

Chapter 11 – Environmental Mitigation

The primary purpose of the Dixie Regional Transportation Plan is to identify what transportation projects are needed in accordance with the values of safety, increased mobility, decreased traffic congestion, quality of life, economic development, and limited financial constraints.

Dixie MPO recognizes that transit, road, and trail projects bring positive and negative impacts to the natural and built environments. While corridor planning requires only a broad consideration of environmental impacts, Dixie MPO respects the more detailed environmental analyses required of each project prior to final design and construction. The MPO strives to establish steering and stakeholder committees to guide early corridor planning studies. Committees are comprised of resource agencies that consider impacts to air quality, farmland, fish and wildlife, historical/archeological resources, geologic hazards, floodplains, water quality, and wetlands.

Following is a brief discussion of potential environmental issues that may require further consideration, impact analysis, and environmental mitigation on a project by project basis prior to final alignment selection, design engineering, and construction:

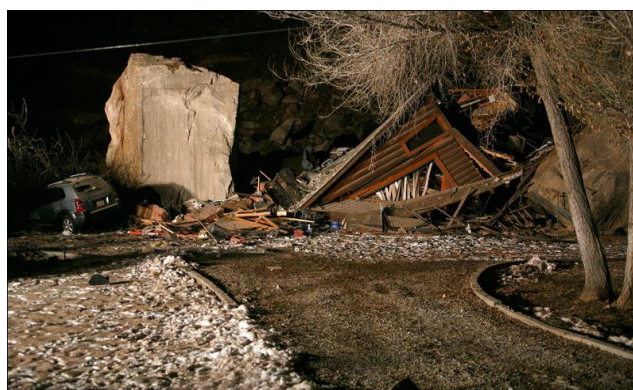
Impacts

Farmland Impacts

Preservation of farmland is increasingly difficult in the Dixie Region. The shrinking availability of land, incentives to sell and give way to development, and the area's harsh desert environment are combining to reduce the supply of farmable land within the Dixie MPO planning boundary. Incentives for jurisdictions to protect and preserve farm environments may not be strong enough to overcome these market forces that are driving a growth in population and consuming once farmable land for commercial and residential use.

Geologic Hazards

The geologic diversity within the State of Utah is well known and much of that diversity and topographical constraint exists in the Dixie MPO area. The region is susceptible to earthquakes, rock fall, landslides, expansive soils, etc. Due to recent area events, natural hazards have become an increasing concern for area planners and constructors. Natural Hazard information can be obtained by visiting the Five County Natural Hazard Mitigation Plan website (hazardmitigationplan.org). The MPO encourages transportation solutions to take in to account the known geologic hazards in plans, designs, and construction to prevent, avoid, or mitigate as much as possible current, ongoing, and future geologic events.



Fish and Wildlife Impacts

The following table presents federally threatened and endangered species, State sensitive species found throughout the Dixie Region. Although these species are identified for planning purposes and early

corridor preservation studies, more detailed investigation of impacts, avoidance, or mitigation are generally required as individual projects advance through the environmental clearance process.

Federally Listed Species in the Dixie MPO planning area

This list was compiled using the Information for Planning and Construction (IPaC*) tool from the U.S. Fish & Wildlife Service; other federally listed species likely occur in Utah Counties. This list is the current list from IPaC as of March 14, 2023.

Common Name	Scientific Name	Status	Critical Habitats
Utah Prairie Dog	<i>Cynomys parvidens</i>	Threatened	
California Condor	<i>Gymnogyps californianus</i>	EXPN**	
California Least Tern	<i>Sterna antillarum browni</i>	Endangered	
Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	Threatened	Y / Final
Southwestern Willow Flycatcher	<i>Empidonax traillii extimus</i>	Endangered	Y / Final
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Threatened	
Desert Tortoise	<i>Gopherus agassizii</i>	Threatened	Y / Final
Northern Mexican Gartersnake	<i>Thamnophis eques megalops</i>	Threatened	
Virgin River Chub	<i>Gila seminuda</i>	Endangered	Y / Final
Woundfin	<i>Plagopterus argentissimus</i>	Endangered	Y / Final
Monarch Butterfly	<i>Danaus plexippus</i>	Candidate	
Dwarf Bearclaw-poppy	<i>Arctomecon humilis</i>	Endangered	
Fickeisen Plains Cactus	<i>Pediocactus peeblesianus ssp. fickeiseniae</i>	Endangered	
Gierisch Mallow	<i>Sphaeralcea gierischii</i>	Endangered	Y / Final
Holmgren Milk-vetch	<i>Astragalus holmgreniorum</i>	Endangered	Y / Final
Jones Cycladenia	<i>Cycladenia humilis var. jonesii</i>	Threatened	
Shivwits Milkvetch	<i>Astragalus ampullarioides</i>	Endangered	Y / Final
Siler Pincushion Cactus	<i>Pediocactus (=Echinocactus,=Utahia) sileri</i>	Threatened	
Ute Ladies'-tresses	<i>Spiranthes diluvialis</i>	Threatened	

* Information for Planning and Construction (IPaC) from the U.S. Fish & Wildlife Service – March 14, 2023

** Experimental Population Non-Essential

Note: Please contact the U.S. Fish and Wildlife Service (801-975-3330) for the purpose of consultation under the Endangered Species Act.

“Certain birds are protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

“Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures [. . .].

“The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in [the] project location. [. . .] This is not a list of every bird found in this location, nor a guarantee that every bird on this list will be found in your project area. [. . .]

“For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds” on this list please visit the IPaC tool.” (IPaC U.S. Fish & Wildlife Service)

Birds of Conservation Concern			
Common Name	Scientific Name	Level of Concern	Breeding Season
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Non-BCC Vulnerable	Breeds Oct 15 to Aug 31
Bendire's Thrasher	<i>Toxostoma bendirei</i>	BCC Rangewide (CON)	Breeds Mar 15 to Jul 31
Black Swift	<i>Cypseloides niger</i>	BCC Rangewide (CON)	Breeds Jun 15 to Sep 10
Black-chinned Sparrow	<i>Spizella atrogularis</i>	BCC Rangewide (CON)	Breeds Apr 15 to Jul 31
California Gull	<i>Larus californicus</i>	BCC Rangewide (CON)	Breeds Mar 1 to Jul 31
Cassin's Finch	<i>Carpodacus cassinii</i>	BCC Rangewide (CON)	Breeds May 15 to Jul 15
Clark's Grebe	<i>Aechmophorus clarkii</i>	BCC Rangewide (CON)	Breeds Jun 1 to Aug 31
Clark's Nutcracker	<i>Nucifraga columbiana</i>	BCC - BCR	Breeds Jan 15 to Jul 15
Costa's Hummingbird	<i>Calypte costae</i>	BCC - BCR	Breeds Jan 15 to Jun 10
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	BCC Rangewide (CON)	Breeds May 15 to Aug 10
Golden Eagle	<i>Aquila chrysaetos</i>	Non-BCC Vulnerable	Breeds Dec 1 to Aug 31
Grace's Warbler	<i>Dendroica graciae</i>	BCC - BCR	Breeds May 20 to Jul 20
Lesser Yellowlegs	<i>Tringa flavipes</i>	BCC Rangewide (CON)	Breeds elsewhere
Lewis's Woodpecker	<i>Melanerpes lewis</i>	BCC Rangewide (CON)	Breeds Apr 20 to Sep 30
Long-eared Owl	<i>asio otus</i>	BCC Rangewide (CON)	Breeds Mar 1 to Jul 15
Marbled Godwit	<i>Limosa fedoa</i>	BCC Rangewide (CON)	Breeds elsewhere
Olive-sided Flycatcher	<i>Contopus cooperi</i>	BCC Rangewide (CON)	Breeds May 20 to Aug 31
Pinyon Jay	<i>Gymnorhinus cyanocephalus</i>	BCC Rangewide (CON)	Breeds Feb 15 to Jul 15
Rufous-winged Sparrow	<i>Aimophila carpalis</i>	BCC Rangewide (CON)	Breeds Jun 15 to Sep 30
Virginia's Warbler	<i>Vermivora virginiae</i>	BCC Rangewide (CON)	Breeds May 1 to Jul 31
Western Grebe	<i>aechmophorus occidentalis</i>	BCC Rangewide (CON)	Breeds Jun 1 to Aug 31
Willet	<i>Tringa semipalmata</i>	BCC Rangewide (CON)	Breeds elsewhere

BCC - Birds of Conservation Concern; CON - Birds of Conservation Concern in Continental USA; BCRs - Bird Conservation Regions

Historical/Archeological Impacts

Historical and archeological sites are other components that are not easily measured, but add character and quality of life in the Dixie Region. Avoidance, mitigation, and restorations are options to consider as planned solutions reach the environmental analysis phase.

Although the Dixie Region has not been completely surveyed for archaeological resources, the MPO boundary areas are likely to contain numerous archaeological sites.

The ancestral Southern Paiute are believed to have moved into this region sometime between AD 1000 and 1300. They were hunters and gatherers who practiced a seasonal round of resource collection and processing over a broad and diverse landscape. In southern Utah, however, some Southern Paiute groups became small-scale farmers and diverted water from the Virgin and Santa Clara Rivers and other smaller streams to cultivate garden plots. Euro-American explorers to this region, including Dominguez and Escalante in 1776 and Jedidiah Smith in the 1820s, reported seeing irrigation ditches and small check dams constructed by the Southern Paiute to divert water from the rivers and streams onto their fields of corn, beans, and squash. A Southern Paiute site, located on private land near the study area, was excavated by archaeologists from Brigham Young University in the 1980s. This site contained evidence of maize cultivation that dated to AD 1700 and 1830 (Allison 1988).

As part of the NEPA process, consultation will be required with Native American tribes that may have an interest in the study area. Final determination of tribes to include in the consultation process will be made during the NEPA process. The tribes with interest in the study area include the Hopi Tribe; the Navajo Nation; the Paiute Indian Tribe of Utah and its Shivwits, Cedar, Indian Peak, and Kanosh Bands; the Uintah/Ouray Ute; the Las Vegas Paiute; the Moapa Paiute; and the Kaibab Paiute.

Few surveys of historic resources have occurred within the study area. Historic resources in the study area relate to the 18th and 19th century Euro-American explorations. In 1776, two Franciscan priests from New Mexico, Dominguez and Escalante, traveled through southern Utah looking for an overland route to the Spanish colonies in California. This travel route came to be known as the Old Spanish Trail. The main branch of the Old Spanish Trail followed the Santa Clara River south from Mountain Meadows and then veered to the west over the low pass of Utah Hill (old Highway 91). In 2001, the Old Spanish Trail was designated as a National Historic Trail.

By the early 1850s, the first colonies were being established by members of the Church of Jesus Christ of Latter-day Saints in southern Utah. Some of the structures built by these colonies may be found in the study area; these structures include irrigation systems along the Santa Clara and Virgin Rivers and sites associated with stock animals.

Water-body and Floodplain Modification

Washington County in cooperation with FEMA and other agencies has produced an updated floodplain plan to deal with the aftermath of the January 2005 Flood in Dixie and to prevent and control floodwaters in future significant storm events. This plan is available at the offices of Washington County. The FEMA Digital Flood Insurance Maps greatly assist planning around and through flood plain areas. These and other maps are available at the FEMA web site or through any of the Washington County City offices that participate in the Federal Flood Insurance Program. The Washington County Flood Control Authority was formed as an intergovernmental body that deals with regional flood control issues within the county. Transportation needs solutions/projects must be planned designed and built with these requirements and conditions in mind.

Water Quality Impacts

Water quality can be greatly impacted by the number of impermeable surfaces (including roadways) in a region. Hard surfaces lead to polluted runoff instead of the water table's natural percolation cycle. Most of the larger communities within the MPO boundaries participate in the Utah Pollutant Discharge Elimination System (UPDES) programs. These programs administered through the Utah Department of Environmental Quality (DEQ) are designed to reduce or eliminate pollutants from surface runoff in conjunction with the EPA Clean Water Act.

Wetland Impacts

Wetlands provide an invaluable resource to our ecosystem. Section 404 of the Clean Water Act protects wetlands from development without a permit issued by the Army Corps of Engineers. Designing the roadways to protect the wetlands within the Dixie Region is in accordance with the requirements of the Clean Water Act and leads to a more sustainable community. A local office of the Army Corps of Engineers has been established and is available for further information.

Climate Change

While local discussions of climate change effects are minimal within the Dixie MPO, more and more attention is being directed within the state concerning this issue. MPO executives and planners regularly discuss flood control plans and recognize the need to construct roads and bridges to accommodate heavy runoff volumes and to facilitate the local needs for drainage; however, climate change may also have an effect on this and other aspects of transportation. Flooding events in 2005 and 2011 stimulated local awareness of potential hydrology concerns in a changing environment and validated the need to over-plan bridge facilities and other flood treatments within the flood plains and waterways of Southwestern Utah. Changes in temperature, precipitation and extreme weather events have the potential to negatively affect the populations throughout the MPO.

A document titled "Climate Change and Public Health in Utah" provides an accessible overview and description of the influence of environmental factors on climate change and health in Utah. Many identified indicators could have an effect on how transportation is looked at and planned in the future.

Air Quality

Washington County, Utah, is currently considered an attainment area as defined by the Clean Air Act and therefore is not regulated by the EPA or the Utah Division of Air Quality. However, proper planning will be required if the region reaches non-attainment status in the coming years. In non-attainment status, plans to reduce personal automobile dependency would become vital. Although there are many sources of air pollution, including ambient air moving in from other parts of the region, auto emissions, vapor gases, and dust are common contributors to air pollution locally. Mode/trip decisions, reducing single occupancy vehicles, improving traffic flow and recovering gaseous vapors are some of the ways to protect the quality of air. These and other strategies will be looked at and recommended to local governments for their consideration and adoption. The Dixie area has been growing rapidly for many years and will continue to grow to build-out conditions and must look seriously at protecting its air shed quality.

The MPO anticipates continued growth in vehicle miles of travel, and the associated congestion and traffic delays that come with population growth. Some societal trends are catching hold toward the use of more energy efficient vehicles, and alternate modes of transportation such as bicycles, but the potential for air quality problems, especially for Ozone, is real for Utah's Dixie. The MPO will continue to endorse air-quality protection initiatives.

Integration of NEPA into the Planning Process

While the above elements are important components of the natural and built environment in the Dixie Region, each deserves its own thoughtful and comprehensive analysis on a project by project basis. At this point in the planning process, the Regional Transportation Plan does not attempt to perform a comprehensive Environmental Analysis or Environmental Impact Statement. Rather, the RTP is a list of projects that are deemed necessary to meet the growing regional transportation demands through 2050. Project alignments are mapped for planning and modeling purposes only with the expectation that adjustments may be necessary, or mitigation remedies required, as individual projects move through the environmental clearance processes as regulated by the National Environmental Policy Act (NEPA). Likewise, individual projects are not fully designed, engineered or final alignments set until that project is selected for funding priority and, where necessary, justified through an environmental clearance process.

Unified and Cooperative Planning Processes

In 2009, public and private planners throughout Utah began creating the unified planning tool “U-Plan” – a web-based information platform designed to allow road and utility planners to jointly access information on rights-of-way, infrastructure lines, environmental concern areas, habitat areas, and other built and natural resources. The Dixie MPO views U-Plan as an integral tool within the transportation planning process and encourages outside agencies to participate.

Objective and Goals

The Dixie MPO recognizes that there are many environmental challenges throughout its planning boundary that must be considered when planning and constructing regional transportation corridors. As a result, a number of strategies have been identified throughout this chapter.

Objective

The Dixie MPO understands the need consider these environmental challenges in the planning stages and will strive to incorporate environmental solutions into its planning process.

Goals

1. To support the environmental processes associated with requirements for federally funded projects.
2. To become more aware of the historical and geological issues of the area.
3. Commission necessary studies and investigations to support the planning process.
4. Stay abreast of changes in environmental requirements throughout the planning area and specifically those related to air quality with special emphasis on ozone.
5. Support the plans, strategies, and Task Force identified in this chapter.
6. Be committed to the Dixie MPO work plan as described above.