preferred Alternative</i></p>		