

Report C Environmental Impacts





ENVIRONMENTALLY SENSITIVE AREAS

Road and Transit projects in the transportation plan will have positive and negative impacts on the social and physical environment of the region. For example, highway and transit improvements may reduce congestion, increase accessibility, result in fewer accidents, and improve air quality. However, the construction or upgrading of highways may impact existing agriculture protection easements, increase vulnerability to geologic hazards, disturb wetlands, or impact historic or public recreation areas. The MPO encourages transportation project sponsors to mitigate these impacts by working with UDOT, the US Army Corps of Engineers, the Utah Department of Natural Resources, the US Fish and Wildlife Service, and the State Historic Preservation Office to mitigate impacts in concert with Formal Conservation Plans—existing mitigation projects established by these organizations—in identified high-value locations.

Data Collection

MAG staff consulted prior environmental planning efforts to understand environmental factors that transportation planning efforts could impact. Using this information, environmental-themed Geographic Information System (GIS) data was assembled for MAG's environmental assessment analysis. Below is a list of environmental-themed GIS data collected:

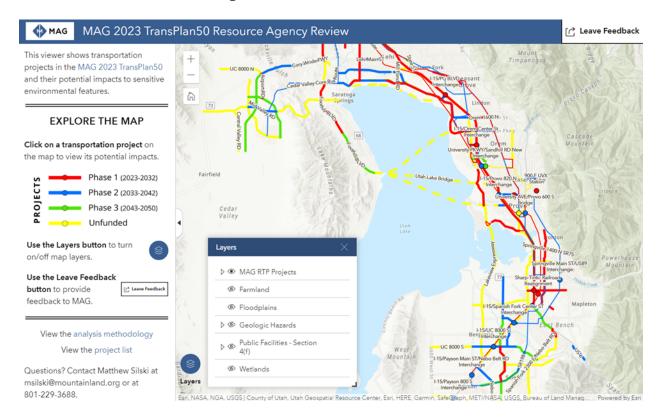
- Farmland (Agriculture Protection Zones)
- Floodplains (FEMA)
- Geologic Hazards (Faults, High Liquefaction Areas, & Landslide Potential)
- Public Facilities (Parks, Golf Courses, Historic Sites, Cemeteries, State Parks, and National Forests)
- Wetlands (National Wetland Inventory)

Environmental Impacts Viewer

Staff created an in-house environmental impacts viewer application (https://maps.mountainland.org/resource-agency-review/) designed for resource agency review. This tool showed road and transit projects envisioned between 2023 and 2050 in the context of sensitive environmental features. For each envisioned project, the estimated impacted area (in acres) was given to help resource agencies anticipate possible environmental impacts. Links to the analysis methodology and a project list with analysis results were included within this tool.



This information informed state and federal resource agencies to better understand the potential environmental impacts of the Regional Transportation Plan. This resource will also assist transportation planners and partners as planned projects are realized, and environmental assessments begin.



Feedback

Figure C1: Resource Agency Webmap

MAG invited state, federal, and local resource agencies to comment on the environmental impacts of proposed project from February 23, 2023 to March 24, 2023. Six comments were received; these comments expressed some concerns about disturbing public resources and sovereign lands. Additionally, agencies shared a willingness to work with MAG and project sponsors during the environmental assessment process. MAG will work with these agencies to help resolve concerns and pledge future engagement on transportation and environmental issues.

Below are the comments received:



Date	Project	Comment	Name	Organization	E-mail
3/1/2023	(General Commen t)	Thank you for including the Utah Department of Environmental Quality (UDEQ), Division of Environmental Response and Remediation (DERR) as a stakeholder.Please notify us when you are in the process of evaluating possible environmental issues for each project.We encourage you to review the DERR interactive map, as one source of data, prior to finalizing the Environmental Assessment to ensure you are informed of potential contamination. The interactive map is located at: http://enviro.deq.utah.gov/	David Bird	UDEQ/DERR	dgbird@uta h.gov
3/10/2023	(General Commen t)	On behalf of the Utah Division of Outdoor Recreation, we encourage further analysis of potential impacts on trails, trailheads, and other recreational assets. We recommend looking at the UGRC Trails and Pathways and the UGRC/Open Street Map trailhead. Additionally, we encourage the comparison of existing boat ramps surrounding Utah Lake to ensure minimal impact. We also encourage mitigation efforts when recreational access is compromised for expansion or new road projects. Mitigation could include reestablished public access in new locations to accomplish similar access, as well as efforts to improve the accessibility of the site. Environmental conditions, including the auditory impacts of large vehicle volumes, can impact the quality of the recreation experience. We also encourage the exploration of noise reduction efforts to maintain the serenity of the visitor experience.	Carly Lansche	Utah Division of Outdoor Recreation	clansche@ utah.gov
3/10/2023	Lehi South Expressw ay Alternate 2	Explore boater access impacts and mitigation strategies for guaranteed public access and noise reduction.	Carly Lansche	Utah Division of Outdoor Recreation	clansche@ utah.gov



Date	Project	Comment	Name	Organization	E-mail
3/10/2023	Foothill FWY (south of Stillwater Drive)	There is a presence of cultural artifacts/rockart along the proposed Foothill FWY. This is also a popular shooting area. Recreational access to observe these cultural resources should receive careful guidance from SHPO.	Carly Lansche	Utah Division of Outdoor Recreation	clansche@ utah.gov
3/10/2023	Utah Lake Bridge	If constructed, we encourage adequate spacing underneath the bridge to allow for safe boating passage. That being said, we also encourage the analysis of potential impacts on the quality of the recreational experience from the bridge development. Scenic viewsheds and lack of noise pollution contribute to creating a world class recreational experience on Utah Lake. We encourage the exploration of transportation alternatives that accomplish the connectivity needs without degrading or sacrificing the unique visitor experience offered by Utah Lake. Is there an opportunity to enhance the culture of recreation on Utah Lake by creating a transportation solution that celebrates the recreational qualities of the lake? Could a paved trail be created in conjunction with the bridge? Or could a ferrying service connect to transit opportunities on either shore? Perhaps a ferry option could accomplish the same connectivity goals while simultaneously creating a recreational experience.	Carly Lansche	Utah Division of Outdoor Recreation	clansche@ utah.gov
3/23/2023	(General Commen t)	The State of Utah recognizes and declares that the beds of navigable waters within the state are owned by the state and are among the basic resources of the state, and that there exists, and has existed since statehood, a public trust over and upon the beds of these waters. It is also recognized that the public health, interest, safety and welfare require that all uses on, beneath or above the beds of navigable lakes and streams of the state be regulated, so that the protection of navigation, fish and wildlife habitat, aquatic beauty, public recreation and water quality will be given due consideration and balanced against the navigational or economic necessity or justification for, or benefit to be derived from, any proposed use. The Division of Forestry, Fire and State Lands ("Division") manages sovereign	Ben Stirema n	Utah Division of Forestry, Fire and State Lands	bstireman @utah.gov



lands, including the beds of Utah Lake and the Jordan River, under the public trust doctrine to ensure public access for navigation, fishing and commerce.

The following unfunded projects would impact Utah Lake sovereign lands:

Lehi South Expressway Alternate 3 Unfunded Highway Project

Utah Lake Bridge North Alternate Unfunded Highway Project

Utah Lake Bridge Unfunded Highway Project

Utah Lake Bridge South Alternate Unfunded Highway Project

Lakeview Expressway Unfunded Highway Project

Springville 2600 W/SF Main St Unfunded Highway Project

While these projects are currently unfunded, it is requested that alternative routes that do not directly cross or impact Utah Lake sovereign lands are given preference over the proposed crossings listed above. In instances where there are no other options, the Division will need to evaluate the proposed route against existing state laws and regulations, and the Utah Lake Comprehensive Management Plan ("CMP"). The Division would like to remain engaged with any future planning of routes that would impact Utah Lake sovereign lands. Additionally, the Division has received funding to update the Utah Lake CMP and would encourage MAG to participate in the planning process to ensure transportation needs are being considered adequately.

Further, the Division is a named defendant in ongoing litigation relating to use and development of Utah Lake sovereign land under the public trust doctrine. The Division notes the outcome of this litigation could affect the feasibility of constructing roads on the bed of Utah Lake and recommends MAG consult with the Division and its legal counsel regarding routes that touch and concern the bed of Utah Lake during the pendency of this



litigation.

There are also many funded and unfunded projects crossing the Jordan River as listed below:

Lehi 2100 N FWY SR194 Phase 1 Highway Project

Lehi South Expressway Unfunded Highway Project

Pioneer Crossing Phase 2 Highway Project

Pony Express PKWY Phase 2 Highway Project

Pony Express PKWY Phase 1 Highway Project

Lehi South Expressway Alternate 1 Unfunded Highway Project

While many of these funded and unfunded projects expand upon existing, and previously permitted Jordan River Crossings, there are also new river crossings. In either instance, the Division requests that the projects are planned in a manner that minimizes disturbance to the bed and banks of the Jordan River and does not impact navigability. All projects will need to comply with existing permits, or undergo the application process which will be evaluated against state laws and regulations, and the Jordan River Comprehensive Management Plan.



FARMLAND

The MPO Area has several important tracts of unique, important, and prime farmland as mapped and identified by the United States Department of Agriculture. These assets have significance beyond local boundaries. While most of the alfalfa and feed grains such as winter wheat and sweet corn are used locally, specialty crops of apples, pears, and cherries find their way into national and international markets. Also, Utah County has designated "agriculture protection areas" geographic areas granted specific legal protection for the production of "crops, livestock, and livestock products" or devoted to an agency of the state or federal government. Many

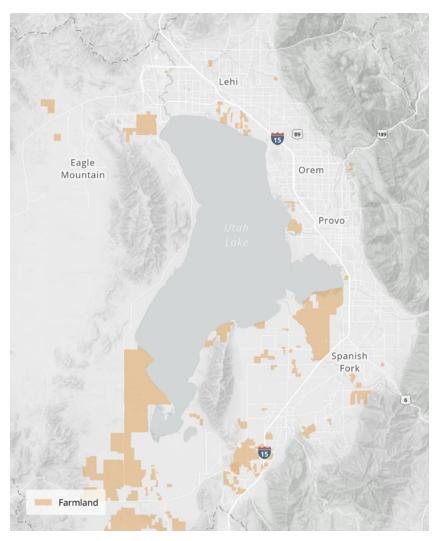


Figure C2: Farmland Map

projects in the Regional Transportation Plan will impact these unique and prime farmlands as well as the agriculture protection areas. These impacts include the use of farmland for right-of-way and the division of large contiguous pieces of farmland into smaller units. Smaller units may not be as economically viable for farming. Historically the valley floor has been almost entirely agriculture as there are large areas of high-quality soil. The increase in population has led to the conversion of much of the land to residential and commercial use, and irrigation water to industrial and residential purposes.



Project	Description	From	То	Phase Funded (anticipated)	Estimated Impacts - Farmlands
Foothill BLVD	New 3 lane road	Pony Express	Stillwater DR	1	19.2 Acres
FrontRunner Forward Investment Package Utah County	Double Track, New Service, other Improvements	SLC County Line	Provo	1	17 Acres
I-15 Freeway - SB Climbing Lane	Auxiliary lanes, OP improvements	Payson 800 S	Santaquin Center St	1	9.8 Acres
Lakeview PKWY	New and widen to 5 lanes	Geneva RD	Provo 500 W	1	8.7 Acres
Lehi 3600 West	New and widen to 5 lanes	Lehi 2100 N	Lehi Main ST	1	0.3 Acres
Pony Express PKWY	New 3 Lane Road	2300 W	Vineyard Connector	1	1.3 Acres
South Valley Commuter Rail	New Rail Service	Provo	Payson	1	11.2 Acres
Vineyard Connector	New 3 Lane Road	Pony Express	1600 N	1	8.4 Acres
Cedar Valley Core Bus Route	New Bus Service	Eagle Mountain	American Fork	2	4.9 Acres
I-15/Spanish Fork Center ST Interchange	New interchange	Spanish Fork Center ST		2	1.1 Acres



Project	Description	From	То	Phase Funded (anticipated)	Estimated Impacts - Farmlands
Lehi Main ST	Widen to 5 lanes	Lehi 2300 W	Lehi 500 W	2	0.5 Acres
Maple Core Bus Route	New Bus Service	Provo	Spanish Fork	2	1.4 Acres
Loafer Mtn Pkwy/Elk Ridge	New 5 lane road	UC 4000 S	UC 6400 S	2	28.8 Acres
Pony Express PKWY	Widen to 5 Lanes	Redwood RD	Vineyard Connector	2	2.1 Acres
Spanish Fork Center ST/UC 6400 S	New 5 Lane Road	Mount Loafer Pkwy	Spanish Fork 920 W	2	11.8 Acres
UC 8000 S	Widen to 5 lanes	UC 3200 W	Arrowhead Trail	2	3.3 Acres
US-6 - WB Climbing Lane	Climbing Lane	UPRR Bridge, Santaquin	SR-141, Genola	2	0.1 Acres
Vineyard Connector/ PG BLVD Connector	New and Widen to 5 Lanes	Pioneer Crossing	1600 N	2	15.2 Acres
Elk Ridge DR/Mount Loafer Pkwy	New and widen to 5 lanes	UC 6400 S	UC 11200 S	3	12.5 Acres
Foothill FWY	New freeway	Cory Wride FWY	Stillwater DR	3	72.2 Acres



Project	Description	From	То	Phase Funded (anticipated)	Estimated Impacts - Farmlands
Lehi South Expressway Alternate 1	New freeway	Foothill FWY	I-15	3	29 Acres
Lehi South Expressway Alternate 2	New freeway	Pony Express BLVD	I-15	3	18.9 Acres
Salem 750 N	New and widen to 3 lanes	Elk Ridge DR	Powerhouse RD	3	10.2 Acres
Central Valley RD	New 3 lane road	Mid Valley RD	UC 2400 N	4	0.1 Acres
FrontRunner Fleet Upgrades Utah County	Rail Electrification	Provo	SLC County Line	4	17 Acres
Hidden Valley RD	New 5 lane road	East Expressway	Redwood RD	4	33.2 Acres
I-15 Freeway	Widen to 6 lanes	Payson 800 S	Utah County Line	4	7.4 Acres
I-15/UC 12400 S Interchange	New Interchange	UC 12400 S		4	1.1 Acres
Lakeview Expressway	New freeway	Utah Lake Bridge	I-15 Payson	4	123.3 Acres
Mid Valley RD	New 3 lane road	Cedar Fort RD	Eagle Mountain BLVD	4	5.7 Acres



Project	Description	From	То	Phase Funded (anticipated)	Estimated Impacts - Farmlands
Mill Pond RD	New and widen to 3 lanes	Pioneer Crossing	Pony Express PKWY	4	1 Acres
Nebo Belt RD	New 3 lane road	SR198	Elk Ridge Dr	4	5.9 Acres
Payson 800 S	New 3 lane road	UC 5200 W	Payson 1700 W	4	0.1 Acres
Spanish Fork 2300 E/Nebo Belt RD	New 5 lane road	SF Canyon Road	11200 S	4	7.2 Acres
Springville 2600 W/ SF Main ST	New and widen to 5 lanes	Lakeview Drive	Spanish Fork 1400 N	4	10.2 Acres
UC 12400 S	New and widen to 5 lanes	Mountain RD	SR198	4	26.1 Acres
UC 5600 S/Spanish Fork 1900 N	New and widen to 3 lanes	UC 3200 W	SF Main ST	4	14.8 Acres
UC 8000 N	New 3 lane road	UC 17600 W	Cedar Fort RD	4	4.3 Acres

- Transfer of development rights, open space preservation program through Utah's Quality Growth Commission should be pursued for these large parcels and transportation facilities designed to preserve them.
- Project sponsors should consider the implication of the agriculture protection areas on the project budget and project development timeline.



FLOODPLAINS

Floodplains and water bodies help to accommodate periodic high-water flows and moderate erosion in a waterway. Highway projects can impact these areas in many ways, including disturbing ground within 20 feet of natural or semi-natural rivers and streams, placing obstructions in floodplains, and realigning or channeling meandering rivers and streams. Specific impact assessments and mitigation measures will be made during the environmental evaluation and review phase of the project development process.

The following table below lists planned transportation projects that intersect

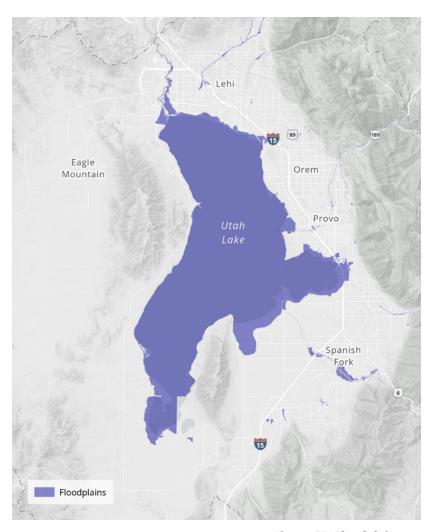


Figure C3: Floodplains map

floodplains as inventoried by the Federal Emergency Management Agency (FEMA).

Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Floodplains
Central Corridor State Street Core Bus Route	Service Improvements	Lehi	Provo	1	13.3 Acres
Clubhouse DR	New and widen to 5 lanes	Lehi 3600 W	I-15	1	



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Floodplains
FrontRunner Forward Investment Package Utah County	Double Track, New Service, other Improvements	SLC County Line	Provo	1	21.6 Acres
I-15 Freeway - SB Climbing Lane	Auxiliary lanes, OP improvements	Payson 800 S	Santaquin Center St	1	10.5 Acres
I-15 Freeway- Managed Motorways	Operational Improvements	SL County	US 6	1	96.4 Acres
Lakeview PKWY	New and widen to 5 lanes	Geneva RD	Provo 500 W	1	49.1 Acres
Lehi 2100 N FWY SR194	New freeway	Mountain View Corridor	I-15	1	9.3 Acres
Lehi 2300 W	New and widen to 5 lanes	2100 N	Lehi 1900 S	1	1 Acres
Orem 1600 N	Widen to 5 lanes	Orem 1200 W	State ST	1	0.1 Acres
Pony Express PKWY	New 3 Lane Road	2300 W	Vineyard Connector	1	25.1 Acres
Provo 820 N Bridge	Widen Bridge	Provo 820 N		1	0.8 Acres
South Valley Commuter Rail	New Rail Service	Provo	Payson	1	9.7 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Floodplains
Springville 1200 W/Canyon Creek PKWY	New and widen to 5 lane road	Lakeshore Pkwy	Market Place DR	1	5.4 Acres
UVX Airport Extension	BRT Extension	Provo Airport	Provo Frontrunner Station	1	40.2 Acres
Vineyard Connector	New 3 Lane Road	Pony Express	1600 N	1	5.1 Acres
Cedar Valley Core Bus Route	New Bus Service	Eagle Mountain	American Fork	2	1.8 Acres
Central High Frequency Corridor	New BRT or Light Rail Service	Lehi	Provo	2	31.6 Acres
I-15 Freeway - Widening	Widen, 1 lane NB and SB	University Ave	US 6	2	61.6 Acres
I-15/Orem 800 S/Campus Dr	New 5 lane road	Geneva Rd	UVU Campus DR	2	1.5 Acres
I-15/Payson 800 S Interchange	Reconstruction	Payson 800 S		2	7.5 Acres
Lehi Main ST	Widen to 5 lanes	Lehi 2300 W	Lehi 500 W	2	7.6 Acres
Nebo Core Bus Route	New Bus Service	Provo	Payson	2	21.6 Acres
Orem 1200 W	Widen to 5 lanes	Orem Center ST	Sandhill RD	2	9.9 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Floodplains
Pioneer Crossing	Widen to 6 lanes	Redwood RD	Lehi 300 E	2	5.3 Acres
Pony Express PKWY	Widen to 5 Lanes	Redwood RD	Vineyard Connector	2	57.9 Acres
Provo 820 N	Widen to 5 lanes	Geneva RD	University AVE	2	0.3 Acres
Provo Center ST	Widen to 5 lanes	Geneva RD	Provo 1600 W	2	3.5 Acres
Spanish Fork 1550 W	New and widen to 5 lanes	I-15	UC 8000 S	2	3.3 Acres
SR198	Widen to 5 lanes	Payson 800 E	Salem 400 N	2	9.3 Acres
Vineyard Connector/ PG BLVD Connector	New and Widen to 5 Lanes	Pioneer Crossing	1600 N	2	7 Acres
Elk Ridge DR/Mount Loafer Pkwy	New and widen to 5 lanes	UC 6400 S	UC 11200 S	3	4.3 Acres
I-15 Capacity Improvements	Capacity Improvements	Lehi 2100 N	University Parkway	3	28.4 Acres
I-15 Freeway - Widening	Widen 1 NB lane	University Pkwy	University Ave	3	6.4 Acres
Lehi 3600 W/Point of the Mtn Connector	New 5 lane road	SL County	Lehi 2600 N	3	1.1 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Floodplains
Lehi South Expressway	New freeway	Foothill FWY	I-15	3	6.1 Acres
Lehi South Expressway Alternate 1	New freeway	Foothill FWY	I-15	3	75.7 Acres
Lehi South Expressway Alternate 2	New freeway	Pony Express BLVD	I-15	3	118.9 Acres
Lehi South Expressway Alternate 3	New freeway	Inlet Park	Shoreline Park	3	46.2 Acres
University PKWY/Sandhill RD New Interchange	New Interchange	Orem University PKWY		3	0.1 Acres
Central High Frequency Corridor	High Frequency Corridor	Orem	Provo	4	0.7 Acres
FrontRunner Fleet Upgrades Utah County	Rail Electrification	Provo	SLC County Line	4	21.7 Acres
Geneva Expressway	Widen to 7 lanes	Orem 1600 N	University PKWY	4	1.5 Acres
I-15 Freeway	Widen to 6 lanes	Payson 800 S	Utah County Line	4	8.8 Acres
I-15 Widening South	Widen, 1 lane NB and SB	US 6	Nebo Belt Rd	4	3.8 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Floodplains
Lakeview Expressway	New freeway	Utah Lake Bridge	I-15 Payson	4	244.5 Acres
Mill Pond RD	New and widen to 3 lanes	Pioneer Crossing	Pony Express PKWY	4	0.5 Acres
Payson 800 S	New 3 lane road	UC 5200 W	Payson 1700 W	4	1.8 Acres
Point of the Mountain Connector	New Freeway	Mountain View Corridor	I-15	4	0.2 Acres
Provo 500 W	Widen to 5 lanes	Provo 300 S	Lakeview PKWY	4	5.7 Acres
Spanish Fork 2300 E/Nebo Belt RD	New 5 lane road	SF Canyon Road	11200 S	4	13.6 Acres
Springville 1400 N SR75	Widen to 5 lanes	I-15	Springville Main ST US89	4	6.3 Acres
Springville 2600 W/ SF Main ST	New and widen to 5 lanes	Lakeview Drive	Spanish Fork 1400 N	4	45.3 Acres
Springville 500 N	New and widen to 3 lanes	Springville 2250 W	Springville 400 W	4	8.2 Acres
SR198	Widen to 5 lanes	Payson 800 S	12400 S	4	0.1 Acres
Utah Lake Bridge	New freeway bridge	Redwood RD	I-15	4	100.5 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Floodplains
Utah Lake Bridge North Alternate	New freeway bridge	Redwood RD	Vineyard Connector	4	83.7 Acres
Utah Lake Bridge South Alternate	New freeway bridge	Redwood RD	Provo Center ST	4	131.2 Acres

- The effects of heavy snow melt in 2023 have increased public awareness of flooding. Special emphasis should be given during the public input phase of these projects.
- Alternate routes during flood events should be planned.
- Land uses near floodplains should be appropriate; i.e., no hospitals or schools.
- Streams and rivers should be crossed at ninety-degree angles.
- Meandering waterways should not be improperly channeled by a roadway.



GEOLOGIC HAZARDS

The Wasatch Fault, the origin of the area's steep eastern slopes, runs the length of the MPO area and marks the potential for significant, damaging earthquakes. Many such hazard areas exist that must be considered for the potential impact on transportation facilities. Fault lines of known earthquake activity, slope hazard or debris flow areas, and high potential liquefaction areas should be avoided. Safeguards should be implemented during the project's design and implementation to lessen the impact of these possible hazards.

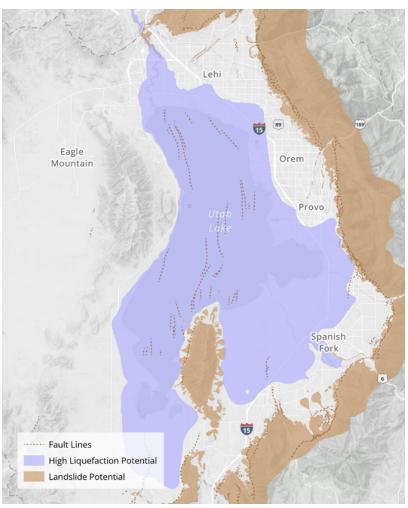


Figure C4: Earthquake Affected Areas Map

The Geologic Hazards map

illustrates these hazards in relation to the proposed projects. The following table below was generated using a comparison of known geologic hazards and the proposed transportation projects.

Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Geologic Hazards
Central Corridor State Street Core Bus Route	Service Improvements	Lehi	Provo	1	13.5 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Geologic Hazards
Clubhouse DR	New and widen to 5 lanes	Lehi 3600 W	I-15	1	4.3 Acres
Elk Ridge DR	New 3 lane road	UC 8000 S	SR198	1	23.1 Acres
FrontRunner Forward Investment Package Utah County	Double Track, New Service, other Improvements	SLC County Line	Provo	1	156.8 Acres
I-15 Freeway - SB Climbing Lane	Auxiliary lanes, OP improvements	Payson 800 S	Santaquin Center St	1	13.2 Acres
I-15 Freeway- Managed Motorways	Operational Improvements	SL County	US 6	1	436.2 Acres
I-15/Nebo Belt RD Interchange	New 5 lane road	Payson Main ST	SR198	1	15.2 Acres
I-15/PG BLVD Interchange	Interchange improvements	Pleasant Grove BLVD		1	8.8 Acres
I-15/Springville 1600 S Interchange	New interchange	Springville 1600 S		1	8.8 Acres
Lakeview PKWY	New and widen to 5 lanes	Geneva RD	Provo 500 W	1	66.4 Acres
Lehi 2100 N FWY SR194	New freeway	Mountain View Corridor	I-15	1	68.3 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Geologic Hazards
Lehi 2300 W	New and widen to 5 lanes	2100 N	Lehi 1900 S	1	44.2 Acres
Lehi 3600 West	New and widen to 5 lanes	Lehi 2100 N	Lehi Main ST	1	12.8 Acres
Point of Mountain BRT	New BRT Service	Draper	Lehi	1	1.7 Acres
Orem Center ST	Widen to 5 lanes	Geneva Rd	I-15	1	2 Acres
Pony Express PKWY	New 3 Lane Road	2300 W	Vineyard Connector	1	29.4 Acres
Sharp-Tintic Railroad Realignment	Railroad Realignment	Springville		1	0.7 Acres
South Valley Commuter Rail	New Rail Service	Provo	Payson	1	185.5 Acres
Springville 1200 W/Canyon Creek PKWY	New and widen to 5 lane road	Lakeshore Pkwy	Market Place DR	1	70.2 Acres
Springville 1600 S/Spanish Fork 2700 N	New and widen to 5 lane road	Spanish Fork Main ST	US-89	1	29.1 Acres
State ST	Widen to 7 lanes	American Fork 500 E	Pleasant Grove 200 S	1	1.3 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Geologic Hazards
UVX Airport Extension	BRT Extension	Provo Airport	Provo Frontrunn er Station	1	42.5 Acres
UVX Extension to Vineyard/UVU	BRT Extension	Vineyard	Orem	1	32.3 Acres
University AVE/Provo 600 S Bridge	Replace UPRR Bridge	University Avenue		1	0.7 Acres
Vineyard Connector	New 5 lane road	1600 N	Vineyard Main ST	1	33.3 Acres
Vineyard Connector	New 3 Lane Road	Pony Express	1600 N	1	45.5 Acres
Cedar Valley Core Bus Route	New Bus Service	Eagle Mountain	American Fork	2	31.1 Acres
Central High Frequency Corridor	New BRT or Light Rail Service	Lehi	Provo	2	147.1 Acres
I-15 / Frontage Roads	New frontage roads	Salt Lake County Line	SR-92	2	0.9 Acres
I-15 Freeway - Widening	Widen, 1 lane NB and SB	University Ave	US 6	2	173.8 Acres
I-15/Orem 800 S/Campus Dr	New 5 lane road	Geneva Rd	UVU Campus DR	2	1.6 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Geologic Hazards
I-15/Payson Main ST/Nebo Belt RD Interchange	New interchange	Payson Main ST		2	8.8 Acres
I-15/Provo 820 N Interchange	New Interchange	Provo 820 N		2	7.5 Acres
I-15/Spanish Fork Center ST Interchange	New interchange	Spanish Fork Center ST		2	8.8 Acres
I-15/UC 8000 S Interchange	Reconstruction	UC 8000 S		2	8.8 Acres
I-15/US-6 Interchange	Interchange improvements	Spanish Fork US-6		2	8.8 Acres
Lehi Main ST	Widen to 5 lanes	Lehi 2300 W	Lehi 500 W	2	17.8 Acres
Maple Core Bus Route	New Bus Service	Provo	Spanish Fork	2	51.8 Acres
Loafer Mtn Pkwy/Elk Ridge	New 5 lane road	UC 4000 S	UC 6400 S	2	28.8 Acres
Nebo Core Bus Route	New Bus Service	Provo	Payson	2	92.7 Acres
Pioneer Crossing	Widen to 6 lanes	Redwood RD	Lehi 300 E	2	86.3 Acres
Pony Express PKWY	Widen to 5 Lanes	Redwood RD	Vineyard Connector	2	100.6 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Geologic Hazards
Provo 820 N	Widen to 5 lanes	Geneva RD	University AVE	2	3 Acres
Provo Center ST	Widen to 5 lanes	Geneva RD	Provo 1600 W	2	6.6 Acres
Spanish Fork 1550 W	New and widen to 5 lanes	I-15	UC 8000 S	2	19.6 Acres
Spanish Fork Center ST/UC 6400 S	New 5 Lane Road	Mount Loafer Pkwy	Spanish Fork 920 W	2	15.6 Acres
State ST	Widen to 6 lanes	American Fork 900 W	American Fork Main ST	2	7.3 Acres
UC 8000 S	Widen to 5 lanes	UC 3200 W	Arrowhea d Trail	2	61.5 Acres
US-6	Widen to 5 lanes	Powerhou se RD	Up canyon	2	6.2 Acres
US-6 - WB Climbing Lane	Climbing Lane	UPRR Bridge, Santaquin	SR-141, Genola	2	10.8 Acres
US-6 Expressway	Convert to freeway	I-15	Spanish Fork 2300 E	2	26.7 Acres
Vineyard 1600 N	New 5 lane road	Vineyard Connecto r	Geneva RD	2	11.3 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Geologic Hazards
Vineyard Connector/ PG BLVD Connector	New and Widen to 5 Lanes	Pioneer Crossing	1600 N	2	86.4 Acres
Elk Ridge DR/Mount Loafer Pkwy	New and widen to 5 lanes	UC 6400 S	UC 11200 S	3	48.9 Acres
I-15 Capacity Improvements	Capacity Improvements	Lehi 2100 N	University Parkway	3	183.6 Acres
I-15 Freeway - Widening	Widen 1 NB lane	University Pkwy	University Ave	3	73.3 Acres
I-15/Traverse Mtn BLVD Interchange	New Interchange	Lehi Traverse Mtn BLVD		3	1.7 Acres
Lehi 3600 W/Point of the Mtn Connector	New 5 lane road	SL County	Lehi 2600 N	3	8 Acres
Lehi South Expressway	New freeway	Foothill FWY	I-15	3	142.5 Acres
Lehi South Expressway Alternate 1	New freeway	Foothill FWY	I-15	3	306.5 Acres
Lehi South Expressway Alternate 2	New freeway	Pony Express BLVD	I-15	3	141.8 Acres
Lehi South Expressway Alternate 3	New freeway	Inlet Park	Shoreline Park	3	47.5 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Geologic Hazards
Salem 750 N	New and widen to 3 lanes	Elk Ridge DR	Powerhou se RD	3	4.6 Acres
Traverse Mtn BLVD	New 5 lane road	West Connecto r	East Connector	3	4.9 Acres
UC 11200 S	Widen to 5 lanes	Elk Ridge DR	Woodland Hills Dr	3	4.9 Acres
UC 8000 S/Woodland Hills DR	New and widen to 5 lanes	Arrowhea d Trail	Nebo Belt RD	3	5.7 Acres
Central High Frequency Corridor	High Frequency Corridor	Orem	Provo	4	14.9 Acres
FrontRunner Fleet Upgrades Utah County	Rail Electrification	Provo	SLC County Line	4	157.4 Acres
Geneva Expressway	Widen to 7 lanes	Orem 1600 N	University PKWY	4	44.7 Acres
Hidden Valley RD	New 5 lane road	East Expressw ay	Redwood RD	4	1.4 Acres
I-15 Freeway	Widen to 6 lanes	Payson 800 S	Utah County Line	4	14.9 Acres
I-15 Widening South	Widen, 1 lane NB and SB	US 6	Nebo Belt Rd	4	184 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Geologic Hazards
Lakeview Expressway	New freeway	Utah Lake Bridge	l-15 Payson	4	522.3 Acres
Mill Pond RD	New and widen to 3 lanes	Pioneer Crossing	Pony Express PKWY	4	9.1 Acres
Payson 800 S	New 3 lane road	UC 5200 W	Payson 1700 W	4	7.7 Acres
Point of the Mountain Connector	New Freeway	Mountain View Corridor	I-15	4	2.3 Acres
Provo 500 W	Widen to 5 lanes	Provo 300 S	Lakeview PKWY	4	30.9 Acres
Provo 500 W/ 600 S Bridge	New bridge	Provo 600 S RR Crossing		4	0.6 Acres
Spanish Fork 2300 E/Nebo Belt RD	New 5 lane road	SF Canyon Road	11200 S	4	17.6 Acres
Springville 1400 N SR75	Widen to 5 lanes	I-15	Springville Main ST US89	4	34.6 Acres
Springville 2600 W/ SF Main ST	New and widen to 5 lanes	Lakeview Drive	Spanish Fork 1400 N	4	84 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Geologic Hazards
Springville 500 N	New and widen to 3 lanes	Springville 2250 W	Springville 400 W	4	15.8 Acres
UC 5600 S/Spanish Fork 1900 N	New and widen to 3 lanes	UC 3200 W	SF Main ST	4	34.4 Acres
UC 8000 S	New 3 lane road	UC 5600 W	UC 3200 W	4	29.4 Acres
Utah Lake Bridge	New freeway bridge	Redwood RD	I-15	4	114.8 Acres
Utah Lake Bridge North Alternate	New freeway bridge	Redwood RD	Vineyard Connector	4	110.8 Acres
Utah Lake Bridge South Alternate	New freeway bridge	Redwood RD	Provo Center ST	4	139.4 Acres

- One of the primary concerns that should be addressed when planning a facility in an area prone to geologic hazards is to ensure that there are alternative routes providing similar access.
- Alternative rights-of-way in less unstable areas should be considered.
- Engineering and design should include mitigation for such conditions.
- Funding of projects should include sufficient funds for mitigation measures.



PUBLIC FACILITIES - 4(F) & 6(F) PROPERTIES

Section 4(F) of the Department of Transportation Act of 1966 and Section 6(F) of the Land and Water Conservation Act of 1965 provide protections for certain properties that may be impacted by planned transportation facilities. 4(F) properties include publicly owned parks and recreational areas, publicly owned wildlife and waterfowl refuges, public or privately-owned historic sites, cultural resource sites, and publicly owned and accessible trails. Outdoor recreational properties funded by the Land and Water Conservation Fund (LWCF) are referred to as 6(F) properties.

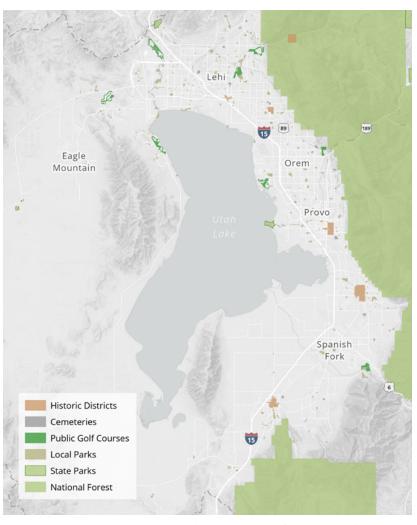


Figure C5: 4(F) and 6(F) Properties Map

The following table lists planned transportation projects that intersect with public parks, public recreation areas, historic sites, cemeteries, and public golf courses.

Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Public Facilities
Central Corridor State Street Core Bus Route	Service Improvements	Lehi	Provo	1	7.2 Acres
Clubhouse DR	New and widen to 5 lanes	Lehi 3600 W	I-15	1	4.3 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Public Facilities
FrontRunner Forward Investment Package Utah County	Double Track, New Service, other Improvements	SLC County Line	Provo	1	18.4 Acres
I-15 Freeway- Managed Motorways	Operational Improvements	SL County	US 6	1	2.8 Acres
Lehi 2300 W	New and widen to 5 lanes	2100 N	Lehi 1900 S	1	0.04 Acres
Orem 1600 N	Widen to 5 lanes	Orem 1200 W	State ST	1	0.3 Acres
Point of Mountain BRT	New BRT Service	Draper	Lehi	1	2.6 Acres
Pony Express PKWY	New 3 Lane Road	2300 W	Vineyard Connector	1	0.03 Acres
South Valley Commuter Rail	New Rail Service	Provo	Payson	1	0.1 Acres
Santaquin Main ST US-6	Widen to 5 lanes	Santaquin 500 W	I-15	1	0.1 Acres
Springville 1200 W/Canyon Creek PKWY	New and widen to 5 lane road	Lakeshore Pkwy	Market Place DR	1	2.5 Acres
Cedar Valley Core Bus Route	New Bus Service	Eagle Mountain	American Fork	2	0 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Public Facilities
Central High Frequency Corridor	New BRT or Light Rail Service	Lehi	Provo	2	3.3 Acres
Canyon Crest RD/UC 4800 W	Widen to 5 Lanes	Alpine Main ST	SR 92	2	0.6 Acres
Cory Wride FWY	New freeway, frontage roads	Ranches PKWY	Mountain View Corridor	2	2.3 Acres
Lehi Main ST	Widen to 5 lanes	Lehi 2300 W	Lehi 500 W	2	1.1 Acres
Maple Core Bus Route	New Bus Service	Provo	Spanish Fork	2	10.5 Acres
Nebo Core Bus Route	New Bus Service	Provo	Payson	2	5.9 Acres
Pony Express PKWY	Widen to 5 Lanes	Redwood RD	Vineyard Connector	2	0.5 Acres
Springville Main ST/US89 Interchange	Reconstruction	Springville Main ST		2	0.7 Acres
SR198	Widen to 5 lanes	Payson 800 E	Salem 400 N	2	0.01 Acres
State ST	Widen to 6 lanes	American Fork 900 W	American Fork Main ST	2	0.2 Acres
US-6 Expressway	Convert to freeway	I-15	Spanish Fork 2300 E	2	1.6 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Public Facilities
Cory Wride FWY	New freeway	East Expressway	Ranches PKWY	3	0.1 Acres
I-15 Capacity Improvements	Capacity Improvements	Lehi 2100 N	University Parkway	3	2.8 Acres
Lehi 3600 W/Point of the Mtn Connector	New 5 lane road	SL County	Lehi 2600 N	3	0.1 Acres
Lehi South Expressway Alternate 1	New freeway	Foothill FWY	I-15	3	0.3 Acres
Lehi South Expressway Alternate 2	New freeway	Pony Express BLVD	I-15	3	7.9 Acres
Lehi South Expressway Alternate 3	New freeway	Inlet Park	Shoreline Park	3	1.9 Acres
UC 11200 S	Widen to 5 lanes	Elk Ridge DR	Woodland Hills Dr	3	0.4 Acres
Central High Frequency Corridor	High Frequency Corridor	Orem	Provo	4	3.3 Acres
Eagle Mountain BLVD	Widen to 5 lanes	SR 73	East Expressway	4	0.7 Acres
FrontRunner Fleet Upgrades Utah County	Rail Electrification	Provo	SLC County Line	4	18.6 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Public Facilities
Hidden Valley RD	New 5 lane road	East Expressway	Redwood RD	4	0 Acres
Springville 500 N	New and widen to 3 lanes	Springville 2250 W	Springville 400 W	4	0.1 Acres
SR198	Widen to 5 lanes	Payson 800 S	12400 S	4	0.6 Acres
Utah Lake Bridge South Alternate	New freeway bridge	Redwood RD	Provo Center ST	4	2.2 Acres

- Transportation alternatives need to be determined to lessen the impact on 4(F) and 6(F) properties.
- Modifications to project alignments must be considered to avoid impact to 4(F) and 6(F) properties.
- If there are no feasible alternatives to impacting 4(F) and 6(F) properties, minimization efforts should be pursued to lessen the overall impact.

WETLANDS

Wetlands serve critical environmental functions, including flood control, water purification and the provision of habitat for fish and wildlife. Wetlands are defined as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils conditions. The significance of roadway wetland impacts varies based upon the project's characteristics, the size, and quality of the wetlands area, and the level to which the wetlands have already been disturbed by people. A project may generally impact wetlands by destroying the immediate footprint of the wetland with the planned facility or by creating a barrier between adjacent wetland areas. The National Wetlands Inventory of the U.S. Fish & Wildlife Service produces information on the characteristics, extent, and status of the nation's wetlands and deep-water habitats. Federal, state, and local agencies, academic institutions, U.S. Congress, and the private sector use the National Wetlands Inventory information along with species distribution, habitat relationships, threatened and endangered species status,



and property/real estate at-risk determinations in conducting wetland analysis and developing environmental policies and regulations.

Utah Lake wetlands have long been recognized locally and nationally for their critical importance to fish and wildlife habitat. The Utah Lake wetland ecosystem is important as a breeding area and stopover for many migratory birds in the Pacific Flyway. Approximately 226 species of birds, 49 mammalian species, 16 species of amphibians and reptiles and 18 species of fish, are known to use Utah Lake wetlands. The Utah Lake Wetland Preserve, a network of wetland and interspersed upland habitats near the southern end of Utah Lake, is being established to partially mitigate for past and

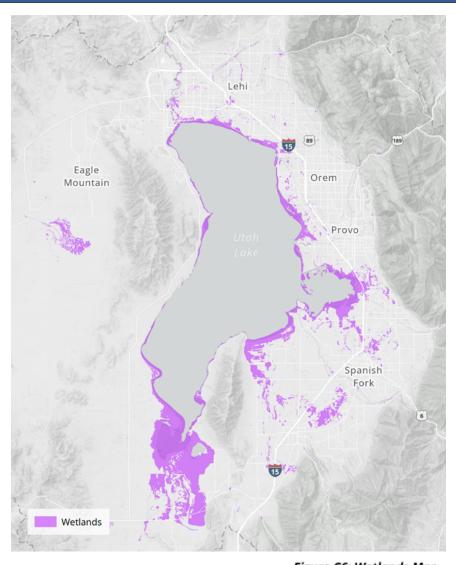


Figure C6: Wetlands Map

anticipated future impacts of the Central Utah Project water development (resource: Utah Reclamation Mitigation and Conservation Commission). Wetland delineation, jurisdictional wetland impact assessments, and mitigation measures will be determined utilizing wetland maps and other measures during the environmental evaluation and review phase of the individual project development process.



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Wetlands
Elk Ridge DR	New 3 lane road	UC 8000 S	SR198	1	8.9 Acres
FrontRunner Forward Investment Package Utah County	Double Track, New Service, other Improvements	SLC County Line	Provo	1	20.9 Acres
I-15 Freeway - SB Climbing Lane	Auxiliary lanes, OP improvements	Payson 800 S	Santaquin Center St	1	0.1 Acres
I-15 Freeway- Managed Motorways	Operational Improvements	SL County	US 6	1	10.6 Acres
I-15/Nebo Belt RD Interchange	New 5 lane road	Payson Main ST	SR198	1	1.6 Acres
I-15/University PKWY Interchange	Interchange Improvements	Orem University PKWY		1	0.05 Acres
Lakeview PKWY	New and widen to 5 lanes	Geneva RD	Provo 500 W	1	13 Acres
Lehi 2100 N FWY SR194	New freeway	Mountain View Corridor	I-15	1	3.4 Acres
Pony Express PKWY	New 3 Lane Road	2300 W	Vineyard Connector	1	9.2 Acres
South Valley Commuter Rail	New Rail Service	Provo	Payson	1	5.5 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Wetlands
Springville 1200 W/Canyon Creek PKWY	New and widen to 5 lane road	Lakeshore Pkwy	Market Place DR	1	5.4 Acres
Springville 1600 S/Spanish Fork 2700 N	New and widen to 5 lane road	Spanish Fork Main ST	US-89	1	0.2 Acres
State ST	Widen to 7 lanes	American Fork 500 E	Pleasant Grove 200 S	1	0 Acres
UVX Airport Extension	BRT Extension	Provo Airport	Provo Frontrunner Station	1	7.9 Acres
Vineyard Connector	New 5 lane road	1600 N	Vineyard Main ST	1	1 Acres
Vineyard Connector	New 3 Lane Road	Pony Express	1600 N	1	2.3 Acres
Cedar Valley Core Bus Route	New Bus Service	Eagle Mountain	American Fork	2	1.4 Acres
Central High Frequency Corridor	New BRT or Light Rail Service	Lehi	Provo	2	0.2 Acres
I-15 Freeway - Widening	Widen, 1 lane NB and SB	University Ave	US 6	2	8.1 Acres
I-15/Orem 800 S/Campus Dr	New 5 lane road	Geneva Rd	UVU Campus DR	2	0.03 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Wetlands
Maple Core Bus Route	New Bus Service	Provo	Spanish Fork	2	0.1 Acres
Loafer Mtn Pkwy/Elk Ridge	New 5 lane road	UC 4000 S	UC 6400 S	2	1 Acres
Nebo Core Bus Route	New Bus Service	Provo	Payson	2	3.5 Acres
Orem 1200 W	Widen to 5 lanes	Orem Center ST	Sandhill RD	2	0.2 Acres
Pioneer Crossing	Widen to 6 lanes	Redwood RD	Lehi 300 E	2	11.6 Acres
Pony Express PKWY	Widen to 5 Lanes	Redwood RD	Vineyard Connector	2	18.4 Acres
Spanish Fork 1550 W	New and widen to 5 lanes	I-15	UC 8000 S	2	0.4 Acres
SR198	Widen to 5 lanes	Payson 800 E	Salem 400 N	2	0.2 Acres
State ST	Widen to 6 lanes	American Fork 900 W	American Fork Main ST	2	0.03 Acres
UC 8000 S	Widen to 5 lanes	UC 3200 W	Arrowhead Trail	2	2.7 Acres
US-6 - WB Climbing Lane	Climbing Lane	UPRR Bridge, Santaquin	SR-141, Genola	2	0.1 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Wetlands
US-6 Expressway	Convert to freeway	I-15	Spanish Fork 2300 E	2	0.1 Acres
Vineyard Connector/ PG BLVD Connector	New and Widen to 5 Lanes	Pioneer Crossing	1600 N	2	4.4 Acres
Elk Ridge DR/Mount Loafer Pkwy	New and widen to 5 lanes	UC 6400 S	UC 11200 S	3	9.1 Acres
Foothill BLVD	New 4 lane road	Stillwater DR	Redwood RD	3	0.2 Acres
I-15 Capacity Improvements	Capacity Improvements	Lehi 2100 N	University Parkway	3	1.6 Acres
I-15 Freeway - Widening	Widen 1 NB lane	University Pkwy	University Ave	3	1 Acres
Lehi South Expressway	New freeway	Foothill FWY	I-15	3	12.7 Acres
Lehi South Expressway Alternate 1	New freeway	Foothill FWY	I-15	3	24.9 Acres
Lehi South Expressway Alternate 2	New freeway	Pony Express BLVD	I-15	3	92.2 Acres
Lehi South Expressway Alternate 3	New freeway	Inlet Park	Shoreline Park	3	38.5 Acres
Salem 750 N	New and widen to 3 lanes	Elk Ridge DR	Powerhous e RD	3	2.7 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Wetlands
UC 8000 S/Woodland Hills DR	New and widen to 5 lanes	Arrowhead Trail	Nebo Belt RD	3	0.3 Acres
Foothill FWY	Convert to freeway	Stillwater DR	Redwood RD	4	0.4 Acres
FrontRunner Fleet Upgrades Utah County	Rail Electrification	Provo	SLC County Line	4	21 Acres
I-15 Freeway	Widen to 6 lanes	Payson 800 S	Utah County Line	4	0.1 Acres
I-15 Widening South	Widen, 1 lane NB and SB	US 6	Nebo Belt Rd	4	2.2 Acres
I-15/UC 12400 S Interchange	New Interchange	UC 12400 S		4	1.2 Acres
Lakeview Expressway	New freeway	Utah Lake Bridge	I-15 Payson	4	53.9 Acres
Mid Valley RD	New 3 lane road	Cedar Fort RD	Eagle Mountain BLVD	4	0.1 Acres
Nebo Belt RD	New 3 lane road	SR198	Elk Ridge Dr	4	0.01 Acres
Payson 800 S	New 3 lane road	UC 5200 W	Payson 1700 W	4	0.04 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Wetlands
Point of the Mountain Connector	New Freeway	Mountain View Corridor	I-15	4	0.1 Acres
Provo 500 W	Widen to 5 lanes	Provo 300 S	Lakeview PKWY	4	0.3 Acres
Spanish Fork 2300 E/Nebo Belt RD	New 5 lane road	SF Canyon Road	11200 S	4	0.3 Acres
Springville 1400 N SR75	Widen to 5 lanes	I-15	Springville Main ST US89	4	1.4 Acres
Springville 2600 W/ SF Main ST	New and widen to 5 lanes	Lakeview Drive	Spanish Fork 1400 N	4	22.5 Acres
Springville 500 N	New and widen to 3 lanes	Springville 2250 W	Springville 400 W	4	0.1 Acres
UC 12400 S	New and widen to 5 lanes	Mountain RD	SR198	4	0.3 Acres
UC 5600 S/Spanish Fork 1900 N	New and widen to 3 lanes	UC 3200 W	SF Main ST	4	0.2 Acres
UC 8000 S	New 3 lane road	UC 5600 W	UC 3200 W	4	2.2 Acres
Utah Lake Bridge	New freeway bridge	Redwood RD	I-15	4	6.3 Acres
Utah Lake Bridge North Alternate	New freeway bridge	Redwood RD	Vineyard Connector	4	2.1 Acres



Project	Description	From	То	Fiscal Constraint	Estimated Impacts - Wetlands
Utah Lake Bridge South Alternate	New freeway bridge	Redwood RD	Provo Center ST	4	4.2 Acres

- Wetland areas should be avoided if possible. Recommend alternative alignments.
- Sufficient funds should be included in all requests to provide mitigation for impacted wetlands.
- Banking wetlands can help with future mitigation efforts.
- Enforce limits of disturbance during construction activities near wetlands.
- Encourage local governments to adopt wetland protection regulations.

