

4.1 CUMULATIVE IMPACT ASSESSMENT METHODOLOGY

This chapter outlines potential cumulative impacts related to the preferred alternative described in this environmental assessment (EA). Cumulative impacts are defined in the Council on Environmental Quality (CEQ) guidance 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 and regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR § 1508.7).

The CEQ guidance limits cumulative impact analysis to “important issues of national, regional, or local significance” (CEQ 1997). Therefore, not all issues identified for impact assessment in this EA are analyzed for cumulative effects at the same level. Because of the wide geographic scope of a cumulative assessment and the variety of activities assessed, cumulative and indirect impacts are commonly examined at a more qualitative and less detailed level than are direct impacts caused by the action alternatives. Federal Highway Administration (FHWA) guidance in the form of “Interim Guidance: Questions and Answers Regarding Indirect and Cumulative Impact Considerations in the NEPA Process” (January 31, 2003) was also considered during preparation of this section. The following resource areas were evaluated for potential cumulative impact:

- Wildlife
- Wetlands
- Threatened, Endangered, and Sensitive Species
- Vegetation
- Air Quality
- Land Use
- Farmland
- Socioeconomics
- Visual Resources

The following Resources were determined not to have substantial cumulative impacts:

4.1.1 Soils and Geology

Project-related impacts to soils and geology are limited to areas directly disturbed by construction activities and those areas immediately adjacent to directly disturbed areas. The past, present, and reasonably foreseeable future projects discussed below are all geographically distinct from the proposed improvements to US 550. While these other projects would have their own impacts to soils and geology from surface disturbing activities, the impacts to soils and geology from these projects are geographically distinct from US 550 and are not expected to have any measurable additive cumulative impacts to soils and geologic resources in La Plata County.



4.1.2 Noxious weeds

In accordance with the Colorado Weed Management Act, Colorado Department of Transportation (CDOT) is responsible for managing weeds in the CDOT right of way (ROW), and CDOT implements control measures for noxious weeds as needed. These control measures plus the construction weed control measures for the US Highway (US) 550 project would limit the spread of weeds within the project area. Thus, construction of the Preferred Alternative is not expected to contribute to cumulative noxious weed impacts in La Plata County.

4.1.3 Water Resources

Due to the construction of permanent erosion control Best Management Practices (BMPs) as part of the Preferred Alternative, there would be no cumulative impact to water quality and aquatic resources. Aquatic resources may improve as an indirect result of improvement in water quality if BMPs are successfully implemented.

4.1.4 Paleontology

Each alternative was evaluated for the presence of scientifically important fossil localities and none were found. Therefore, none of the alternatives would likely impact paleontological resources. It is not anticipated that construction of the Preferred Alternative would contribute to cumulative impacts to paleontological resources in La Plata County.

4.1.5 Environmental Justice

The project is not expected to contribute to cumulative impacts to environmental justice populations in La Plata County.

4.1.6 Noise

The noise levels have been projected using year 2025 traffic to account for future increases in traffic. Continuing traffic increases due to growth and development in the region have contributed to the existing noise environment and would contribute to the noise environment in the future. It is anticipated that this would occur with or without the proposed highway improvements. Future noise impacts can be avoided if future development efforts are sensitive to this issue in regards to the placement of residential properties

4.1.7 Historic and Archaeological Preservation

The proposed improvements to US 550 would not cause additive cumulative impacts to historic and archaeological resources within La Plata County. With the proposed monitoring and data recovery excavations (if necessary), there would be no loss of historical or archaeological resources from the US 550 project.



4.1.8 Hazardous Materials

There would be no cumulative impacts to hazardous material sites within La Plata County. All properties acquired for this project would be investigated for potential hazardous waste releases to the environment. Measures would be implemented to address potential releases from the project during construction.

4.1.9 Construction

There could be short-term cumulative impacts if other construction projects were occurring at the same time as reconstruction of US 550. However, these can be mitigated by coordinating schedules with the appropriate public and private entities.

4.2 ACTIONS CONSIDERED AND OTHER RELATED ACTIONS

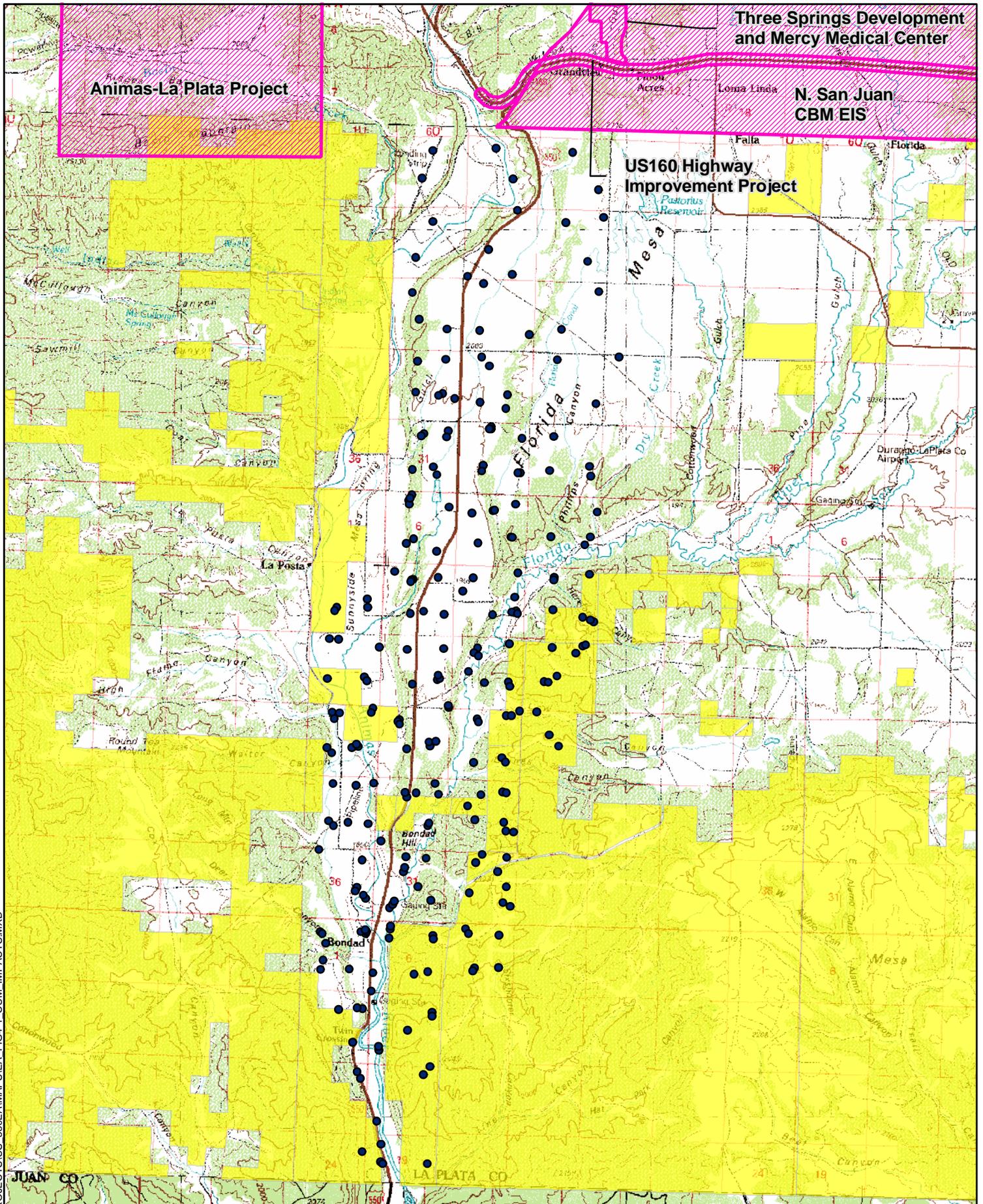
US 550 serves as a principal regional highway in the Four Corners area within La Plata County and is depicted in Figure 1.1-1 *Project Location*. La Plata County is considered to be the geographic area affected by the project for purposes of the cumulative impact analyses. In reviewing past projects and activities, a summary of more than 120 years of growth and change is included, as appropriate. Population growth figures for the past 20 years are presented.

The projects and other activities evaluated for cumulative impact analyses include continued community expansion within Durango and the corridor (Three Springs Development and Mercy Medical Center), existing and future oil and gas development on Southern Ute and non-United States Environmental Protection Agency (USEPA), transportation projects and highway improvement projects (US 160), the Animas-La Plata Water Storage Project, and the Northern San Juan Basin Coal Bed Methane Project. These activities and projects are shown relative to the US 550 project in Figure 4.1-1.

4.2.1 Past Projects

Development in La Plata County

The area in and around the City of Durango has been developing since the discovery of mineral resources in the 19th Century and the creation of the Southern Ute Indian Reservation. Consequently, land use patterns have been changing continually for more than 120 years, with some decades experiencing more rapid growth and change. An example of a past project that has impacted the land and resources with both its inception and abandonment is the Denver & Rio Grande Railroad. The City of Durango was established and founded as a result of the construction of the Durango & Silverton Narrow Gauge Railroad. The establishment of Durango and the finished construction of the railroad has changed the character of the valley over time and continues to impact the area. The growth of agricultural land use, and concurrent construction of reservoirs and irrigation ditches, affected a multitude of resources including wildlife, water, wetlands, historic properties, and socioeconomics. The current loss of that land use continues to impact these same resources.



Animas-La Plata Project

Three Springs Development and Mercy Medical Center

N. San Juan CBM EIS

US160 Highway Improvement Project

Legend



- Oil / Gas Facilities
- Southern Ute Tribal Lands
- ▨ Project Locations



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US 550 EA

**Figure 4-1.1
Cumulative Impacts
Projects in La Plata
County**

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More recently, La Plata County has grown since the 1950s from approximately 20,000 residents to 44,000 in 2000. This growth has fueled both residential and commercial development within and outside urban areas. The Denver & Rio Grande Railroad abandoned their line south of Durango in the 1960s. The abandonment of the railroad allowed the Colorado Department of Highways to consider the construction of a bypass of the central business district, which was constructed in the mid 1960s (Camino del Rio). Commercial establishments developed south of Durango after additional highway and bridge construction and annexation of the area by the City of Durango in the 1980s and 1990s. Future development and annexation in the project area is a continuum of the development of the previous four decades.

Oil and Gas Development

Large-scale development of oil and gas in the San Juan Basin was made possible by the construction of pipeline gathering systems built around 1950. Development has followed “boom and bust” cycles throughout the 1990s related to the presence of gas-gathering system infrastructure, the Arab oil embargo, and the Unconventional Fuel Tax Credit. One of these boom cycles took place in the 1990s with the development of the coalbed methane wells. According to *Oil and Gas Development on the Southern Ute Indian Reservation Final Environmental Impact Statement* (Department of Interior (DOI) and SUIT (SUIT) 2002), there are more than 26,000 wells in the San Juan Basin and more than 2,500 wells in the Ignacio-Blanco Field, which is almost entirely within the Southern Ute Indian Reservation.

Transportation Projects

Transportation projects within La Plata County have included construction of US 550 and reconstruction of US 160 (formerly State Highway (SH) 3) in the 1950s. As part of the construction, a portion of US 160 was realigned in the Grandview area. Land use in this area has since changed from rural agricultural uses to urbanized residential and commercial developments. In addition, other new alignments of US 550 and US 160 were constructed in and south of Durango. These projects have contributed to land use changes and impacts to some resources. More recent highway improvement projects have included an upgrade of the US 160/US 550 intersection and the US 160/SH 3 intersection, and improvement of a 3-mile length of US 550 north of the state line.

The Missionary Ridge Fire

The Missionary Ridge fire, which occurred in June of 2002, impacted about 73,000 acres of land in La Plata County. The human started fire was located on the Missionary Ridge Forest Road, which provides access to the Weminuche Wilderness Area, located approximately 10 miles northeast of Durango. Increased impacts to resources, such as water quality and wildlife habitat, from the fire will continue into the foreseeable future. Impacts from the fire continue to require the use of economic resources within La Plata County to mitigate the impacts.

4.2.2 Present Projects

Oil and Gas Development

The Bureau of Land Management (BLM) completed a Final Environmental Impact Statement (EIS) for oil and gas development on the Southern Ute Indian Reservation in July 2002. Planned development on SUIIT lands includes completing up to 70 injection wells and 636 production wells. According to the EIS, an estimated 1,306 acres of surface disturbance would result from well pads, access roads, pipelines, and other mineral related facilities. Non-tribal development could add another 67 injection wells, 519 coalbed methane wells, and 346 wells north of the Southern Ute line (DOI and SUIIT 2002). Reasonably foreseeable oil and gas development includes the continuation of oil and gas well development on Southern Ute Indian Reservation lands and on non-Tribal lands within the study area.

4.2.3 Reasonably Foreseeable Future Projects

Grandview Development

Reconstruction of the County Road (CR) 233/US 160 (West) intersection in Grandview began in early 2004 to serve as the access for the Mercy Medical Center, which also began construction in 2004. This access would also serve as the access for the Three Springs Development which is a mixed use development proposed to consist of 2,283 dwelling units, as well as commercial space, schools, and a recreational center on 682 acres.

Development in Grandview would accelerate with the construction of the new hospital. The Grandview area west of SH 172 has been annexed by Durango. Infrastructure development including roads, sewer, sidewalks, and water are in the design stages.

In response to Mercy Medical Center development, CDOT is planning safety improvements in Grandview that include construction of an auxiliary lane and a center turn lane from SH 172 to west of the CR 233 (West) intersection and reconstruction of the SH 172 intersection to provide an additional left-turn lane for northbound to westbound movements. These safety improvements are expected to be completed in 2005.

La Plata County Growth

Continued community expansion and highway improvements are primarily related to population increases in the area. La Plata County contains a blend of agricultural, industrial, residential, and recreational land uses. Population has increased substantially in the past decade and is expected to continue growing in the near future. The growing population creates demand on community facilities, especially housing, water, and roads. US 160, currently in the EIS stage, is expected to be upgraded as part of CDOT's statewide plans.

Transportation Projects

CDOT is nearing completion of an EIS to address potential impacts due to needed improvements for highway safety and capacity along the final steep grade section of US 550 to where it intersects with US 160, then east on US 160 to Bayfield.

Oil and Gas Development

Oil and gas development within and outside the Southern Ute Indian Reservation will continue for the foreseeable future.

The U.S. Forest Service (USFS) and BLM completed the *Northern San Juan Basin Coal Bed Methane Project Draft EIS* in June 2004. The Draft EIS proposes to drill approximately 300 coal bed methane wells, along with the support facilities, in the San Juan Basin, north of the Southern Ute Reservation. Completion of the project would address the public's increased demand on natural gas. The wells would be constructed on Federal, State or privately owned lands. Currently there are seven alternatives, including the No Action Alternative for the project. Cumulative impacts potentially expected from the proposed wells could include loss of roadless areas, loss of various types of wildlife habitat, and changes in water and air quality.

Animas-La Plata Project

The BLM completed *The Animas-La Plata Project Final Supplemental EIS* in July 2002. This Final Supplemental EIS evaluated the potential impacts of assuring long-term water supply to the Southern Ute and Ute Mountain Ute Indian tribes. Main goals of the project are to divert, pump, store, and convey water from the Animas River at Durango to provide water for both Indian and non-Indian municipal and industrial uses in Colorado and New Mexico.

Part of the Animas-La Plata Project is to construct Ridges Basin Reservoir. Approximately 120,000-acre-feet of water would be stored in Ridges Basin Reservoir. Ridges Basin Reservoir is located approximately 5 miles southwest of Durango and 5 miles west of US 550. Water would be pumped into the reservoir from the Animas River at a rate ranging between 14 cubic feet per second (cfs) to 56 cfs. Water would be returned to the Animas River from the reservoir via a 1,400-foot outlet tunnel.

As of September 2004, the project including the reservoir, pumping station, and pipelines was approximately 14 percent completed. The entire project is scheduled to be completed in 2010.

4.3 RESOURCES EVALUATED FOR CUMULATIVE IMPACTS

Past, present, and reasonably foreseeable future actions included in the cumulative impact assessment for the resource sections include: development within La Plata County (residential, commercial and agricultural), oil and gas development (on tribal and non-Tribal land), transportation projects (US 160 and US 550), the Animas-La Plata Project, and the Missionary Ridge Fire.

4.3.1 Wildlife

4.3.1.1 *Past Cumulative Impacts*

Substantial wildlife habitat has been lost as a result of past activities within the study area, such as residential, commercial, and agricultural development; original construction of highways in the area, including US 160 and US 550; and oil and gas related activities. Conversely, agricultural practices have created new habitat for wildlife, such as irrigation ditches, stock ponds, and seeps. However, the majority of land converted to agricultural uses has generally reduced habitat for most of the wildlife that may have historically inhabited the US 550 study area. Farming practices have contributed to fragmented habitat and the avoidance of the area by some species. Other animals that are habitat generalists (i.e. adaptable to a variety of habitats and conditions) are not affected by changing land uses to the extent that a specialized species is affected. Therefore, many species that avoid human presence were displaced from the area long ago.

Development in La Plata County

Residential and commercial development in the study area and surrounding regions, such as Durango, has also contributed to wildlife habitat loss and fragmentation. The majority of the development in La Plata County has occurred in unincorporated areas, which has converted piñon-juniper woodland and agricultural land into rural residential subdivisions. Some wildlife species such as several birds, coyotes, foxes, and deer have adapted to human manipulated environments to some extent, but may continue to suffer impacts as more land is developed.

Oil and Gas Development

The San Juan Basin is the largest producer of coalbed methane in the world. Past oil and gas operation has resulted in habitat loss from construction of wellpads, roads, pipelines, and facilities; habitat degradation; and disturbance to wildlife through noise and traffic due to increased human presence. According to the *Oil and Gas Development on the Southern Ute Indian Reservation Final EIS* (DOI and SUI 2002), the combined effects from construction and operation of wells impact biological resources directly and indirectly in the region through disruption of normal behavior, habitat loss and fragmentation, and disturbance to deer and elk migration routes (DOI and SUI 2002). These impacts are discussed further below.

Transportation Projects

Because most animals avoid roads, the original construction of US 550 resulted in lost and fragmented natural habitat, and created a barrier for animals to cross. Habitat connectivity across highways and the ability of animals to move safely across them is important for a species to access food resources or cover and for dispersal. Many species, including mule deer, have large home ranges, depend on specific areas during certain seasons, and travel while foraging; and would inevitably need to cross a road. At the community scale, animal movement is important because traveling animals disperse seeds and spores helping to maintain biodiversity. Finally, animals must be able to mate with different members of their species in order to prevent isolation of populations, which may lead to extinction as well as to prevent inbreeding among individuals (Conrey and

Mills 2001, Belisle and St. Clair 2001). Animals exhibit behavioral alterations due to roads and suffer increased mortality from vehicle collisions as they utilize different habitat types and migrate seasonally across US 550.

Missionary Ridge Fire

The Missionary Ridge Fire impacted approximately 73,000 acres of land within La Plata County. The impact from the fire to wildlife within the area was predominately caused by loss of habitat. Vegetation within the fire was diverse due to the variability of elevation and topography within the Missionary Ridge. Habitat impacted by the fire primarily consisted of: Ponderosa pine, warm-dry mixed conifer, mountain grassland, piñon-juniper, mountain shrubland, aspen, cool-moist mixed conifer, spruce-fir, and riparian. (Wilderness Society, 2003)

4.3.1.2 *Present and Future Cumulative Impacts*

The US 550 project would contribute to permanent displacement of wildlife due to loss and fragmentation of habitat. The US 550 project would result in faster speeds and a wider footprint. In addition, traffic volumes would continue to increase due to population growth, land-use changes and other factors. Traffic speed and volume are positively correlated with increased wildlife collisions (Clevinger and Waltho 1999). The increased width of US 550 would create a much larger physical obstacle for wildlife to cross resulting in increased mortality from auto collisions with wildlife as well as fragmented habitats and populations due to road avoidance. However, the four wildlife crossings planned for this project would help mitigate these impacts. Other highways under consideration for expansion, such as adjacent US 160, would contribute to fragmentation and affect deer and elk migration routes. In addition, continued mortality from vehicle collisions on major highways would affect survivorship of species that are particularly vulnerable to road-associated mortality. CDOT is currently conducting research on how to reduce wildlife/vehicle collisions on major highways and to reduce fragmentation along these corridors.

Grandview Development

Land disturbances associated with the Grandview Development have and would continue to occur into the reasonably foreseeable future. Wildlife located within previously disturbed areas have most likely dispersed to adjacent areas. However, continued development of the Grandview area would most likely impact wildlife through removal of habitat. However, positive measures have been implemented for riparian species at the Three Springs Development through the creation of 7.5 acres of wetland off site and creation, enhancement, preservation of 50 acres of wetland on site.

La Plata County Growth

Community expansion, especially construction of residential subdivisions and commercial property and associated roads would reduce and further fragment wildlife habitat. The population of La Plata County is steadily expanding, with approximately 3.7 percent population increase annually in the Durango area (US Census 2000). According to the Florida Mesa Land Use Plan, the population within La Plata County is expected to increase to 68,385 by 2020, requiring the construction of an additional 2,000 housing

units associated with the Three Springs Development (La Plata County 1999). The Florida Mesa Land Use Plan also outlines plans to keep development clustered to maintain rural attributes and maintain existing agricultural land use. While concentrating development into clustered areas would benefit wildlife populations, especially deer and elk, overall, any development would impact wildlife to some extent by reducing and fragmenting habitat.

Oil and Gas Development

As outlined in the *Oil and Gas Development on the Southern Ute Indian Reservation Final EIS* under the Agency and Tribal-Preferred Alternative, 706 new wells would be constructed with disturbance of up to 2,160 acres (DOI and SUIIT 2002). Well and road construction would occur in elk winter range, severe winter range, and winter concentration areas; and in mule deer winter range and severe winter range. However, the primary areas of well development would not impact deer and elk migration routes and the majority of the deer concentration areas.

Wildlife are expected to incur long-term cumulative and indirect impacts from well development. Impacts such as displacement, as a result of operation and maintenance of well facilities and associated noise and human activity are expected to occur. Well operation would reduce water quality for waterfowl and other riparian dependent species. Impacts are expected to extend 0.25 mile from each well site, road, or compressor station. Construction and operation disturbance would occur on 28 percent of elk winter concentration areas in the SUIIT study area and 13 percent in the region; and 8 percent of mule deer winter concentration areas in the SUIIT study area and 4 percent in the region. Disturbance would also occur on 8 to 10 percent of mule deer and elk general winter range and severe winter range in the region (DOI and SUIIT 2002). Proposed mitigation to reduce impacts includes restriction of well drilling activities to summer months in winter range and placement of major developments away from migration corridors (DOI and SUIIT 2002).

Animas-La Plata Project

The Animas-La Plata Water Storage Project would have significant impacts to wildlife populations through habitat loss and disturbance. The Animas-La Plata project would result in loss of approximately 1,500 acres of elk and mule deer winter range. Operation of the Durango Pumping Plant could deplete water flows by up to 56 cfs from the Animas River, which would limit the ability of trout to reproduce in the Animas River. This loss of trout carrying capacity is estimated to be less than 15 percent; however, rainbow and cutthroat trout would be stocked and seasonal bypass flows would be implemented to mitigate these impacts. Other mitigation for the Animas-La Plata Water Storage Project would include monitoring, stopping pumping activities when flows are less than seasonal standards, and constructing or acquiring a fish hatchery (USDI 2000).

4.3.1.3 Overall Cumulative Impacts

Cumulative effects of expansion of US 550, combined with past, present, and reasonably foreseeable future projects are likely to have long-term and moderate impacts on wildlife species inhabiting the study area and adjacent areas. For deer and elk, this impact would

primarily affect migration routes and loss of habitat. The overall cumulative impact of wildlife habitat loss is estimated at 77,460 acres or greater in La Plata County within the next 20 to 25 years. Increased oil and gas development, as well as increased community development would further fragment and decrease the amount of natural habitat available for wildlife.

4.3.2 Wetlands

4.3.2.1 *Past Cumulative Impacts*

Development in La Plata County

The distribution of wetlands in La Plata County has been strongly influenced by past water developments, especially diversions for irrigated agriculture beginning in the 1880s. Irrigated agriculture and transport of water through unlined ditches has created new wetlands in former upland areas such as Florida Mesa and in former intermittent drainages, from ditch seepage, irrigation return flows, and irrigation of poorly drained soils.

Oil and Gas Development

Wetlands have been impacted by the creation and construction of oil and gas facilities. Wetlands are primarily impacted by oil and gas development by displacing small wetlands dispersed throughout La Plata County because the oil and gas resources are broadly distributed according to established spacing patterns.

Missionary Ridge Fire

Approximately 0.2 percent of the vegetation (146 acres) within the 73,000 acre Missionary Ridge Fire was wetland vegetation. Of the 0.2 percent classified as wetland vegetation, 0.1 percent (73 acres) was left unharmed by the fire while the other 0.1 percent (73 acres) was totally consumed. (Wilderness Society, 2003)

4.3.2.2 *Present and Future Cumulative Impacts*

Oil and Gas Development

Future impacts to wetlands/riparian habitat from oil and gas development on the Southern Ute Indian Reservation could affect as much as 270 acres from surface disturbance, and may affect additional areas indirectly from surface water depletion (DOI and SUIIT 2002). Direct impacts would be minimized during planning and permitting for individual wells and ROW, and would be mitigated where needed. Future oil and gas development on non-Tribal lands would have similar impacts and mitigation requirements.

Grandview Development

Approximately 7.5 acres of offsite wetland mitigation have taken place for impacts to wetlands from the Three Springs Development Project. The offsite mitigation is occurring at the Animas River Wetland Mitigation site located north of Durango. A wetland mitigation plan is being implemented for onsite creation, preservation or enhancement of approximately 50 acres of wetland (Sugnet, 2005).

Further cumulative impacts associated with Grandview Development are further discussed below in La Plata County Growth.

La Plata County Growth

Community expansion may involve construction of houses, roads, and utility lines in wetlands, but are not likely to result in substantial wetland losses. Indirect impacts, however, may occur from community expansion and changes in land use. Increasing residential development and subdividing of farm fields is likely to cause changes in the movement, use, and disposal of irrigation water. Wetlands may diminish in size or be eliminated if their hydrology is substantially affected by these changes. For example, wetlands supported by seepage from canals or ditches may be eliminated if the canals or ditches are abandoned. Wetlands supported by return water flows may be diminished or lost if return water flows are eliminated or routed to other locations, and flow from hillside seeps may diminish where there are reductions of irrigation in adjacent uplands. Although these changes may cause substantial cumulative loss of wetlands, irrigation-induced wetlands are generally not jurisdictional under the Clean Water Act (CWA), and do not have any specific protection under other federal or state laws.

Transportation Projects

Impacts to wetlands would primarily be through transportation projects, including the widening of State Highway 160 and other major roadways. Expansion of US 160 has affected wetlands, but wetland losses will be mitigated as required by Section 404 permits and CDOT policies, resulting in no net loss of wetlands.

Animas-La Plata Water Storage

The Animas-La Plata Water Storage Project, under refined Alternative 4, would fill or inundate 121 acres of wetland/riparian habitat at the Ridges Basin Site, would destroy another 13 acres downstream of the dam, and could result in an additional 200 to 300 acres of wetland/riparian impacts from construction of water pipelines (USDI 2000). Permanent impacts to wetlands will be compensated at a mitigation ratio sufficient to replace or exceed the losses.

4.3.2.3 *Overall Cumulative Impacts*

It is estimated that approximately 700-800 acres of wetland would be or have been disturbed from activities occurring within the past 5-10 years and those activities occurring in next 20 years. CDOT mitigates for both jurisdictional and non-jurisdictional (e.g., irrigation) wetlands and the US 550 project would not contribute to cumulative losses of non-jurisdictional wetlands.

4.3.3 Threatened, Endangered, and Sensitive Species

4.3.3.1 Past Cumulative Impacts

Development in La Plata County

Past growth and development within La Plata County has contributed to habitat fragmentation and reduction for threatened, endangered, and sensitive species. The growth in the residential population and related development of commercial operations and roads has through time decreased habitat for various threatened, endangered, and sensitive species.

Oil and Gas Development

Impacts to threatened, endangered and sensitive species from past oil and gas development include surface disturbances from construction of well pads and right-of-way (access and pipelines, which may have impacted the species and/or habitat, as well as noise and activity disturbances from project operations. Additionally, impacts to aquatic threatened, endangered or sensitive species, such as fish, may include possible stream depletions from well drilling, hydro-fracture operations, and production of water from the Fruitland Formation; and water quality degradation from accidental spills of petroleum products and produced (saline) water.

The cumulative effects were calculated within the *Oil and Gas Development on the Southern Ute Indian Reservation Final EIS* (including existing oil land gas development and the SUIT Preferred Alternative and existing well pad development) and are displayed in Table 4.3-1.

**Table 4.3-1
Habitat Disturbance Associated with Oil and Gas Development**

Species of concern	Habitat disturbed in acres
Bald Eagle	2,989 winter range and 719 acres winter concentration areas
Burrowing Owl	Not calculated
Southwestern Willow Flycatcher	484 wooded riparian habitat
Gray Vireo	Not calculated

Transportation Projects

Impacts from transportation projects have contributed to habitat fragmentation and reduction for threatened, endangered, and sensitive species. Expansion and construction of roads has caused an increase in traffic on roads and thereby has caused an increase in wildlife killed on the road, possibly including threatened, endangered, and sensitive species.



Missionary Ridge Fire

Impacts from the Missionary Ridge Fire included the loss of approximately 73,000 acres of habitat that could potentially be used for some threatened, endangered, and sensitive species. It will take many years for the burned area to return to natural conditions.

4.3.3.2 Present and Future Cumulative Impacts

This cumulative impacts discussion includes only those species discussed in Section 3.4.2, *Environmental Consequences*, in which impacts are expected. Federal threatened and endangered species known or with potential to occur in the US 550 study area includes bald eagle, southwestern willow flycatcher, Colorado pikeminnow, and razorback sucker. These species are protected under the Endangered Species Act (ESA) and mitigation is required to reduce or eliminate impacts to these species as a result of any projects occurring in the region. Burrowing owl is listed as threatened by the State of Colorado. State listed species are provided a lower level of protection than federally-listed species. Sensitive species, gray vireo and roundtail chubs, are not given any formal protection and are therefore more likely to incur cumulative effects from widening and realignment of US 550 and other regional projects or land use changes.

Bald Eagle

Current cumulative impacts to bald eagles are electrocution from power poles, resulting in fatal burns or heart failure; habitat loss, and mortality from vehicle collision while eating roadkill. Impacts described in the *Oil and Gas Development on the Southern Ute Indian Reservation Final EIS* combined with other impacts are expected to result in minor adverse effects to bald eagles in the SUT region (DOI and SUT 2002). The expansion of US 550 is not expected to contribute to cumulative effects to bald eagles. The mitigation described in Section 3.4.3, *Mitigation Measures (Bald Eagle)* and Section 3.2.3, *Mitigation Measures (Birds)*, would decrease the likelihood for any adverse effects to bald eagles as a result of project implementation.

Burrowing Owl

Burrowing owls are declining in Colorado due to conversion of native grassland to agricultural land or residential/commercial developments. These changing land uses have and continue to occur in the study area, and burrowing owl habitat is scarce. Cumulative impacts from construction of US 550 and other regional present and future projects are expected to be minimal with adherence to suggested mitigation for burrowing owls as outlined in Section 3.4.3, *Mitigation Measures (Preferred Alternative)*.

Southwestern Willow Flycatcher

Past, present, and future cumulative impacts to southwestern willow flycatcher in the study area and surrounding region include:

- Direct effects from cowbird nest parasitism and predation (Finch and Stoleson 2000);
- Population depressions or local extinctions of small populations due to habitat fragmentation or loss from development; and
- Habitat loss from land use practices such as agricultural and community development.

Rural residential development in La Plata County and northern New Mexico has likely led to an increase in predation on songbirds from domestic cats and dogs. Populations of other nest predators such as raccoons, raptors, magpies, crows, and grackles may also increase with increased urbanization and fragmentation. The potential for nest parasitism by brown-headed cowbirds may increase due to more favorable habitat conditions for cowbirds, which include bird feeders, as well as areas of mowed grass, such as lawns and horse corrals. High rates of brown-headed cowbird parasitism have resulted in declines of southwestern willow flycatchers and other bird populations due to nesting failure (Finch and Stoleson 2000).

Gray Vireo

Development and other land use changes cumulatively impact gray vireo populations in the study area through the loss of piñon-juniper nesting habitat, which could result in increased nest parasitism and predation as habitat is fragmented. Brown-headed cowbirds frequently parasitize gray vireo nests. Various projects are likely to destroy and fragment piñon-juniper woodland, which makes habitat more suitable for brown-headed cowbirds.

Special Status Fish

A depletion in the San Juan Basin of approximately 63 acre-feet for construction of the proposed US 550 improvements would contribute to cumulative impacts to special status fish. Colorado pikeminnow, razorback sucker, and roundtail chub, would incur cumulative effects from the additive water depletions associated with oil and gas well drilling and other upstream water developments, including the Animas-La Plata Water Storage Project.

4.3.3.3 Overall Cumulative Impacts

Cumulative effects of expansion of US 550, combined with past, present, and reasonably foreseeable future projects are likely to have long-term and moderate impacts on threatened, endangered, and sensitive species inhabiting the study area and adjacent areas. However, with the proper implementation of mitigation measures cumulative impacts can be avoided or mitigated.

4.3.4 Vegetation

4.3.4.1 Past Cumulative Impacts

Development in La Plata County

The population of La Plata County is expected to continue to increase. The population of the Florida Mesa planning district is expected to increase by 85 percent, with an additional 2,000 housing units associated with the Three Springs Development. Assuming that 1/3 of these housing units are in natural habitats and that about one acre of vegetation would be removed for construction of roads, utilities, and new housing, the total loss of natural vegetation would be about 667 acres. Most of this loss is expected to occur in moderate to dense piñon-juniper woodland. There may be minor losses of

riparian habitat, but the Florida Mesa District land use plan identifies preservation of riparian habitat as a goal, and encourages new development to be located outside of the riparian corridors (La Plata County 2001).

Oil and Gas Development

The cumulative impacts of past oil and gas development has recently been evaluated in an EIS that includes the US 550 area. *Oil and Gas Development on the Southern Ute Indian Reservation Final EIS* evaluated impacts within the reservation boundary, including approximately 200,000 acres of Tribal land and 221,000 acres of non-Tribal land (DOI and SUIT 2002). The EIS reported the following cumulative impacts to native vegetation types that would also be affected by US 550 are shown in Table 4.3-2

**Table 4.3-2
Cumulative Vegetation Impacts**

Vegetation Type	Acres of Resource in study area	Current Disturbance (acres)	Current Disturbance (%)	Future Disturbance (acres)	Future Disturbance (%)	Cumulative Disturbance (%)
Grassland/ Shrubland	168,018	8,917	5.3	2,558	1.5	6.8
Medium and High Density Piñon-Juniper	136,483	4,389	3.2	2,604	1.9	5.1
Wooded Riparian	8,156	220	2.7	272	3.3	6.0

Missionary Ridge Fire

The Missionary Ridge Fire impacted approximately 73,000 acres of land within La Plata County. Vegetation within the fire was diverse due to the variability of elevation and topography within the Missionary Ridge.

The composition of vegetation lost in the fire is displayed in Table 4.3-3 below.

**Table 4.3-3
Proportion of Vegetation Types in Burned Area**

Vegetation	Percent vegetation of burned area
Ponderosa pine	16.7
Warm-dry mixed conifer	17.7
Mountain grassland	2.5
Piñon-juniper	0.3
Mountain shrubland	3.2
Aspen	21.5
Cool-moist mixed conifer	26.9
Spruce-fir	11
Riparian	0.2

Source: The Wilderness Society, 2003.



4.3.4.2 Present and Future Cumulative Impacts*Oil and Gas Development*

Future disturbance to vegetation communities from oil and gas development is displayed in Table 4.3-2.

Grandview Development

The ground disturbance from the Three Springs Development is known to be approximately 800 acres of which an unquantified amount was vegetation. A 75-acre park is expected to be constructed within the area and landscaping would be planned for appropriate areas. It is not expected that natural vegetation would occur once the project is complete.

La Plata County Growth

Present and future cumulative impacts from La Plata County Growth are the same as those listed under past cumulative impacts.

Transportation Projects

Several highway improvement projects are planned, including upgrading of US 160 east of Farmington Hill, improvements to county roads, and other improvements such as park and ride facilities. Most of these projects would occur along existing facilities and losses of natural vegetation have not been quantified.

Animas-La Plata Project

The Animas-La Plata Water Storage Project would cause the loss of 514 acres of sagebrush, 221 acres of piñon-juniper, and 121 acres of riparian and wetland habitat at the Bridges Canyon site west of the Animas River (USDI 2000). This project would have additional impacts from other project facilities and distribution pipelines, but losses cannot be quantified because locations have not been selected.

Other actions potentially affecting vegetation are flood control, which may limit establishment of new cottonwood stands, and grazing, which can eliminate or suppress seedling trees and shrubs. Many noxious weeds are especially adapted to riparian areas and would degrade habitat quality where they become established.

4.3.4.3 Overall Cumulative Impact

These various projects and activities would cumulatively reduce the amount of sagebrush, piñon-juniper, and riparian vegetation in La Plata County, but most of these communities (more than 90 percent) would remain. Most of the impacts would occur from oil and gas development, and the US 550 project would contribute a relatively minor amount to the cumulative loss.

4.3.5 Air Quality

4.3.5.1 *Past Cumulative Impacts*

Development in La Plata County

Increases in the number of tourists and local residents within La Plata County over the years has caused air pollution increases primarily from increased vehicle emissions, travel on unpaved roads, and increased wood burning. However, the increase in paved roads through time has decreased road dust and the use of natural gas has reduced the use of wood burning stoves and fireplaces.

Oil and Gas Development

It is expected that past oil and gas development within La Plata County have contributed to localized short-term increases in carbon monoxide (CO), nitrogen dioxides (NO₂), particulate matter less than ten micrometers in diameter (PM₁₀), and sulfur dioxides (SO₂) concentrations. La Plata County has been in attainment for USEPA criteria pollutants; therefore, it is not expected that the past air pollutant contributions from the oil and gas facilities were significant to air quality degradation.

Missionary Ridge Fire

The Missionary Ridge Fire had a short-term negative impact on air quality. The air particulates released into the air from the fire were very intense for the duration of the fire and shortly thereafter. Remaining air impacts from the fire should be unnoticeable at this time.

4.3.5.2 *Present and Future Cumulative Impacts*

Grandview Development

The increased traffic and growth associated with the Grandview area, including Three Springs Development and Mercy Medical Center would increase traffic and potentially increase air emissions. The exact amount of growth and increase in air particulates can only be speculated at this time.

La Plata County Growth

Increases in the number of tourists and local residents would cause air pollution increases primarily from increased vehicle emissions, travel on unpaved roads, and increased wood burning. However, these potential increases in emissions would be moderated by improvements in motor vehicle emission control technology, increases in the amount of paved roads, and the expected increased availability of natural gas as a primary source of heat.

Oil and Gas Development

Based on impacts projected in the Oil and Gas Development on the Southern Ute Indian Reservation, no significant, adverse, direct or indirect impacts on air quality are anticipated from implementation of the project. Based on separate assessments predicting potential near-field air quality impacts, localized short-term increases in CO,

NO₂, PM₁₀, and SO₂ concentrations would occur, but maximum concentrations would be well below applicable state and National Ambient Air Quality Standards (NAAQS).

Transportation Projects

During the construction period of county road, highway, and other road construction or modification, air quality is negatively affected by fugitive dust emissions, and vehicle delays combined with exhaust emissions from construction equipment causing elevated levels of some pollutants. However, these emissions are temporary and intermittent and are not expected to result in any considerable or long-term air quality impacts.

Animas-La Plata Project

The Animas La Plata Project is projected to increase fugitive dust and construction equipment exhaust emissions from the construction of the Durango Pumping Plant, Ridges Basin Inlet Conduit, Ridges Basin Dam, and the Navajo Nation Municipal Pipeline. However, there would be no long-term project air quality impacts due to the project.

4.3.5.3 Overall Cumulative Impacts

Currently La Plata County is in attainment for all USEPA criteria pollutants. The preferred alternative for US 550 is not expected to result in a violation of the NAAQS. Cumulative impacts to air quality from US 550 are expected to be temporal and can be controlled. Long-term cumulative impacts to air quality from US 550 are not expected.

4.3.6 Land Use

4.3.6.1 Past Cumulative Impacts

Development in La Plata County

The population of La Plata County increased 36.1 percent from 1980 to 2000. During the same period, the population of the City of Durango increased 19.5 percent. The population of two census block groups that include the US 550 corridor increased 67.8 percent. Most of this new residential growth has occurred on lots greater than three acres. The population growth in La Plata County and Durango has resulted in additional housing units and the establishment of new businesses to serve the increased population. Most of the growth of new businesses has occurred north of the project study area.

Oil and Gas Development

Oil and gas development within the project area has been occurring through time. Land use changes from forest, meadow, range, and agricultural land have been developed with oil and gas facilities over the years. Loss of land value due to visual impacts and from loss of use of the land has resulted from oil and gas development.

Missionary Ridge Fire

The Missionary Ridge Fire burned naturally vegetated areas, houses, campsites etc. Through time the burned area is expected to return to its previous land uses.

4.3.6.2 Present and Future Projects

Grandview Development

Impacts from the Grandview development are similar to those discussed below in La Plata County Growth.

La Plata County Growth

According to Colorado Demography Section (CDS) (2003), the La Plata County population is projected to increase by approximately 24,500 people to approximately 68,385 by 2020, and the number of housing units would increase by approximately 11,800 by 2020. If the robust growth rate experienced during the 1990s continues, the county's population would exceed 83,000 by 2025. Based on CDS (2003) projections, the population of the Florida Mesa Planning District, which encompasses the US 550 corridor, is expected to increase to about 11,000, an 85 percent increase from the present population. The number of new housing units would likewise increase by approximately 2,000 units in this planning district.

Future commercial development would most likely increase in proportion to additional population and housing units as businesses respond to the demands for goods and services of new year-round and seasonal residents, as well as tourists. Most new commercial development is expected to occur north of the study area.

Oil and Gas Development

The San Juan Basin, which includes southern La Plata County, is already substantially developed for oil and gas production. As of 2000, there were more than 26,000 wells in the basin, including those in New Mexico (DOI, 2000; SUI, 2003a). In some highly productive areas where geologic formations overlap, some 640-acre sections contain more than a dozen coalbed methane wells, while in less productive areas, there are only one or two wells per section.

According to the *Oil and Gas Development on the Southern Ute Indian Reservation Final Environmental Impact Statement* (DOI, 2000; SUI 2003a), no significant impacts on land use are expected. While most of the acreage in the region of influence (south of the Southern Ute Indian Reservation line) is used for farming and ranching, minimal acreage of agricultural land, including prime farmland, would be replaced by new well construction. North of the Southern Ute Indian Reservation line, a variety of factors, including geology, steeper topography, and existing residential development and roads, limits the number of appropriate locations for new wells. Thus, land use impacts from future gas development north of the Ute line are not considered to be substantial.

Transportation Projects

In the *La Plata County Comprehensive Traffic Study 1999* (La Plata County, 1999), the La Plata County Planning Department developed a plan for improvements to the county road network. Recommended improvements were based on projected traffic volumes through 2020 on county roads, which were in part determined by projected distribution of future residential and commercial growth throughout the county. The study identifies a proposed 'park and ride' location in the vicinity of US 550 and CR 318. Also, a paved bike route is indicated along US 550 between CR 318 and Farmington Hill. In general,



recommended road improvements are largely in response to existing and projected spatial distribution of community expansion. Cumulative impacts on land use from improvements to La Plata County roads are included in community expansion cumulative impacts.

CDOT is nearing completion of an EIS to address potential impacts due to needed improvements for highway safety and capacity along the final steep grade section of US 550 to where it intersects with US 160 then east to Bayfield. With the implementation of a selected alternative as recommended by the record of decision, the US 550/160 connection and the US 160 transportation corridor may undergo substantial modifications.

Animas-La Plata Project

According to the *Animas-La Plata Water Storage Project Final Supplemental Environmental Impact Statement* (DOI, 2000), the Preferred Alternative, Refined Alternative 4, approved by Congress in December 2000, would have “less than significant” impacts on land use other than impacts on the immediate area covered by or surrounding the proposed Ridges Basin Reservoir.

Development associated with additional water allocated for municipal and industrial growth could create conflicts with rural atmosphere goals and objectives stated in some of the district land use plans. Additional water may increase development pressure in rural areas near the City of Durango or near water conveyance facilities. However, proposals for new development must be approved by La Plata County or the City of Durango. These entities would face the task of balancing rural atmosphere goals with the need to accommodate new growth. Thus, cumulative impacts on land use from the Animas-La Plata Water Storage Project are included in community expansion cumulative impacts.

4.3.6.3 *Overall Cumulative Impact*

For the preferred alternative, 145 parcels would be partially or completely acquired, resulting in the relocation of 12 residential units and 3 businesses

According to the Durango Area Association of Realtors, the Multiple Listing Service (MLS) had 1,003 residential listings and 51 commercial space listings on October 31, 2003. Based on these MLS listings, sufficient replacement residential and commercial property is available for relocating residents and businesses. Even assuming the unlikely “worst case” scenario whereby all parcels were completely acquired by CDOT for highway improvements, replacement property is available in La Plata County.

There are approximately 10,300 vacant parcels within La Plata County, according to La Plata County Assessor records, ranging from small subdivision lots to large, undeveloped agricultural tracts. Since the amount of commercial and residential square footage typically expands in proportion to increased population, some of the existing vacant tracts would be developed for commercial and residential purposes, providing opportunities to relocate displaced individuals and businesses within La Plata County.

4.3.7 Farmland

4.3.7.1 *Past Cumulative Impacts*

Development in La Plata County

The loss of farm and ranch land in Colorado is accelerating. Between 1978 and 1992, the average annual loss was 90,000 acres. The most recent 10-year period shows a much higher average annual loss of 140,000 acres per year (Colorado Department of Agriculture 1997). As La Plata County developed, farmland was lost or transformed through urbanization, road building etc.

Oil and Gas Development

The development of oil and gas wells have caused conversion of farmlands through time.

Missionary Ridge Fire

The Missionary Ridge Fire is not believed to have impacted any land designated as farmland.

4.3.7.2 *Present and Future Cumulative Impacts*

Grandview Development

Impacts from Grandview development are similar to those discussed below in La Plata County Growth.

La Plata County Growth

Future development in La Plata County includes a potential large-scale commercial development and continued residential development that would impact irrigated farmland. Continued growth within the county would continue to impact and convert farmland into the future.

Many of the new housing units would probably be built on lots within existing subdivisions, but new subdivisions would inevitably be created (such as the Three Springs Development), some of which would result in loss of agricultural land. If current suburban development trends continue, existing agricultural land could be divided into many new residential lots, even though there are approximately 8,000 vacant lots within existing subdivisions. Incremental adverse impacts on agriculture from US 550 improvements are likely to be insignificant compared to potential adverse impacts from community expansion.

Oil and Gas Development

No specific impacts to farmlands were predicted with associated future oil and gas development.

Transportation Projects

Farmland impacted by the expansion of US 160 would occur. The actual amount impacted depends on the final Preferred Alternative chosen but is estimated to be approximately 88 acres. It is estimated that the 88 acres of irrigated land potentially



impacted by the US 160 project would have a negligible effect on overall resources of irrigated land in the region.

Animas-La Plata Project

As with the general land use impacts discussed in Section 3.1 Land Use, cumulative land use impacts on agriculture from the Animas-La Plata Water Storage Project and La Plata County road improvements are closely associated with community expansion impacts. Impacts on agriculture from a continuation of coalbed methane production are difficult to quantify because it is uncertain how many wells would be located on productive agricultural land. Acreage of agricultural land, including prime farmland, would be replaced by new well construction.

4.3.7.3 *Overall Cumulative Impact*

None of the projects evaluated for cumulative effects analysis, including the Animas-La Plata Project, oil and gas development, and other highway improvement project, predict any significant impact on prime farmlands, as defined by the Natural Resource Conservation Service (NRCS). US 550 is expected to contribute a negligible cumulative amount of farmland conversion with project implementation.

4.3.8 **Socioeconomics**

Social

4.3.8.1 *Past Cumulative Impacts*

Development in La Plata County

La Plata County growth over the past 20 years has had varying impacts on community cohesion within Grandview, Gem village, and Bayfield. While Grandview was more rural in the 1980s and traffic volumes were less than traffic levels today, the community was bisected by road construction. With the opening of new businesses, virtually all of which are vehicular dependent rather than pedestrian-oriented, and increased traffic, community cohesion has decreased over the years.

Oil and Gas Development

The socioeconomic impacts of oil and gas development are primarily economic in nature, pertaining to tax revenue and employment.

Missionary Ridge Fire

The Missionary Ridge Fire did not contribute to socioeconomic factors.

4.3.8.2 *Present and Future Cumulative Impacts*

Grandview Development

The current mix of agricultural, rural, suburban, and urban land uses in the Grandview area are likely to become entirely urbanized during the next 20 years. Residential properties closest to the highway corridor, including those that would be affected by



proposed improvements to US 550, are likely to be converted to commercial uses. With Grandview absorbing much of La Plata County's anticipated commercial growth and with large-lot residential and agricultural uses specified in the Florida Mesa District Plan, it is unlikely that new commercial uses, other than home occupations or agricultural businesses, would be permitted along the US 550 corridor.

La Plata County Growth

It is likely that the trend to convert agricultural land to large-lot residential development would continue in the highway corridor, resulting in more traffic, since more people would commute to work. The SUIT would control development on Tribal lands along the US 550 corridor. Population growth would occur regardless of the reconstruction of US 550.

Oil and Gas Development

The socioeconomic impacts of oil and gas development are primarily economic in nature, pertaining to tax revenue and employment. Impacts of new wells on population distribution within La Plata County are likely to be negligible, although population density of future development in the immediate vicinity of existing or proposed wells could be reduced if buffer areas are established to mitigate noise and visual impacts.

Transportation Projects

Other recommended road improvements in La Plata County are largely in response to existing and projected spatial distribution of community expansion. Major growth areas are located northeast and northwest of the study area. In April 2001, the Grandview area was included within the Durango Urbanizing Area by the City of Durango and is included in the area plan that was completed during autumn 2003. The existing intersection of US 160 and US 550 forms the southwestern boundary of the Grandview Area Plan.

A mix of commercial and residential uses has occurred along La Posta Road (CR 213) west of the study area during recent years, particularly in the vicinity of Animas Air Park. La Plata County completed construction of a new bridge across the Animas River during 2004, which replaced existing access from the north via a narrow, winding county road. La Plata County has limited new residential and commercial development along CR 213 because of the road's characteristics. In response to construction of the new bridge, which would make higher density development more feasible, the City of Durango is planning to develop an area plan for the La Posta Road area.

Animas-La Plata Project

The socioeconomic impacts for the Preferred Alternative (Refined Alternative 4) that are described in the *Animas-La Plata Water Storage Project Final Supplemental EIS* (USDI 2000) are more economic than social in nature.

4.3.8.3 Overall Cumulative Impact

Social impacts from community expansion are much greater than other activities evaluated for cumulative impacts (Animas-La Plata Project, oil and gas development, and other highway projects). The trend to convert agricultural land to large-lot residential



development is anticipated to continue over the next 20 years, displacing some current residents and businesses. The expansion of US 550 under the Preferred Alternative would contribute to this trend by displacing 12 residences and 3 businesses.

Economic

4.3.8.4 Past Cumulative Impacts

Development in La Plata County

According to CDS, total revenue received by La Plata County increased from \$11,774,011 in 1985 (the earliest year for which data is available from CDS) to \$36,206,324 in 2000. During this period, property tax revenue increased from \$2,379,837 to \$9,948,011. Much of the property increase was due to development of coalbed methane resources. From 1985 to 2000, sales and use tax revenue increased from \$3,555,442 to \$9,403,815. Total taxable assessed value increased from \$233,233,000 in 1985 to \$1,163,142,000 in 2000. Much of the increase in sales tax revenues and taxable assessed value can be attributed to a robust local economy during the 1990s fueled by population growth, tourism, and increased real estate prices

Oil and Gas Development

Property tax revenues from oil and gas production makeup a significant percentage of total revenues for La Plata County. In 2000, approximately 45 percent of property taxes were paid by the oil and gas industry. Continued and expanded oil and gas operations have had a beneficial economic impact in La Plata County, helping to fund county government services.

Missionary Ridge Fire

The Missionary Ridge Fire burned approximately 70,000 acres, and destroyed 56 homes and 27 outbuildings. One firefighter was killed, and 48 other people were injured. The total economic cost of the fire was \$74.6 million dollars broken out below:

Cost: \$74.6 million (source: Federal Emergency Management Act (FEMA), 2005)

- Firefight: \$40.4 million (State/local share was \$2.6 million, of which FEMA reimbursed \$1.9 million)
- Forest rehabilitation: \$9.47 million
- Insurance: 17.7 million
- SBA loans: 6.8 million

4.3.8.5 Present and Future Cumulative Impacts

Oil and Gas Development

Property tax revenues from oil and gas production make up a significant percentage of total revenues for La Plata County. According to the 2003 La Plata County budget, approximately 61 percent of property taxes are expected to be paid by the oil and gas



industry. Continued and expanded oil and gas operations would have a beneficial economic impact in La Plata County, helping to fund county government services.

Transportation Projects

Although most of the expenditures for improvements to La Plata County roads would be allocated from the county's Road and Bridge Fund, the impact to existing taxpayers would be reduced if the county adopts road impact fees, as recommended in the *La Plata County Comprehensive Traffic Study 1999* (La Plata County 1999), to ensure that new development pays a fair, proportionate share of future road improvements. Construction to improve US 160 would create positive economic impacts for the La Plata County construction industry and labor force.

Animas-La Plata Project

According to the *Animas-La Plata Water Storage Project Final Supplemental EIS* (USDI 2000), the water project would have either beneficial or minor economic impacts to La Plata County, including:

- Decreased commercial rafting on the Animas River would result in a minimal loss of revenue, commercial rafting contributes only about 1 percent of total tourism receipts;
- Construction of Ridges Basin Reservoir would increase gross sales revenues and create jobs in La Plata County;
- Reservoir-based recreation would generate revenue, resulting in a direct and indirect annual benefit of approximately \$9.4 million;
- Conversion of fee simple farmland to Indian Trust Land would reduce tax revenues by approximately \$41,000, as these lands would be removed from the tax roles; and
- Sales of water developed by the project could generate revenue for the SUIT and allow for reservation improvements.

La Plata County Growth

The construction of the new hospital facility that is now well underway along with the approximately 900 acre housing and commercial development scheduled to follow the hospital project will create positive economic impacts for La Plata county.

New development, particularly commercial development, would increase property tax and sales tax revenues and employment opportunities and would likely create positive economic impacts. However, new development also creates a demand for expanded public facilities and services, such as new or improved roads, more school classrooms, and additional police and fire personnel and equipment. In general, most of the new taxes generated by new development are allocated to pay for expanded facilities and services. In some communities, particularly those that rely heavily on local property taxes, the cost of serving new growth, especially residential development, is greater than revenues generated by new growth.

In La Plata County, however, there are several factors that mitigate the potential financial drain caused by new development.

- Because tourism is a major component of the Durango/La Plata County economy, sales taxes account for a higher share of revenues than property taxes. According to the 2003 La Plata County budget, sales tax revenues make up 21 percent of total revenues compared to 13 percent for non-oil and gas property taxes. According to the 2003 budget for the City of Durango, sales tax revenues make up only 3 percent of total general fund revenues compared to 57 percent for property taxes. In effect, tourists, who pay sales and lodging taxes, pay for much of the cost of new growth.
- New commercial development has generally kept pace with new residential development, generating sales tax as well as property tax. According to staff at the City of Durango Department of Planning and Community Development, approximately 100,000 square feet of new commercial development has been built within Durango and newly annexed areas during each of several recent years, creating new jobs and expanding the local tax base.
- In Colorado, the assessed valuation in relation to full market value for commercial property is much higher than for residential property. In 2003, commercial property was assessed at 29 percent of market value while residential property was assessed at only 7.96 percent. Due to funding limitations imposed by the Gallagher Amendment and the Taxpayers Bill of Rights (TABOR) Amendment, the assessed valuation of residential property as a percentage of market value has steadily decreased during recent years.
- La Plata County and the City of Durango collect impact fees for new commercial and residential development, thus reducing the potential drain on public services and facilities resulting from new development. Impact fees are a one-time payment, usually collected when a building permit is issued, to partially offset the cost of serving new development with expanded facilities and services. La Plata County collects road impact fees for new development within certain road corridors and, in cooperation with the three school districts, the county collects school impact fees that are allocated to buying new school sites. The City of Durango has a detailed road impact fee schedule and also collects fees for parks.
- Because the oil and gas industry provides a significant share of La Plata County's revenues, 61 percent of property taxes according to the 2003 budget, such revenues help to fund expanded facilities and services associated with new growth.

For the reasons presented above, new development associated with community expansion would probably continue to have a positive economic impact, as long as local tourism thrives and the oil and gas industry remains an important component of the local economy.

4.3.8.6 *Overall Cumulative Impact*

Given the importance of a good road network in support of sustained economic growth, particularly tourism, improvements to US 550 would facilitate efficient traffic movement through the county's southern portal. Conversely, lack of such improvements, the No Action Alternative, would eventually result in traffic congestion and a less safe highway



and could reduce La Plata County's attractiveness as a tourist destination, thus adversely impacting tourist-generated revenues to businesses and local governments.

4.3.9 Visual Resources

4.3.9.1 *Past Cumulative Impacts*

Development in La Plata County

Past community development, including continued residential/subdivision development and a corresponding increase in commercial and industrial development, has been identified (DOI and SUI 2000) as the biggest contributor to cumulative impacts in the region. The community of Durango continues to grow at an accelerated level, resulting in housing developments occurring in what was recently ranch/farm land or other undeveloped areas. This has in the past and would continue to contribute to an increase in the level of development and the loss of uninterrupted, natural-appearing scenic vistas in the region. It should be noted that the overall landscape character of the region is still rural in nature and one of moderate to high scenic quality, but is an area that would see a steady erosion of the scenic quality as growth continues, especially in the Durango area.

Oil and Gas Development

Oil and gas development has in the past contributed to visual impacts by altering views that individuals are accustomed to. The oil and gas industry has made attempts to mitigate visual impacts through careful placement of facilities behind natural screens such as vegetation and topography, and by painting facilities to blend into the background.

Transportation Projects

Visual impacts from past highway improvement projects have impacted visual resources by producing dust, noise and traffic delays. Slope cuts and fills from past projects have changed the characteristic landscape by disrupting continuity of natural landforms, vegetation, and creating areas with a high degree of color and form contrast. Expansion of roads has necessitated the removal of trees and other vegetation that may be providing a positive element to the existing landscape. Features associated with roads including guardrails, frontage roads, retaining walls etc. add negative elements to visual resources.

Missionary Ridge Fire

The Missionary Ridge Fire severely impacted visual resources within the burned area. As the area regenerates and rebuilds the visual resources would actually improve contributing to a positive view.

4.3.9.2 *Present and Future Cumulative Impacts*

Grandview Development

Impacts from Grandview development would be similar to those projected for La Plata County Growth below.



La Plata County Growth

Several foreseeable developments in La Plata County have the potential for adverse cumulative impacts on visual resources. Oil and gas well development is an ongoing activity in the county and is projected to continue (DOI and SUI 2000). Well development activities, which include the well site, access roads, and other ancillary aboveground facilities such as compressor stations, occur in a broad area throughout the region. Several existing well sites are visible from US 550 along the project corridor. The current spacing requirements for wells prevent a large-scale concentrated intrusion on the natural scenery, but the wells are noticeable where they do exist and decrease the natural appearance of the landscape. Potential exists for future downspacing of natural gas well site densities, which would allow a greater concentration of wells per section, than is currently allowable.

Community development, including continued residential/subdivision development and a corresponding increase in commercial and industrial development, has been identified (DOI and SUI 2000) as the biggest contributor to cumulative impacts in the region. The community of Durango continues to grow at an accelerated level, resulting in housing developments occurring in what was recently ranch/farm land or other undeveloped areas. This has in the past and would continue to contribute to an increase in the level of development and the loss of uninterrupted, natural-appearing scenic vistas in the region. It should be noted that the overall landscape character of the region is still rural in nature and one of moderate to high scenic quality, but is an area that would see a steady erosion of the scenic quality as growth continues, especially in the Durango area.

Animas-La Plata Project

Elements of the proposed Animas-La Plata Water Storage Project are being built just southwest of Durango. The Durango Pumping Plant is located on the Animas River at the south end of Santa Rita Park, west of US 550/US 160. The facility may be visible to recreation users in the park, from the river, and to motorists on the nearby highways. Although there are other visual intrusions in the area, including an industrial park, the pumping plant would add another negative influence on the natural scenic character of the area. The water storage reservoir component of the project would alter the natural landscape, although the water feature that would be created would generally be viewed by most viewers, particularly visitors to be a positive landscape feature.

Oil and Gas Development

Highway projects include the proposed improvement to US 550 and plans for reconstruction of US 160 east of Durango. These projects would have a minor impact on visual quality, as the proposed improvements would generally occur within existing transportation ROWs, adding an incremental increase in the visual scale of the existing disturbance. An exception to that assessment is the proposed realignment of the US 550/US 160 south (Farmington Hill) interchange, which would add road construction in some previously undisturbed areas.



4.3.9.3 Overall Cumulative Impact

In summary, the US 550 highway improvements project would, with the exception of the new Bondad Hill alignments associated with the preferred alternative have minor impacts on scenic quality and would not contribute cumulative impacts to the visual resource. However, with or without the project, the scenic resources of La Plata County would continue to be impacted by community expansion and would be degraded from its natural scenic qualities in areas of concentrated growth and development.

