United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
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Cheyenne, Wyoming 82009

In Reply Refer To:
ES-61411/WY10F0093

JUL 30 2010

Randy Strang, Project Development Engineer
Federal Highway Administration, Wyoming Division
2617 East Lincolnway, Suite D
Cheyenne, Wyoming 82001-5662

Dear Mr. Strang:

This correspondence transmits the U.S. Fish and Wildlife Service's (Service) final programmatic Biological Opinion, as well as concurrence for informal consultation, in response to the Federal Highway Administration (FHWA)/Wyoming Department of Transportation's (WYDOT) request for consultation on the effects of the Wyoming Statewide Transportation Improvement Program (STIP) of highway projects (2010 – 2014) (Proposed Action) to federally listed species in Wyoming in accordance with section 7 of the Endangered Species Act (ESA or Act) of 1973, as amended (50 CFR §402.13 & §402.14).

The enclosed Biological Opinion addresses potential effects to the threatened Colorado butterfly plant (*Gaura neomexicana spp. coloradensis*), and the threatened Ute ladies'-tresses orchid (*Spiranthes diluvialis*) resulting from activities associated with implementation of the Wyoming STIP (2010-2014) as well as FHWA/WYDOT's commitment to the Conservation Measures described in the Programmatic Biological Assessment (PBA). The Biological Opinion is prefaced by (1) an informal consultation/conference for "no effect" (NE), "not likely to adversely affect" (NLAA), and "not likely to jeopardize" (NJ) determinations for effects to additional listed species and designated critical habitats, and (2) information and conservation recommendations for species and habitats of conservation concern in Wyoming.

The Programmatic Biological Opinion (PBO) is based on information provided in the November 19, 2009 Programmatic Biological Assessment (PBA), associated conservation measures detailed within the PBA, the Wyoming STIP (2010-2014), and conversations and meetings with Wyoming Department of Transportation and Federal Highway Administration staff. The PBA describes the general highway project types, the typical impacts associated with the project types on listed species in Wyoming, and concludes with determinations for potential affect to listed species. A complete administrative record of this consultation is on file in the Wyoming Ecological Services Field Office.

Consultation History
In early 2009, the Service met with representatives of the FHWA and WYDOT to discuss reinitiation of the 2005 PBO for effects of the Wyoming STIP. Subsequently, an initial draft PBA dated September 15, 2009 was received by the Service on September 24. In the interim, the Montana District Court (September 21) issued a ruling vacating the Service's March 29, 2007 final rule that established, and determined as recovered, a distinct population segment (DPS) of the Greater Yellowstone Ecosystem (GYE) population of the grizzly bear (*Ursus arctos horribilis*). The effect of the Court's ruling was to return the GYE distinct population segment of the grizzly bear to listed status as threatened. The FHWA was then advised on October 20 of the need to revise the September 15 PBA to consider potential effects to the grizzly bear. On November 25, the Service received a revised PBA dated November 19. The Service provided review of the PBA and acknowledged sufficiency of the analyses, initiating formal consultation on December 23 (WY10TA0080). A draft Biological Opinion was provided WYDOT (T. Hart) and FHWA (R. Strang) on June 18, 2010. On June 29, our agencies mutually agreed to extend the deadline to complete the final programmatic Biological Opinion to July 31, 2010. Comments received from FHWA were subsequently incorporated by the Service and acknowledged by FHWA on July 1.

Water depletions within Colorado and Platte River Recovery Programs have been accounted for within a separate programmatic consultation for these two programs. That consultation has since been completed (October 3, 2003; WY7662) and as a result depletions in the Colorado and Platte River Basins will not be discussed further in this PBO.

Informal Consultation/Conference.
In the PBA, FHWA/WYDOT determined that Wyoming STIP.(2010-2014) projects would have "no effect" or were "not likely to adversely affect" listed species or designated critical habitat; or, were "not likely to jeopardize the continued existence of species designated as nonessential experimental (Table 1). The consideration of candidate species or determinations of "no effect" for listed species does not require Service concurrence under the Act, though the Service appreciates information regarding these species in the analyses provided.

Table 1. Determinations of "not likely to adversely affect (NLAA)", "no effect (NE)", and "is not likely to jeopardize (NJ)" made for potential effects of the Wyoming STIP (2010-2014) to Listed Species and Designated Critical Habitats.

Species	Scientific Name	Status	Determination
black-footed ferret	*Mustela nigripes*	endangered	NLAA
black-footed ferret	*Mustela nigripes*	experimental non-essential	NJ
blowout penstemon	*Penstemon haydenii*	endangered	NE
Canada lynx	*Lynx canadensis*	threatened	NLAA
Canada lynx		designated critical habitat	NLAA
Colorado butterfly plant	*Gaura neomexicana spp. coloradensis*	designated critical habitat	NE
desert yellowhead	*Yermo xanthocephalus*	threatened	NE
desert yellowhead		designated critical habitat	NE
gray wolf	*Canis lupus*	experimental non-essential	NJ
grizzly bear	*Ursus arctos horribilis*	threatened	NLAA
Kendall Warm Springs dace	*Rhinichthys osculus thermalis*	endangered	NE
Wyoming toad	*Bufo baxteri*	endangered	NE

Black-footed ferret. The PBA addresses activities that are (1) not likely to adversely affect endangered black-footed ferrets, and (2) activities not likely to jeopardize the continued existence of the non-essential, experimental black-footed ferret population within the Shirley Basin. The NLAA black-footed ferret determination was based in part, on the Service's February 2, 2004, letter indicating that all black-tailed prairie dog towns, and many white-tailed prairie dog towns, in Wyoming are not likely to be inhabited by black-footed ferrets (USFWS 2004a, 2004b).

Projects may affect wild black-footed ferrets if actions occur within a prairie dog complex occupied by ferrets. Impacts to ferrets from highway construction projects could include loss of habitat (prairie dog colonies), mortality, and potential disturbance /displacement effects if a ferret were to occur near a construction site. Highway construction projects that encroach on prairie dog colonies can result in loss of habitat and potential mortality if a ferret occurred underground in an area of excavation. Disturbance and displacement effects may also occur as ferrets have strong affinities to areas of primary prey (prairie dogs), limiting their ability to alter feeding or other behaviors in order to avoid construction activities. If white-tailed prairie dog towns or complexes greater than 200 acres will be disturbed, please contact our office to determine if surveys for ferrets are recommended. Surveys may he recommended even if only a portion of the white-tailed prairie dog town or complex will be impacted. According to the Black-Footed Ferret Survey Guidelines, a prairie dog complex consists of two or more neighboring prairie dog towns less than 7 km (4.3 miles) from each other. We encourage project proponents to protect all prairie dog towns or complexes for their value to the prairie ecosystem and the many species that rely on them. We further encourage you to analyze potentially disturbed prairie dog towns for their value to future black-footed ferret reintroduction.

Based on the STIP for the next 5 years (Appendix A), 10 projects have been identified that are located within, or within a portion of, areas in Wyoming not 'block-cleared' for black-footed ferrets (U.S. Fish and Wildlife Service <USFWS> 2004a). These projects are located outside of the reintroduction site designated as an experimental non-essential population in the Shirley Basin. The determination of 'may affect' for these 10 projects is based on the potential for a project to fall within a non-cleared white-tailed prairie dog (*Cynomys leucurus*) complex. Eight of these are reconstruction projects without added capacity, one is a safety project, and the remaining project is an environmental only project (Appendix A). Reconstruction without added capacity projects are not expected to significantly impact prairie dog colonies because they are not expected to include significant highway widening. Given the small number of projects that may potentially affect non-cleared white-tailed prairie dog complexes, the minor potential impacts to prairie dog habitats, the rarity of wild ferrets, and that the consideration that consultation under the Act will be re-initiated and project activities halted if a wild black-footed ferret is found or observed, the Service concurs that the STIP for the next five years is *not likely to adversely affect* endangered black-footed ferrets.

Based on the STIP for the next five year period, there is one reconstruction without added capacity project that may affect non-essential experimental black-footed ferrets within the Shirley Basin (Appendix A). The "*may affect*" determination is based on the project occurring within the defined boundaries of the experimental non-essential population. This project is not expected to result in substantial loss of prairie dogs (habitat) or create a barrier to movement greater than the existing situation. It is assumed that ferrets would not commonly occur in an

area of highway construction. The Service concurs that the STIP for the next five years will *not jeopardize the continued existence* of nonessential experimental black-footed ferrets.

Canada lynx. The Service published a Final Rule in the Federal Register on March 24, 2000 (USFWS 2000a) listing the Canada lynx (*Lynx canadensis*) in the contiguous United States as threatened. Historically, lynx were observed in every mountain range in Wyoming. Concentrations of observations occur in western Wyoming in the Wyoming and Salt River ranges and continuing north through the Tetons and Absaroka ranges in and around Yellowstone National Park. Numerous records have also come from the west slope of the Wind River Range, with fewer observations in the Bighorn and Uinta mountains (McKelvey et al. 2000, Reeve et al. 1986, Squires and Laurion 2000). In Wyoming, lynx occupy subalpine/coniferous forests of mixed age and structural classes. Mature forests with downed logs and windfalls provide cover for denning sites, escape, and protection from severe weather. Early to mid-successional forest with high stem densities of conifer saplings provide optimal habitat for the lynx's primary prey, the snowshoe hare. Snowshoe hare reach their highest densities in regenerating forests that provide visual cover from predators and thermal cover (Wolff 1980, Litvaitis et al. 1985). It is likely that winter, when food is less abundant and energy demands are higher, is the limiting season for snowshoe hares (Pietz and Tester 1983). To most benefit lynx, habitats should retain an overstory for concealment and forested connectivity between feeding, security, and denning habitats (Ruediger et al. 2000, U.S. Forest Service 2007).

Highway construction projects (including mineral source operations) have the potential to affect Canada lynx through altering habitat, creating barriers to movement, and causing disturbance or displacement. Of those activities described in the PBA, new construction, including roadway relocation, or road reconstruction with added capacity would be most likely to affect Canada lynx or result in losses of lynx habitat. Resurfacing and reconstruction without added capacity would have minimal impacts on Canada lynx habitat. Restoration or resurfacing projects do not change the highway template and do not result in additional land surface being converted to highway. Reconstruction without added capacity may result in wider lanes or added shoulders; this type of construction is anticipated to occur predominantly within existing rights-of-way.

The Wyoming STIP (2010-2014) proposes no new construction projects within areas that may provide lynx habitat or matrix habitat (Appendix A, e.g., Transportation District 2). Based on the STIP for the next five year period, there are 11 FHWA/WYDOT projects which may affect Canada lynx (Appendix A). The determination of *"may affect"* is based on the projects occurring in the WYDOT Transportation Districts 3 and 5, that is, within the Greater Yellowstone Ecosystem (GYE). Six of the projects are reconstruction without added capacity, resulting directly or indirectly in disturbance with little potential for loss of habitat, mortality, or creating a barrier to movement. One project is reconstruction with added capacity (i.e., addition of traffic lanes). While this project is will increase the size of the right-of-way, it is not expected to have significant effects on lynx due to location (Afton). Two projects are environmental only and two are safety projects, all of which could result in disturbance type effects with little potential for loss of habitat, mortality, or creating a barrier to movement.

Highway construction could conceivably harass or harm Canada lynx through disturbance; projects proposed for the next five years, however, will occur within existing rights-of-way characterized by on-going use. Lynx may avoid areas around highways, but the one added capacity project is not likely to create a movement barrier to lynx. Reconstruction without added

capacity, environmental only, or safety projects are not expected to inhibit movement as these projects will not increase the size of the highway. The Service concurs that the STIP for the next five years is *not likely to adversely affect* Canada lynx through habitat loss, disturbance or impairing movement. Be advised, however, that cooperating agencies, e.g., the Forest Service, may require additional site-specific analysis resulting in re-initiation of section 7 consultation for a particular project.

Canada lynx critical habitat. On February 25, 2009, the Service published a revised designation of critical habitat for the contiguous United States distinct population segment of the Canada lynx. The final rule became effective on March 27, 2009 (74 FR 8616). Critical habitat in Wyoming occurs within Unit 5: Greater Yellowstone Area (GYA). Unit 5 covers approximately 9,500 square miles (6.08 million acres) and is located in Yellowstone National Park and surrounding lands in southwestern Montana and Park, Teton, Fremont, Sublette, and Lincoln counties in Wyoming (approximately 6,500 mi^2). This area was occupied by lynx at the time of listing and is currently occupied by the species. The GYA has inherently marginal lynx habitat with highly fragmented foraging habitat (snowshoe hare habitat). For this reason, lynx home ranges in this unit are likely to be larger and incorporate large areas of non-foraging matrix habitat.

The physical and biological features of critical habitat essential to lynx conservation (Primary Constituent Element) has been identified as:

1. Boreal forest landscapes supporting a mosaic of differing successional forest stages and containing all of the following:

    a. Presence of snowshoe hares and their preferred habitat conditions, which include dense understories of young trees, shruhs, or overhanging boughs that protrude above the snow and mature multistoried stands with conifer houghs touching the snow surface;

    b. Winter snow conditions that are generally deep and fluffy for extended periods of time;

    c. Sites for denning that have abundant coarse woody debris, such as downed trees and root wads; and

    d. Matrix habitat (e.g., hardwood forest, dry forest, non-forest, or other habitat types that do not support snowshoe hares) that occurs between patches of boreal forest in close juxtaposition (at the scale of a lynx home range) such that lynx are likely to travel through such habitat while accessing patches of boreal forest within a home range.

Based on the STIP for the next 5-year period, there are eight projects which may occur within Canada lynx critical habitat (Appendix A). The determination of *may affect* is based on the projects occurring within designated critical habitat (WYDOT Districts 3 and 5). Seven of these projects are reconstruction without added capacity and would likely result primarily in disturbance type effects, or indirect effects with little potential for habitat loss. The remaining project is a safety project. Of the eight projects located in critical lynx habitat, only the Hohack

Junction Project (N132090) has been identified as resulting in a loss of timbered habitat (<2.5 acres).

Based on the scale of actions proposed within the STIP, proportionate to the large landscape used by lynx, the location of proposed actions within existing rights-of-way, and given that no new construction within lynx designated critical habitat has been proposed in the Wyoming STIP (2010-2014), the Service concurs that the STIP for the next five years is *not likely to adversely affect* Canada lynx designated critical habitat.

Grizzly bears. On March 29, 2007, the Service published a Federal Register notice (72 FR 14865) announcing that the Yellowstone Distinct Population Segment (DPS) of grizzly bears is a recovered population that no longer meets the definition of threatened or endangered under the ESA. The delisting of the Yellowstone DPS did not change the threatened status of the remaining grizzly bears in the lower 48 States. On September 21, 2009, the Montana District Court issued a ruling that vacated the Service's March 29, 2007, final rule, the effect of which was to return the GYE distinct population segment of the grizzly bear to listed status as threatened.

The distribution of the grizzly bear in Wyoming is currently confined to the GYE; however, the population is increasing and expanding its range. There is concern with grizzly bears due to potential adverse encounters between humans and bears. In general, grizzly bear habitats are located in wilderness areas away from human disturbance; however, they are known to come into camp sites, picnic areas, and managed recreation areas in search of food. Land management agencies in and around the GYE have adopted guidelines regarding activities in grizzly bear habitat to reduce the level of attractants, adverse encounters and potential impacts to grizzlies.

Highway project construction, including mineral source operations, have the potential to affect grizzly bears through altering habitat, creating barriers to movement, and directly or indirectly causing disturbance or displacement. Highway projects throughout most of Wyoming, that lack habitat for grizzly bears, would have no effect on grizzly bears. Those projects that occur within the GYE may affect grizzly bears and all types of projects (Table 1 of the PBO) have the potential to affect grizzly bears if they occur within occupied habitat. Highway improvements themselves generally have minimal impacts on grizzly bears; however, increased human use of the area during construction may have greater effects to the extent that the human presence displaces or attracts grizzly bears. Note that highway projects within Yellowstone or Grand Teton National Parks fall under the jurisdiction of the Regional Federal Highway Administration and are not considered here.

Based on the STIP (2010-2014), there are eleven FHWA/WYDOT projects which may affect grizzly bears (Appendix A). The determination of *may affect* is based on projects occurring in WYDOT Transportation Districts 3 and 5 within the GYE. Six projects are reconstruction without added capacity and may result primarily in disturbance or indirect effects with minor potential for loss of habitat, mortality, or impairing movement. One project is reconstruction with added capacity (Afton, Project N103095). This project will result in the addition of traffic lanes and sidewalks between RM 82.98 and 84.20. However, the project is not anticipated to have significant effects on grizzly bears as it will occur within an area characterized by on-going high human use. Two projects are environmental only and the remaining two projects are for the

purpose ensuring public safety. It is unlikely that these projects would result in loss of habitat, mortality, or impair movement of grizzly bears.

Construction activity on a highway could conceivably harass or harm grizzly bears through disturbance. However, STIP projects for the next five years are not located in prime grizzly bear habitat (i.e., they are located within existing rights-of-ways) and are unlikely to disturb grizzly bears. Reconstruction without added capacity or environmental only projects are not expected to create barriers to movement as these projects will not significantly increase highway width. In addition, FHWA/WYDOT has agreed that all contractors for projects within grizzly bear habitat will comply with the U.S. Forest Service special orders (e.g. food storage, waste disposal) to minimize grizzly/human conflicts (PBA, p. 18). FHWA/WYDOT STIP (2010-2014) projects within grizzly bear habitat are anticipated to generally improve road safety without appreciably increasing the volume or average speed of traffic on existing roads, factors known to influence mortality (Ament et al. 2008). In the absence of new road construction within grizzly bear habitat, the proposed action is not anticipated to result in effects to grizzly bears beyond that attributable to existing conditions within WYDOT Transportation Districts 3 and 5. The Service therefore concurs that the FHWA/WYDOT STIP (2010-2014) projects are *not likely to adversely affect* grizzly bears.

Gray Wolf. Gray wolves (*Canis lupus*) in Wyoming are listed as an experimental, non-essential, population under the Act (74 FR 15123). Although wolves in Wyoming currently remain listed and protected under the Act, additional flexibility is provided for their management under the provisions of the special regulations promulgated for this nonessential experimental population (see 50 CFR 17.84(i)). Wolves are dependent on movements of big game populations and may occur in large ungulate migration, wintering, or parturition areas. During project activities, wolves may change their use of project areas based upon changes to big game population numbers and changes in movement of herds. Project planning should consider impacts to big game populations, including wintering grounds and migration corridors.

Requirements for interagency consultation under section 7 of the Act differ based on the land ownership and/or management responsibility where the animals occur. Except on National Park Service or National Wildlife Refuge lands, wolves in Wyoming are treated as proposed for listing rather than listed for the purposes of section 7. Two provisions of section 7 apply to Federal actions outside National Parks or National Wildlife Refuges: (1) section 7(a)(1), which states all Federal agencies shall utilize their authorities to carry out programs for the conservation of listed species; and, (2) section 7(a)(4), which requires Federal agencies to confer with the Service on actions that are likely to jeopardize the continued existence of the species. On National Park Service or National Wildlife Refuge lands wolves in the nonessential experimental population are treated as threatened species for the purposes of section 7. Highway projects within National Park System lands (i.e., Yellowstone or Grand Teton National Parks) fall under the jurisdiction of the Regional Federal Highway Administration; intra-service section 7 regulations inform consultations for projects on National Wildlife refuges. That is, section 7 consultation on the effects of FHWA/WYDOT STIP projects is limited in scope to consideration of wolves as a nonessential experimental species.

Based on the STIP for the next 5-year period, there are ten WYDOT projects which may affect nonessential experimental gray wolves (Appendix A). The determination of *may affect* is based on the project occurring within the WYDOT Transportation Districts 3 and 5 which encompasses

portions of the GYE. Six of the proposed projects are reconstruction without added capacity and may result primarily in disturbance. Reconstruction without added capacity projects are unlikely to result in loss of habitat, mortality of wolves, or impair the movement of gray wolves. Two FHWA/WYDOT STIP proposed projects are reconstruction with added capacity. These projects will increase the footprint of the respective roadways in areas of existing infrastructure and human use (Pinedale and Afton). Consequently, they are not expected to have substantial effects on gray wolves due to location. One project is environmental only and one is a safety project. These projects would likely result primarily in disturbance type effects or indirect effects with little potential for loss of habitat, mortality, or creating a barrier to movement. Based on the location of proposed projects, the absence of new construction, the location of projects within existing road corridors, the scope and type of road construction projects proposed, the Service concurs that the FHWA/WYDOT STIP for the next five years will *not jeopardize the continued existence* of nonessential experimental gray wolves.

Ute Ladies'-tresses Orchid. Ute ladies'-tresses (*Spiranthes diluvialis*) is a perennial, terrestrial orchid, 8 to 20 inches tall, with white or ivory flowers clustered into a spike arrangement at the top of the stem. *S. diluvialis* typically blooms from late July through August; however, depending on location and climatic conditions, it may bloom in early July or still be in flower as late as early October. *S. diluvialis* is endemic to moist soils near wetland meadows, springs, lakes, and perennial streams where it colonizes early successional point bars or sandy edges. The elevational range of known occurrences is 4,200 to 7,000 feet in Utah (Fertig et al. 2005) in alluvial substrates along riparian edges, gravel hars, old oxbows, and moist to wet meadows. No known populations in Wyoming occur ahove 5,500 feet. Soils where *S. diluvialis* have been found typically range from fine silt/sand, to gravels and cobbles, as well as organic and peaty soil types. *S. diluvialis* is not found in heavy or tight clay soils or in extremely saline or alkaline soils. *S. diluvialis* seems intolerant of shade and small scattered groups are found primarily in areas where vegetation is relatively open. *S. diluvialis* is difficult to survey for primarily due to unpredictable emergence of flowering parts and subsequent desiccation of specimens.

Prior to 2005, Ute ladies'-tresses was known from four locations in Converse, Goshen, Laramie and Niobrara counties. Following additional surveys in 2005-06, five additional populations have been recorded (Heidel 2007). Currently, Ute ladies'-tresses is known from three eastern Wyoming watersheds, the Antelope and Horse Creek watersheds, and a portion of the Niobrara River watershed. However, Ute ladies'-tresses is known to occur in adjacent states within watersheds that encompassing portions of Albany, Laramie, Park, Sweetwater, and Teton counties suggesting that the species may occur elsewhere in the State.

Potential impacts may include mortality of individual plants, loss of suitable habitat, fragmentation of populations, and sedimentation or runoff affecting habitat for these plants. In order to address the unknown location of this plant and to minimize potential affects the following conservation measures will be implemented:

1. Irrespective of whether or not a particular wetland is regulated by the Army Corp of Engineers (jurisdictional or non-jurisdictional), all projects which impact wetlands will be evaluated for suitability for Ute ladies'-tresses orchid (i.e., below 6,800 feet elevation; non-saline soils; open palustrine wetlands with no overstory; perennial water source).

2. Wetlands, jurisdictional or non-jurisdictional, with characteristics suitable for Ute ladies'-tresses will be surveyed prior to disturbance according to USFWS guidelines to determine presence/absence of the species.

3. Wetlands disturbed as a result of implementation of the proposed action, and particularly those determined to be suitable for Ute ladies'-tresses will be reclaimed in a manner which preserves topsoil from the affected areas and utilizes it for reclamation thus preserving the seed bank, propagules, and other biological material.

Based on the STIP for the next five year period, and due to the uncertain distribution of the species in Wyoming, numerous WYDOT projects may affect Ute ladies'-tresses orchid (PBA, p. 31). Because it is believed that Ute ladies'-tresses could occur anywhere in the state below 6,800 feet elevation, the 'may affect' determination is based on projects throughout the state that cross riparian areas of perennial streams and potentially affect riparian wetlands.

Because of the uncertain distribution of Ute ladies'-tresses in Wyoming, it is difficult to predict how many WYDOT projects over the next five years will actually affect occupied or potentially occupied habitat. It is likely that no projects will occur in, or cross, known occupied habitat. However, there is still the potential for new populations of Ute ladies'-tresses to be located in Wyoming which could be affected by a highway project. Highway projects that do not require additional conversion of land area to highway or that impact suitable but unoccupied habitat are *not likely to adversely affect* Ute ladies'-tresses through habitat loss. Projects which may affect, remove, or otherwise degrade occupied habitat for Ute ladies'-tresses are the subject of the PBO which follows.

Colorado Butterfly Plant. The Colorado butterfly plant (*Gaura neomexicana coloradensis*) is a perennial herb endemic to moist soils in flood plain wet meadows of southeastern Wyoming, north-central Colorado, and western Nebraska between elevations of 5,000 and 6,400 feet. These plants are often found in low depressions or along bends in wide meandering stream channels a short distance upslope of the actual channel. Threats to the plant include non-selective herbicide treatment, haying and mowing schedules that inhibit the setting of seed, land conversion for cultivation, and competition from noxious weeds. Low numbers and limited distribution contribute to the plant's vulnerability. In Wyoming, Colorado butterfly plant is found in Laramie and Platte Counties in moist soils of floodplain meadows which are fairly open and not overly dense. The current known range of Colorado butterfly plant in Wyoming is limited to about 6,100 acres along Bear, Little Bear, Horse, Lodgepole, Diamond, Crow, Spring, and Lone Tree creeks in Laramie County, and Tepee Ring Creek in Platte County (USFWS 2004b, Fertig 2000b).

Highway projects have the potential to affect the Colorado butterfly plant through destruction of individuals, loss of suitable habitat, fragmentation of populations, and sedimentation or runoff affecting habitat for this plant. Based on the STIP for the next five year period Based on the STIP for the next 5-year period there are five WYDOT projects which *may affect* Colorado butterfly plant (Appendix A). The determination of *may affect* is based on the project occurring within the range of the Colorado butterfly plant range and potentially affecting a riparian area. Three of the projects are reconstruction without added capacity, one is new construction, and one is an environmental only project. Depending on the presence of butterfly plant habitat in the project area these projects may have direct and indirect impacts on Colorado butterfly plant.

As with other plants, habitat loss and mortality of the Colorado butterfly plant are closely associated because of the limited mobility/dispersal ability of plants. Suitable babitat may be present in an area but may be unoccupied because of the lack of a seed source. In order to minimize potential affects to the Colorado butterfly plant the following conservation measures will be implemented with the proposed action:

1. All projects within Platte and Laramie Counties which impact wetlands (jurisdictional and non-jurisdictional) will be evaluated for suitability for Colorado butterfly plant (i.e., floodplain of a stream; open palustrine wetlands with no overstory; located in Platte or Laramie counties).

2. Riparian areas with characteristics suitable for Colorado butterfly plant, will be surveyed prior to disturbance according to USFWS guidelines to determine presence/absence of the species.

3. Wetlands disturbed as a result of implementation of the proposed action, and particularly those determined to be suitable for Colorado Butterfly plant, will be reclaimed in a manner which preserves topsoil from the affected areas and utilizes it for reclamation thus preserving the seed bank, propagules, and other biological material.

Highway projects that do not require additional conversion of land area to highway or that impact suitable but unoccupied habitat are *not likely to adversely affect* Colorado butterfly plant through habitat loss. Projects which may affect, remove, or otherwise degrade occupied habitat for Colorado butterfly plant are the subject of the PBO which follows.

Colorado Butterfly Plant Critical Habitat. In Wyoming, critical habitat is designated along the Bear, Little Bear, Horse, Lodgepole, Diamond, and Lone Tree creek drainages in Laramie County; and Tepee Ring Creek in Platte County (USFWS 2005). Critical habitat in these areas includes variable reaches of the streams and the area within 300 feet of the centerline of these streams (USFWS 2005).

Currently, the potential for a WYDOT project to impact Colorado butterfly plant critical habitat is limited to the Little Bear Creek, Horse Creek, and Lodgepole Creek drainages where they cross Interstate 25 north of Cheyenne. Construction on I-25 could affect Colorado butterfly plant critical habitat through habitat losses (permanent or temporary) or habitat degradation from run off or stochastic events such as accidents or fuel spills.

There are no FHWA/WYDOT STIP (2010-2014) proposed projects which may affect Colorado butterfly plant critical habitat (Appendix A). Determinations of "no effect" for listed species do not require Service concurrence under the Act; the Service appreciates the analyses provided and acknowledges that no FHWA/WYDOT STIP (2010-2014) will occur in proximity to designated Colorado Butterfly Plant Critical Habitat. Projects which may affect occupied habitat (outside designated critical habitat) for Colorado butterfly plant are the subject of the PBO, and will be discussed later in this document.

Conclusion of Informal Consultation.
This concludes *informal consultation* pursuant to the regulations implementing the Endangered Species Act, 50 C.F.R. § 402.13. This project should be re-analyzed if new information reveals effects of the action that may affect listed or proposed species or designated or proposed critical habitat in a manner or to an extent not considered in this consultation; if the action is subsequently modified in a manner that causes an effect to a listed or proposed species or designated or proposed critical habitat that was not considered in this consultation; and/or, if a new species is listed or critical habitat is designated that may be affected by this project.

Candidate Species –*Yellow-billed cuckoo, Greater sage-grouse.*

Although the Service does not provide concurrence for determinations of effects to species which are candidates for listing, we have reviewed your PBA and appreciate your efforts in providing a proactive analysis for potential effects of the FHWA/WYDOT STIP (2010-2014) to the Yellow-billed cuckoo (*Coccyzus americanus*).

The Service recommends that FHWA/WYDOT give consideration to candidate species in project-specific environmental planning to avoid possible delays should the species be listed prior to the completion of the project. Implementation of conservation measures provided these species now may preclude possible listing in the future. In addition, many Federal agencies have policies to protect candidate species from further population declines. Conservation measures for these candidate species are voluntary but recommended and should be incorporated into project planning. We provide recommendations for candidate species that occur in Wyoming below.

Yellow-billed Cuckoo (Western Distinct Population Segment). The distinct population segment of the yellow-billed cuckoo, west of the Continental Divide, is a candidate for listing under the ESA (66 FR 143, 25 July 2001). In Wyoming, the yellow-billed cuckoo is dependent on large areas of woody, riparian vegetation that combine a dense shrubby understory for nesting and a cottonwood overstory for foraging. Destruction, degradation and fragmentation of wooded, riparian habitats are continuing threats to yellow-billed cuckoos in Wyoming. Additionally, project actions to control outbreaks of caterpillars, cicadas or grasshoppers, and the general use of insecticides in or adjacent to riparian areas may negatively affect yellow-billed cuckoos. Surveys to determine the presence of yellow-billed cuckoos are difficult due to the secretive nature of the species and the variability in the timing of nesting. Therefore, we recommend as a conservation practice that projects avoid impacting large, woody riparian areas from late May to September, during the period when yellow-billed cuckoos seasonally occur in Wyoming. To help us better understand the distribution and status of the species in Wyoming, we request that all sightings of yellow-billed cuckoos west of the Continental Divide be reported to our office.

Greater sage-grouse. The Service has determined that the greater sage-grouse (*Centrocercus urophasianus*) warrants listing under the Act, but the development of a proposed listing rule is precluded by other higher priority listing actions. As a result, the greater sage-grouse has been placed on the list of candidate species. Candidates are reviewed annually to determine if they continue to warrant listing or to reassess their listing priority. Ideally, sufficient threats can be removed to eliminate the need for listing in which case sage-grouse would no longer be a candidate. If threats are not addressed or the status of the species declines, a candidate species can move up in priority for a listing proposal.

Please see our recent *Federal Register* notice (75 FR 13910) on greater sage-grouse for detailed information concerning the status of the species. Greater sage-grouse are dependent on sagebrush habitats year-round. Habitat loss and degradation, as well as loss of population connectivity have been identified as important factors contributing to the decline of greater sage-grouse populations rangewide. Therefore, any activities that result in loss or degradation of sagebrush habitats that are important to this species should be closely evaluated for their impacts to sage-grouse. If important breeding habitat (leks, nesting or brood rearing habitat) is present in the project area, the Service recommends no project-related disturbance March 15 through June 30, annually. Minimization of disturbance during lek activity, nesting, and brood rearing is critical to sage-grouse persistence within these areas. Likewise, if important winter habitats are present, we recommend no project-related disturbance November 15 through March 14.

We recommend you contact the Wyoming Game and Fish Department to identify important greater sage-grouse habitats within STIP (2010-2014) project areas, and adopt appropriate measures to minimize potential impacts from proposed projects. The Service recommends surveys and mapping of important greater sage-grouse habitats where local information is not available. The results of these surveys should be used in project planning to minimize potential impacts to this species. No project activities that may exacerbate habitat loss or degradation should be permitted in important habitats.

The State of Wyoming has adopted a "Core Population Area Strategy" Executive Order 2008-2 to ensure greater sage-grouse conservation. The recommendations of the State Sage-grouse Implementation Team and State of Wyoming's Greater sage-grouse "Core Population Area Strategy" Executive Order 2008-2 state that development of any type in the most important sage-grouse habitats (core areas and associated seasonal habitats) is done only when no decline to the species can be demonstrated. Executive Order 2008-2 further states the burden of proof for showing development does not affect sage-grouse rests with the project proponent. If a proposed project is located in an area designated by the State of Wyoming as a core sage-grouse population area, we recommend you pursue additional consultation with the Wyoming Game and Fish Department on the core area strategy as it relates to proposed STIP (2010-2014) projects.

Species and Habitats of Conservation Concern

Birds of Conservation Concern. The Service's *Birds of Conservation Concern (2008)* report identifies "species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing" under the Act (16 U.S.C 1531 *et seq.*). This report is intended to stimulate coordinated and proactive conservation actions among Federal, State, and private partners. Please see the enclosed fact sheet on Birds of Conservation Concern that occur in Wyoming. We encourage project planners to develop and implement protective measures for the Birds of Conservation Concern as well as other high priority species identified in the Wyoming Bird Conservation Plan. In order to further promote the conservation of migratory bird populations and their habitats, Federal agencies should implement those strategies directed by Executive Order 13186, "Responsibilities of Federal Agencies To Protect Migratory Birds" (66 FR 3853).

Bald Eagle & Raptors. Enclosed please find our general recommendations for the protection of bald eagles and other raptor species. We strongly encourage project proponents to fully

implement the protective measures described in the enclosures in order to help ensure compliance with the MBTA and the BGEPA. We are also available to assist you in developing a project specific plan to address the MBTA and BGEPA concerns.

Migratory Birds. The MBTA, enacted in 1918, prohibits the taking of any migratory birds, their parts, nests, or eggs except as permitted by regulations, and does not require intent to be proven. Section 703 of the MBTA states, "Unless and except as permitted by regulations ... it shall be unlawful at any time, by any means or in any manner, to ... take, capture, kill, attempt to take, capture, or kill, or possess ... any migratory bird, any part, nest, or eggs of any such bird..." The BGEPA prohibits knowingly taking, or taking with wanton disregard for the consequences of an activity, any bald or golden eagles or their body parts, nests, or eggs, which includes collection, molestation, disturbance, or killing.

Work that could lead to the take of a migratory bird or eagle, their young, eggs, or nests (for example, if you are going to erect new roads, or power lines in the vicinity of a nest), should be coordinated with our office before any actions are taken.

Removal or destruction of such nests, or causing abandonment of a nest could constitute violation of one or both of the above statutes. Removal of any active migratory bird nest or nest tree is prohibited. For golden eagles, inactive nest permits are limited to activities involving resource extraction or human health and safety. Mitigation, as determined by the local Service field office, may be required for loss of these nests. No permits will be issued for an active nest of any migratory bird species, unless removal of an active nest is necessary for reasons of human health and safety. Therefore, if nesting migratory birds are present on, or near the project area, timing is a significant consideration and needs to be addressed in project planning.

If nest manipulation is proposed for this project, the project proponent should contact the Service's Migratory Bird Office in Denver at 303-236-8171 to see if a permit can be issued for this project. No nest manipulation is allowed without a permit. If a permit cannot be issued, the project may need to be modified to ensure take of a migratory bird or eagle, their young, eggs or nest will not occur.

Mountain Plover. The Service has agreed to reopen the comment period in 2010 on the proposed rule to list the mountain plover (*Charadrius montanus*) as a threatened species (67 FR 72396, December 5, 2002) and to complete a new final determination on the proposal by May 1, 2011. Once the comment period is reopened and pending the completion of the new final determination, the mountain plover will be proposed for listing. Section 7(a)(4) of the Act, requires Federal agencies to confer with us on any action that is likely to jeopardize the continued existence of any species proposed for listing. Federal action agencies may also request a conference on any proposed action that may affect a species proposed for listing.

We encourage project planners to develop and implement protective measures should mountain plovers occur within project areas. Measures to protect the mountain plover from further decline may include: (1) avoidance of suitable habitat during the plover nesting season (April 10 through July 10), (2) prohibition of ground disturbing activities in prairie dog towns, and (3) prohibition of any permanent above ground structures that may provide perches for avian predators or deter plovers from using preferred habitat. Suitable habitat for nesting mountain plovers includes grasslands, mixed grassland areas and short-grass prairie, shrub-steppe, plains, alkali flats,

agricultural lands, cultivated lands, sod farms, and prairie dog towns. We encourage you to develop protective measures with an assurance of implementation should mountain plovers be found within the project areas.

Wetlands, Streams, and Riparian Habitats: Wetlands perform significant ecological functions which include: (1) providing habitat for numerous aquatic and terrestrial wildlife species, (2) aiding in the dispersal of floods, (3) improving water quality through retention and assimilation of pollutants from storm water runoff, and (4) recharging the aquifer. Wetlands also possess aesthetic and recreational values. If wetlands may be destroyed or degraded by the proposed action, those wetlands in the project area should be inventoried and fully described in terms of their functions and values. Acreage of wetlands, by type, should be disclosed and specific actions should be outlined to avoid, minimize, and compensate for all unavoidable wetland impacts.

Riparian or streamside areas are a valuable natural resource and impacts to these areas should be avoided whenever possible. Riparian areas are the single most productive wildlife habitat type in North America. They support a greater variety of wildlife than any other habitat. Riparian vegetation plays an important role in protecting streams, reducing erosion and sedimentation as well as improving water quality, maintaining the water table, controlling flooding, and providing shade and cover. In view of their importance and relative scarcity, impacts to riparian areas should be avoided. Any potential, unavoidable encroachment into these areas should be further avoided and minimized. Unavoidable impacts to streams should be assessed in terms of their functions and values, linear feet and vegetation type lost, potential effects on wildlife, and potential effects on bank stability and water quality. Measures to compensate for unavoidable losses of riparian areas should be developed and implemented as part of the project.

Plans for mitigating unavoidable impacts to wetland and riparian areas should include mitigation goals and objectives, methodologies, time frames for implementation, success criteria, and monitoring to determine if the mitigation is successful. The mitigation plan should also include a contingency plan to be implemented should the mitigation not be successful. In addition, wetland restoration, creation, enhancement, and/or preservation does not compensate for loss of stream habitat; streams and wetlands have different functions and provide different habitat values for fish and wildlife resources.

Best Management Practices (BMPs) should be implemented within the project area wherever possible. BMPs include, but are not limited to, the following: installation of sediment and erosion control devices (e.g., silt fences, hay bales, temporary sediment control basins, erosion control matting); adequate and continued maintenance of sediment and erosion control devices to insure their effectiveness; minimization of the construction disturbance area to further avoid streams, wetlands, and riparian areas; location of equipment staging, fueling, and maintenance areas outside of wetlands, streams, riparian areas, and floodplains; and re-seeding and re-planting of riparian vegetation native to Wyoming in order to stabilize shorelines and streambanks.

Wherever practicable, the Service recommends that project proponents implement conservation practices that restore or improve the passage of aquatic organisms. Improperly installed culverts may increase bank erosion and sedimentation, result in channel scouring if the structures accelerate flow, or cause upstream bank erosion if structures slow water movement. Improperly installed or sized culverts that create plunge pools or cause wider, more shallow channels up- or

downstream of the culvert may block aquatic organism and fish movement, further fragmenting habitat and genetically isolating populations. The placement of a concrete bottomed culvert in a natural stream bed will ultimately change the character and velocity of the stream, and further reduce available aquatic habitat.

Construction, reconstruction, replacement, or retro-fitting of existing culverts should result in a stream channel and floodplain that functions as it did prior to installation of a stream-crossing structure. Bridges, bottomless arches, or partially buried pipe arch culverts are strongly preferred to round, corrugated metal pipes. This is particularly true for culverts longer than 100 feet (30 m), or where gradients are steeper than 4 percent (2 degrees). Flat-bottomed structures reduce velocity and can be bedded with the natural substrate to function like the streambed. Corrugations or baffles are preferred to smooth surface pipes if metal materials are used. Culverts should be designed to pass a 50-year flood at a static head and a 100-year flood with a headwater depth. For fish passage, a larger pipe with lower flow speeds is always preferable to a narrower pipe. Outlet velocities should be maintained at speeds no higher than the maximum velocity of the natural stream, and the bottom of the culvert must be at or below the natural streambed at the inlet and outlet. Any culvert design that can be installed at close to zero slope is preferable to ensure passage of different organism life-stages. These considerations suggest that cross-sectional area should not be restricted following structure installation, slope should remain unchanged, and post-construction roughness coefficients should approximate those prior to construction (Baker and Votapka 1990; Bates et al. 2003; Gregory et al. 2004; Warren and Pardew 1998).

The Service recommends that project proponents implement planning for aquatic passage by first consulting the Wyoming Game and Fish Department, or Federal land management agency as applicable, to identify watersheds where passage has been identified as a conservation concern. Proponents should consider use of the aquatic passage planning tools maintained by the USDA Forest Service at http://www.stream.fs.fed.us/fishxing/index.html. The Service provides financial and technical assistance to remove or bypass artificial barriers that impede aquatic passage through the National Fish Passage Program (NFPP). This program is a voluntary, non-regulatory effort that promotes coordinated partnerships to achieve conservation of aquatic species (http://www.fws.gov/fisheries/fwco/fishpassage/).

Thank you for your continued assistance in the conservation of endangered, threatened, and proposed species. If you have any questions or comments on this biological opinion, please contact our office at the letterhead address or phone Clark McCreedy at (307) 772-2374 ext. 228.

Sincerely,

Scott Hicks

for Brian T. Kelly
Field Supervisor
Wyoming Field Office

cc: WGFD, Nongame Coordinator, Lander, WY (B. Oakleaf)
WGFD, Statewide Habitat Coordinator, Lander, WY (M. Flanderka)
WYDOT, Wildlife Specialist, Cheyenne, WY (T. Hart)

PROGRAMMATIC BIOLOGICAL OPINION
FOR THE
WYOMING STATEWIDE
TRANSPORTATION IMPROVEMENT PROGRAM (STIP)

FHWA/WYDOT

July 30, 2010

Prepared by
U.S. FISH AND WILDLIFE SERVICE
WYOMING FIELD OFFICE
CHEYENNE, WYOMING

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PROGRAMMATIC BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The Programmatic Biological Assessment (PBA; Thompson 2009) evaluated the effects of typical Federal Highway Administration (FHWA)/Wyoming Department of Transportation (WYDOT) highway improvement projects over a five year period (program) on endangered, threatened, proposed, experimental non-essential, and candidate species. This evaluation is based on Appendix A which lists proposed annual projects for the next five years by WYDOT District boundaries. The PBA will be re-evaluated every five years and consultation re-initiated with the Service as necessary. In addition, annual monitoring and reporting will occur for each project (See PBA, Appendix B, Project Specific Reporting Form).

The PBA did not consider actions associated with the continued operation, use, and maintenance of highways. These actions are interrelated in that they would not occur without the road being there, but they are existing and are not considered part of this Federal action of authorizing the expenditure of Federal funds for highway project activities considered in the PBA. Regardless of whether these actions were analyzed in the PBA, the Service is obligated, under 50 CFR 402.14, to evaluate the effects of the action (including the direct, indirect and cumulative effects), on listed species or designated critical habitat. This evaluation will occur during the Service's analysis of effects in the biological opinion, however as these interrelated and interdependent actions and their resultant effects are not considered part of the proposed action as identified in the PBA, no incidental take coverage will be provided to FHWA or WYDOT for these ongoing actions through this PBO.

WYDOT highway construction projects are managed under the State Transportation Improvement Program (STIP) and typically fall within one of six general project categories. The STIP for the next five years and each general project type are described below. Although not necessarily a project category, mineral source operations are needed to implement these projects. Therefore mineral source operations have been included as a project type, described below. The need for a highway construction project is based on a number of factors including deficiencies of the road in meeting current design and safety standards, level of service, funding, and the functional classification of the road.

The PBA addressed potential impacts from WYDOT projects on species and critical habitat currently listed under the ESA. In the event of future listings or changes in status of species, the consultation will be re-initiated and an effects analysis conducted for the new species. In addition, consultation will be re-initiated if: (1) the scope of work changes so as to create potential effects to listed species or critical habitat not previously considered; or (2) new information or study reveals effects of highway projects may impact listed species in a manner not considered in this PBO.

State Transportation Improvement Program

The STIP is a staged, multi-year, statewide, intermodal program of transportation projects which is consistent with the Statewide transportation plan and planning processes. The STIP is a comprehensive list of highway projects in the state and is used to track and manage the progress of projects and determine needs and priorities. The STIP programs and schedules highway

projects throughout five districts in the state. All known WYDOT projects that fall within the National Highway System and scheduled for the next five years are listed in Appendix A by district. A total of approximately 228 projects are addressed in this list. The STIP and the projects identified therein are subject to revision based upon workload, funding and contractor availability. However, it is the expectation of this PBO that although projects may be substituted and/or revised the total affects attributed to a particular project and/or species will remain the same or be reduced.

Highway Project Types.

WYDOT highway construction projects fall into the following general categories (Table 1). These project types include: (1) new construction and highway relocation; (2) reconstruction with added capacity; (3) reconstruction with no added capacity; (4) restoration or resurfacing; (5) environmental projects; (6) safety projects, and (7) material sources. Each of these project types is described in more detail below. Each project type can apply to different highways in the state. Wyoming highways under the Department of Transportation system include two-lane primary roads, two-lane secondary roads, four-lane primary roads, four-lane primary roads with a median; and four-lane interstate highways (Table 2). Generally speaking, each one of these highway classifications has standard specifications that apply to that road class. The purpose of most highway construction projects is to reconstruct a given section of highway to meet the specifications for that road classification. All highway projects include land clearing and stockpiling soils for use in restoration and rehabilitation of the site after project work is completed.

New Construction and Roadway Relocation. Projects under this type are construction of new roads on new alignments as a new facility. Generally, projects that fall under this type are for replacement or extension of an existing road and include new bridges and acquisition of the highway right-of-way property. This project type applies to all highway classifications and each project would be constructed to the corresponding specifications (Table 2). Very few new road construction projects occur in Wyoming. Roadway relocation projects sometime occur where past or current mining activity warrants rerouting a highway. According to Appendix A, there are 6 of these types of projects proposed in the next five years (2010 to 2014).

Reconstruction with Added Capacity. Reconstruction projects involve those projects where the old or existing pavement is removed and replaced. Often the whole roadbed is removed or recycled and the road is rebuilt from the base up. Reconstruction projects with added capacity involve widening the road by adding continuous additional through lanes (e.g., two-lane highway to four-lane highway) or adding interchanges and usually include changes in the highway alignment to improve safety and accommodate the additional travel lanes. When necessary, reconstruction projects also include components such as replacement of bridge or drainage structures, improvement of interchanges, utility changes, drainage improvements, shoulder and clear zone improvements. According to Appendix A, there are 14 of these types of projects proposed in the next five years (2010 to 2014).

Table 1. Project Type Descriptions

Project Type	Description
01/07 - New Construction and roadway relocation	Construction of new roadway on new alignment as a new facility, as replacement for an existing roadway, or as an extension of an existing roadway. These improvements would typically include new bridge/drainage structures and require substantial additional ROWs. This project type applies to the following highway classifications: (1) 2 Lane Primary, (2) 2 Lane Secondary, (3) 4 Lane Primary, (4) 4 Lane Primary with Median, and (5) 4 Lane Interstate.
03/08/10/13 - Reconstruction, Added Capacity (Major Widening)	Construction on approximate alignment of an existing route where the old pavement structure is removed and replaced. Reconstruction includes widening to provide continuous additional through lane(s), or adding, or revising interchanges, total or partial replacement of bridge structures/drainage structures, replacing other highway elements including grade separation structures and improvements to existing intersections. Also included, where necessary, are other incidental improvements such as utility, drainage, and shoulder improvements. These improvements may require substantial additional rights-of-way. This project type applies to the following highway classifications: (1) 4 Lane Primary, (2) 4 Lane Primary with Median, and (3) 4 Lane Interstate.
04/11/14 - Reconstruction, No Added Capacity (Minor Widening)	Construction to widen travel lanes and/or shoulders of an existing roadway without adding through lanes. Project includes reconstructing the existing pavement, total or partial reconstruction of bridge structures/drainage structures, and other incidental improvements such as utility, drainage, and shoulder improvements. These improvements may require minor additional rights-of-way. This project type applies to the following highway classifications: (1) 2 Lane Primary, (2) 2 Lane Secondary, (3) 4 Lane Primary, (4) 4 Lane Primary with Median, and (5) 4 Lane Interstate.
05/06 - Restoration or Resurfacing	Construction for placement of additional surface material over the existing roadway to improve serviceability or to provide additional strength. There may be some upgrading of unsafe features and/or bridge deck surfacing, and other incidental work in conjunction with resurfacing. These improvements are typically within existing rights-of-way, but may require minor additional rights-of-way. This project type applies to the following highway classifications: (1) 2 Lane Primary, (2) 2 Lane Secondary, (3) 4 Lane Primary, (4) 4 Lane Primary with Median, (5) 4 Lane Interstate.
20 - Environmental Only	Improvements that do not provide any increase in the level of service, in the condition of the facility, or in safety features. Typical improvements, which would fall in this category, would be transportation enhancements, rest area construction or modification, bicycle and pedestrian facilities, noise barriers, roadside landscaping and other environmentally related features not built as a part of any other improvement type. These improvements are typically within existing ROWs, except for new rest area construction and are independent of all the highway classifications.
21 - Safety	Improvements that provide features or services to enhance safety. For example, expenditures on projects designed to improve the safety of at-grade railroad crossings, weather monitoring systems, construction of port-of-entries for the enforcement of vehicle weight regulations. These improvements are typically within existing rights-of-way, except for new port-of-entry construction. This project type is independent of all the highway classifications.
Material Sources	Sources of raw materials used in highway construction projects. Typically, material sources provide rock or gravel for use in the asphalt or concert highway surface, but may also be a source of material for use in the road base or in fill slopes. Material sources as distinguished from borrow sources are typically independent of highways and may be used for multiple projects. The raw material mined from material sources is typically processed at the mine site and then either hauled to a project area for stockpiling or stockpiled at the source site. The haul road to the site is included as part of the material source. This project type is independent of all the highway classifications.

Reconstruction projects with added capacity often require additional right-of-way acquisition. This project type applies to two lane highways being upgraded to four lane highways: four lane primary, four lane primary with a median, and four lane interstate highways (Table 2). On an average annual basis very few added capacity projects occur. This project type usually occurs near urban areas where traffic volumes are heaviest.

Reconstruction without Added Capacity. Reconstruction without added capacity include projects that widen travel lanes and add or widen shoulders of an existing roadway without adding through lanes or interchanges. Reconstruction projects involve removing the existing roadway and replacing it with new pavement and may include some alignment changes to improve highway safety. Projects in this type also include, when necessary, reconstructing bridge or drainage structures, utilities improvements, drainage improvements, and shoulder and clear zone improvements. Reconstruction projects without added capacity often require some additional right-of-way acquisition where alignment shifts or widening warrant. This project type applies to all highway classifications and each project would be constructed to the corresponding specifications (Table 2). Reconstruction projects without added capacity are one of the most common highway construction project types in Wyoming. According to Appendix A, there are 84 of these types of projects proposed in the next five years (2010 to 2014).

Restoration or Resurfacing. Restoration or resurfacing projects involve placement of additional or new surface material over the existing roadway or highway base. These projects include simply overlays where new surface material is added to the existing road or mill and overlays where the existing surface is ground off and a new surface put down. These projects are intended to improve serviceability and/or provide additional highway strength. In some cases, these projects include upgrading of unsafe features, resurfacing bridge decks, and other incidental work in conjunction with resurfacing (e.g., minor widening of shoulders, resurface of approaches, replacing cattle guards, striping, etc.). Resurfacing projects usually fall within the existing right-of-ways but may require some minor right-of-way acquisition. This project type applies to all highway classifications (Table 2). Restoration or resurfacing projects are one of the most common highway construction project types. According to Appendix A, there are 57 of these types of projects proposed in the next five years (2010 to 2014).

Environmental Only Projects. Environmental only projects are those that do not provide any increased level of service, improvement to the condition of facility, or safety features. Typical projects which would fall in this category would be transportation enhancements; rest area construction or modification; facilities for pedestrians and bicycles; scenic easements and/or scenic or historic sites; scenic or historic highway programs; roadside landscaping and/or scenic beautification; historic preservation; preservation of abandoned railway corridors; archaeological planning and research; mitigation of water pollution due to highway runoff; noise barriers; recreational trails; or other environmentally related feature not constructed as part of any other project type. Euvironmental only projects typically occur within existing right-of-ways except for some of the larger projects such as new rest area construction. This project type is independent of all highway classifications. According to Appendix A, there are 27 of these types of projects proposed in next five years (2010 to 2014).

Safety Projects. Safety projects are those that provide features or services designed to enhance safety. Typical projects which fall in this category include reconstructing railroad crossings; weather monitoring systems; traffic alert signs; port-of-entry facilities for enforcement of vehicle

weight restrictions; and pedestrian crossing improvements. Safety projects typically occur within existing right-of-ways except for construction of port-of-entry facilities. This project type is independent of all highway classifications. According to Appendix A, there are 40 of these types of projects proposed in the next five years (2010 to 2014).

Material Sources. Materials sources or pits supply the raw materials used in highway construction. Typically a material source is distinguished from a borrow source by being located off-highway or outside the right-of-way for a given highway project. Borrow sources are often located within the highway right-of-way and are typically used for fill slopes or re-contouring clear zones. Material sources may he existing or new. Existing sources are typically operating pits with on-going or seasonal mining operations. Approximately 1-2 new material sources are established in each District annually, for a total of 5 to 10 new sources over the next five years. For new sources, typical disturbance area per project is between 5-10 acres. This disturbance area includes the haul road to and from the site which is usually dirt or gravel road to the nearest public road. New material sources undergo environmental impact review which includes habitat surveys and listed species surveys, if necessary.

Material source operations typically include the following activities: clearing brush and vegetation from the site; stripping and stockpiling topsoil; stripping and stockpiling overburden material; material (gravel) extraction to variable depth. Once the material mining is complete the overburden is replaced and the site is re-contoured. Reclamation of the site includes replacing and spreading the topsoil and re-vegetation. If the contractor processes the material on site, there will be temporary power lines brought to the site to operate the processing equipment and some stockpiling of processed material may occur.

General Highway Reconstruction/Construction and Associated Activities. Generally, highway reconstruction/construction and associated activities (relocations, bridge replacements and safety and environmental only projects) may result in the following actions on the ground. For example a bridge reconstruction project might include removal of the existing bridge and replacement with culverts at the same location.

Bridge replacements are intended to improve highway safety by alleviating problems associated with the existing bridges and guardrails, address traffic concerns, upgrade stream crossings, and to meet current design and safety standards of the WYDOT. Traffic may be routed through the area by the construction and use of temporary detours around each bridge crossing. Temporary detours may consist of placing culverts in the stream adjacent to each existing bridge crossing. The detour area and construction permit area are located within the right of way and in some locations may encroach upon the riparian corridor.

Clearing and grubbing involves removing vegetation within the right-of-way. Typically this occurs during new construction or reconstruction with added capacity. Under normal highway construction projects clearing and grubbing occurs at the stake slope limits. All standards for construction follow the Standard Specifications for Road and Bridge Construction (WYDOT 2003).

Table 2. Highway Classification Specifications

TYPE OF HIGHWAY	SPECIFICATIONS ON THE GROUND
2 Lane Primary	• 150 ft. (+/-) Right of Way • (2) 12 ft. Travel Lanes • (2) 6-8 ft. Shoulders on outside travel lanes • (2) 30 ft. Clear Zones • Variable Slope Distances
2 Lane Secondary	• 150 ft. (+/-) Right of Way • (2) 12 ft. Travel Lanes • (2) 4-8 ft. Shoulders on outside travel lanes • (2) 30 ft. Clear Zones • Variable Slope Distances
4 Lane Primary	• 150 ft. (+/-) Right of Way • (4) 12 ft. Travel Lanes • (2) 6-8 ft. Shoulders on ontside travel lanes • (2) 30 ft. Clear Zones • Variable Slope Distances
4 Lane Primary with Median	• 200 ft. Right of Way • (4) 12 ft. Travel Lanes • (2) 4 ft. Shoulders on inside travel lanes • (2) 8 ft. Shoulders on outside travel lanes • (2) 30 ft. Clear Zones • Variable Slope Distances • Variable Width Median
4 Lane Interstate	• 300 ft. Right of Way • (4) 12 ft. Travel Lanes • (2) 4 ft. Shoulders on inside travel lanes • (2) 10ft. Shoulders on outside travel lanes • (4) 35 ft. Clear Zones at edges of each shoulder • Variable Slope Distances • Variable Width Median
Environmental Only projects	• Rest Areas variable; footprint approximately 10-20 acres • Bike paths (10 ft wide) approximately 1 acre per mile of length
Material Sources	• Typically a quarter of a quarter section (40 acres) is designated in the permitted area. • Haul roads variable (20 -24 ft wide) approximately 1 acre per mile of length included in the permitted 40 acre site. • Disturbed (mine) areas for individual projects variable but typically 5-10 acres per highway project which includes the haul road, processing (crusher) site, and stockpiles.

In reconstruction, restoration, or resurfacing, the existing pavement is typically milled and stockpiled for use within the new pavement structure. Repairs are made in areas where the soils underlying the road are poor quality. In these areas, the unsuitable material will be excavated and replaced with suitable materials. The roadway may be widened by excavation of cut slopes and or addition of embankment fill. Roadway widening may be confined to one side, with the centerline shifted accordingly to avoid important natural or cultural features and to minimize cut-and-fill slopes along the roadside, or widening to both sides to maintain the existing roadway centerline.

For highway construction or reconstruction, dependent on road speeds and classification, standard fill slope ratios will vary from of 1:4 to 1:8. These ratio will be the design standard for the slope from the edge of the pavement to the bottom of the ditch or where the slope catches or meets the natural terrain. This slope design is the minimum traversable and recoverable slope recommended by the American Association of State Highway and Transportation Officials and has the dual effect of reducing the need for guardrails and aiding reclamation/revegetation of the roadway shoulder. (The larger the slope ratio (1:8) the lower the fill slope, allowing for safer recovery on faster highways.)

For highway construction or reconstruction, where wildlife habitat linkages have been identified, transitions between cuts and fills will allow for wildlife crossings and will be included in the construction contract. Geogrid-reinforced earth walls may be constructed at fill side locations where steeper fill slopes minimize impacts. These walls are then vegetated. The exact location of these embankments are coordinated with biologists or other environmental disciplines.
For all highway construction or reconstruction, cut and fill slopes are developed with varying heights. Rock cuts are designed and sculpted to minimize visual impacts by producing a form and texture compatible with natural rock outcrops and cliffs. Drill holes from blasting are tested to minimize visual impacts. Excavation into stable cliffs will be made at steep angles to reduce disturbance. Some slope tops might need to be rounded back and overburden removed to reduce rockfall potential. Additionally, ditches will be deepened and widened at selected locations to catch rockfall where it is a problem. Soil slopes will be flattened (slope angle reduced) from existing cut and fill slopes, where required to reduce erosion and promote revegetation. After completion, the majority of the impacted area will be re-vegetated on the new cut and fill slopes.

For all highway construction or reconstruction, where trees must be cleared along the road edge, designs will create an irregular forest edge and preserve as many large trees on the edge of the disturbance as possible. At wildlife habitat linkage zones, aggressive revegetation efforts will be employed to re-establish suitable native (or indigenous) plant materials along newly constructed embankments to provide cover and reduce the possibility of creating a large open area that may inhibit wildlife species from crossing the roadway. The vegetation will be established at expected travel ways leading in to deeper cover or natural crossing points.

Assumptions. Because the PBA has been completed with the understanding that projects are grouped into similar types, site-specificity for each project is lost. As a result, in order to further understand what the potential effects from these highway projects are, the following assumptions have been made.

1. Where total length and width of disturbance area is described by Highway Classification specifications in Table 2, it is assumed that these descriptions are an average of the total disturbance by mile and may be narrower or wider at any given time during construction. These widened areas may include borrow sites and staging areas, bypass zones and fuel storage sites while narrowed areas may include areas where riparian functions are a concern or the full extent of the right-of-way is not needed for construction activities. In nearly every case the full right-of-way will not be impacted but for actual disturbance associated with road activities.

2. Existing borrow sources are included under discussion of highway construction in this PBO unless they are considered as material source sites. Material source sites are addressed as a separate project type in this PBO. Material source sites will not be constructed within any riparian zones. Consistent with the 2005 PBO, it is assumed up to 10 materials source sites, of undetermined location, may be constructed to service projects that may affect Ute's ladies-tresses.

3. Where the term "minor" is used no additional habitat or affects to listed species will occur.

4. Where the cooperating federal agency requires additional analysis for listed species, their requirement will be added to the information. This new information may alter the determination made by the FHWA/WYDOT in this PBA and resultant PBO, resulting in re-initiation of section 7 consultation for a particular project.

5. Habitat requirements for Colorado butterfly plant and Ute's ladies-tresses overlap where the species ranges overlap.

6. Consistent with the approach taken under the 2005 PBO, Federal Highways Administration projects that occur on other public (Federal) lands are not part of this analysis.

7. The proposed Project list identified in Appendix A is the FHWA/WYDOT's best estimate of what projects will be implemented over the next five years. The Service agrees that if timing or priority for these projects is changed that another project with the ***same effects or less*** could replace the reviewed project(s) identified in Appendix A.

8. Certain projects identified within Appendix A have completed consultation or are currently undergoing consultation with the Service (e.g., Hoback Junction Projects).

9. Major new construction or reconstruction projects that require an EIS ***AND*** have the potential to adversely affect listed species will likely require separate analysis under section 7 of the Act unless the effects are consistent with those already described in the PBO. In addition, new construction will need to address maintenance and operation activities neither of which are addressed in the PBA. Consultation will be re-initiated if: (1) the scope of work changes significantly so as to create potential effects to listed species or critical habitat not previously considered; or (2) new information reveals effects of highway projects that may affect listed species in a manner not previously considered.

10. This PBO does not project- or site-specifically address the Service's responsibilities for other trust resources including wetlands, migratory birds, bald and golden eagles, and other trust resources. The Service anticipates that FHWA/WYDOT will coordinate with the Wyoming Ecological Services Field Office to develop conservation measures for these species and resources. As necessary, these issues will be addressed under separate correspondence.

CONSERVATION MEASURES (From the PBA, clarified for the PBO)

Ute Ladies'-tresses Orchid:

1. Irrespective of whether or not a particular wetland is regulated by the Army Corp of Engineers (i.e., is jurisdictional or non-jurisdictional), all projects which impact wetlands will be evaluated for suitability for Ute ladies'-tresses orchid (i.e., below 6,800 feet elevation; non-saline soils; open palustrine wetlands with no overstory; perennial water source).

2. Wetlands, jurisdictional or non-jurisdictional, with characteristics suitable for Ute ladies'-tresses will be surveyed prior to disturbance according to USFWS guidelines to determine presence/absence of the species.

3. Surveys conducted for Ute ladies'-tresses, per Service guidelines as described with the PBA, should include the reporting of GPS coordinates of the survey point location or point locations in the case of linear transects of riparian areas.

4. Wetlands disturbed as a result of implementation of the proposed action, determined to be suitable for Ute ladies'-tresses, will be reclaimed in a manner which preserves topsoil from the affected areas and utilizes it for reclamation thus preserving the seed bank, propagules, and other biological material.

Colorado Butterfly Plant:

1. Irrespective of whether or not a particular wetland is regulated by the Army Corp of Engineers (i.e., is jurisdictional or non-jurisdictional), all projects within Laramie and Platte counties which impact wetlands will be evaluated for suitability for Colorado butterfly plant (i.e., floodplain of a stream; open palustrine wetlands with no overstory; located in Platte or Laramie counties).

2. Riparian areas with characteristics suitable for Colorado butterfly plant, will be surveyed prior to disturbance according to USFWS guidelines to determine presence/absence of the species.

3. Surveys conducted for Colorado butterfly plant, per Service guidelines as described with the PBA, should include the reporting of GPS coordinates of the survey point location or point locations in the case of linear transects of riparian areas.

4. Wetlands disturbed as a result of implementation of the proposed action, and particularly those determined to be suitable for Colorado Butterfly plant, will be reclaimed in a manner which preserves topsoil from the affected areas and utilizes it for reclamation thus preserving the seed bank, propagules, and other biological material.

STATUS OF THE UTE LADIES'-TRESSES ORCHID

Ute Ladies'-tresses Species Description

Ute ladies'-tresses (*Spiranthes diluvialis*) is a perennial, terrestrial orchid with stems 20 to 50 centimeters (cm) tall arising from tuberously-thickened roots measuring up to 1 cm in diameter. It has narrow leaves about 28 cm long and 1.5 cm wide at the base of the stem and becomes reduced in size going up the stem. The flowers, in an inflorescence (flowering spike) of 3 to 30 or more flowers, are small white to ivory arranged in a spiral. The species is characterized by stout flowers that are gaping at the mouth. The sepals and petals, except for the lip, are straight, although the lateral sepals are variably oriented. These lateral sepals spread abruptly from the base of the flower and are free to the base. The rachis is densely pubescent with the longest trichomes, or hairs, 0.2 millimeters long or longer (USFWS 1992, 1995).

Ute Ladies'-tresses Life History

Very little is known about the life history of Ute ladies'-tresses (USFWS 1995). Much of what is presumed about the species' life history is drawn from knowledge of other orchids. Orchids generally have very small seeds that require symbiotic associations with mycorrhizal fungi for germination. Many species of orchids are saprophytic, underground plants that may persist for many years underground before emerging above ground. The mycorrhizal stage is reported to last 8 years in *S. spiralis* and green leaves are first produced up to 11 years after germination in that species (Wells 1967). Studies of *S. magnicamporum* in western Kansas and Nebraska report that that species may bloom as rarely as once in 20 years. The mean life expectancy of *S. spiralis* plants studied over a nine year period was calculated to be more than 50 years (USFWS 1995).

Throughout its range, reproduction of the Ute ladies'-tresses orchid appears to be strictly sexual, with bumblebees (*Bombus* spp.) as the primary pollinators (Arditti 1992, Sheviak 1984). Flowers are protandrus (functionally male first and then female). As with other orchid species, it is thought that Ute ladies'-tresses does not reach sexual maturity for 5 to 10 years (USFWS 1995). Each orchid fruit can have several hundred to 10,000 seeds with an average of around 2,000. These seeds may be dispersed by water or wind (Wells 1967). The flowers, seed heads, and vegetative parts of the Ute ladies'-tresses orchid are palatable and can be incidentally eaten by grazing livestock. The possibility that grazers could disperse the seeds of this species has not been evaluated. The blooming period is from early August to early September, with fruits produced in mid-August to September (Fertig 2000a). Not all individual mature Ute ladies'-tresses orchids bloom every year and some may remain dormant beneath the ground surface and not show any above ground parts for at least one growing season (Arft 1995).

Populations of Ute ladies' tresses may do well under a regime of somewhat heavy use, i.e., livestock grazing and hay mowing. Grazing may have beneficial effects to the plants, especially in early summer prior to flowering or fruit production (Arft 1995, Moseley 1998). Grazing may mimic the effects of flooding, fire, or other disturbances in maintaining low vegetative cover or reducing weed cover (Moseley 1998). Mowing may be beneficial by reducing competing vegetation cover, but can be detrimental if done before fruits ripen or if hay is cut too low (Arft 1995; Hazlett 1996, 1997). Ute ladies'-tresses does not tolerate dense competition of vegetation, although a few populations are found in riparian woodlands.

The Ute ladies'-tresses orchid inhabits early successional riparian habitats such as moist stream beds, wet meadows, point bars, sand bars, abandoned stream channels, and low lying gravelly, sandy, or cobbley edges (Fertig et al. 1994, Hazlett 1999, USFWS 1995, Fertig 2000a). Ute ladies'-tresses appears to have a close affinity with floodplain areas where the water table is near the surface throughout the growing season and into early autumn. The species is found in open riparian, floodplain areas where the competing vegetation has been removed by livestock grazing, mowing or by flooding events approximately one month prior to flowering. Ute ladies'-tresses is known to grow in agricultural lands managed for grazing in the winter and hay production in spring and summer, where mowing occurs in mid-July (USFWS 1995). The elevational range of known Ute ladies'-tresses occurrences is 1800-6800 feet (Arft and Ranker 1998), while the known Wyoming populations range from 4650-5420 feet (Fertig 2000a).

Ute Ladies'-tresses Population Dynamics

Ute ladies'-tresses population levels and viability are, at least in part, determined by habitat conditions created and maintained by natural water processes. Therefore, the significance of population size and distribution within a watershed can, at least partially, be assessed in terms of the ability of the watershed factors to perpetuate it. However, the linkages between watershed processes, habitat conditions, and Ute ladies'-tresses population response are complex and not completely understood.

The locations of populations within a watershed vary with the availability of suitable habitat. Sizes of populations fluctuate naturally. Some years not a single Ute ladies'-tresses individual appears above ground. The number of flowering adults does not give an accurate picture of population size nor tell us anything about population structure. More information is necessary regarding population viability (USFWS 1995).

If estimated population size is based on the number of Ute ladies'-tresses flowering spikes, then populations appear to fluctuate dramatically in size from year to year (USFWS 1992). For example, the primary site for the Boulder, Colorado population contained 5,435 plants in 1986, 200 plants in 1987, 131 plants in 1988, 1,137 plants in 1989, 1,894 plants in 1990, and at least 80 plants in 1991 (USFWS 1992). This variability in apparent population size is consistent with other observations made of other orchid species.

However, Wells (1967) questions that apparent fluctuations in orchid numbers are accurate descriptions of the actual dynamics of the orchid populations. According to Wells (1967), the criterion adopted for judging whether the number of orchids at a site has changed or not has been the number of flowering spikes displayed at the time of visit. This may be an unsatisfactory criterion for measuring a quantitative change in population because, as has been demonstrated, plants may spend several years as vegetative rosettes or as underground tubers (as many as 11 years) with no above-ground parts. Furthermore, according to Wells (1967), the autumn ladies'-tresses orchid (*S. spiralis)* grows mainly in short grassland which is typically maintained in that condition by some kind of grazing which can damage some of the flowering spikes making a visual estimate of number based on count of flowering spikes unreliable. Arft's (1995) work on Ute ladies'-tresses supports this theory as well.

At the time of listing of Ute ladies'-tresses, most of the species' historic western populations on the Wasatch Front and in the Great Basin were believed to have been extirpated by urbanization. Most known populations contained fewer than 1,000 plants when counted in 1990 and 1991. Eastern Utah populations were also typically small in size. Local extirpations may have taken place in currently unoccupied potential habitat similar to extirpations which occurred along the Wasatch Front, the Great Basin, and certain historic populations in Colorado (USFWS 1992).

In 1992, when the species was listed, the total known population size of Ute ladies'-tresses was fewer than 6,000 individuals from 11 known populations in Colorado, Utah, and Nevada (USFWS 1992). The January 17, 1992, listing of Ute ladies'-tresses resulted in an increase in surveys for the species. Since that time, additional populations have been located in Utah, Montana, Idaho, Nevada, Colorado, Nebraska, Washington, and Wyoming. In 1995, the total known population size of Ute ladies'-tresses was approximately 20,500 individuals (USFWS 1995). Since 1995, another 24 populations have been discovered, including several large occurrences along the Green River in Colorado and Utah, the Snake River in Idaho, and Niobrara River in Wyoming and Nebraska. Ute ladies'-tresses are now known to occupy 674-783 acres of habitat. The highest number of plants recorded in any one year was 38,438 in 1998, based on sampling 23 of 55 populations known at that time. Since these populations were not selected randomly, no useful extrapolations can be made to estimate rangewide numbers based on annual counts (Fertig et al. 2005).

Ute Ladies'-tresses Status and Distribution

On January 17, 1992, the Service listed Ute ladies'-tresses as threatened in its entire range under the Act (57 FR 2053). The Ute ladies'-tresses was first described as a species in 1984 by Dr. Charles J. Sheviak from a population discovered near Golden, Colorado (Sheviak 1984). At the time of its listing, Ute ladies'-tresses was known from 11 populations occurring in Colorado, Utah, and Nevada. Critical habitat has not been designated at this time. To date, no recovery plan has been approved for this species. However, a draft recovery plan has been written (USFWS 1995).

Ute ladies'-tresses was first discovered in Wyoming by the University of Wyoming, Rocky Mountain Herbarium in 1993. Formal surveys for Ute ladies'-tresses then began in Wyoming in 1994, one year after B. Ernie Nelson, manager of the Rocky Mountain Herbarium, discovered the state's first population in Goshen County. Nelson along with other researchers conducted general floristic surveys in southeast Wyoming, the Green River Basin, and Laramie Basin from 1994-1999, finding an additional new colony along Antelope Creek in Converse County in 1994 (Hartman and Nelson 1994). The population on Antelope Creek occurs on Bureau-administered land in the Casper Resource Area. This population has been censused several times and has remained small (11-35 plants seen during various years). The habitat there is considered marginal and the Antelope Creek population is considered the least viable of the populations within Wyoming (Fertig 2000a).

Hartman and Nelson (1994) found that populations discovered in Wyoming occurred on terraces, low slopes, and oxbows adjacent to small streams on sandy to coarse gravelly alluvium or alkaline clays in wet meadow communities (Nelson and Hartman 1995). Based on short-term observation data, the populations that they found were thought to be stable or increasing. The sites were on lands managed for livestock grazing or hay production. Current land uses at the

time appeared compatible with the habitat needs of Ute ladies'-tresses orchid populations. The timing of grazing and mowing was thought to be critical for successful seed production (Fertig 2000a).

Surveys since 1992 have expanded the number of vegetation and hydrology types occupied by Ute ladies'-tresses to include seasonally flooded river terraces, subirrigated or spring-fed abandoned stream channels and valleys, and lakeshores. In addition, 26 populations have been discovered along irrigation canals, berms, levees, irrigated meadows, excavated gravel pits, roadside barrow pits, reservoirs, and other modified wetlands. New surveys have also expanded the elevational range of the species from 720-1830 feet (220-558 meters) in Washington to 7000 feet (2134 meters) in northern Utah (Fertig et al. 2005).

Through coordination with and cooperation from a private landowner, permission was granted in 1996 to search an area along the Niobrara River in Sioux County, Nebraska. Hazlett (1996) counted several thousand Ute ladies'-tresses (Hazlett 1996). The area was previously mown in July of that year for hay and thousands of Ute ladies'-tresses were flowering in the pasture apparently flourishing from the reduced competition following the mowing and baling. The discovery was the first reported case of Ute ladies'-tresses in the State of Nebraska. Future plans for that area are to maintain it as a working ranch or as a youth camp/nature preserve for young people (Hazlett 1996).

The Wyoming Natural Diversity Database (WYNDD) surveyed public lands in Jackson Hole and the lower Green River Basin in 1999, but did not find any new Ute ladies'-tresses sites. Staff of the WYNDD also conducted unsuccessful searches in the Powder River Basin, National Elk Refuge, and F.E. Warren Air Force Base from 1995-1997.

Various environmental consulting firms (e.g., ERO Resources 1994) have searched for Ute ladies'-tresses across Wyoming since 1994. These efforts have not documented any new colonies (Fertig 2000a). Because of the plant's irregular flowering pattern, sites which have been surveyed in the past could still harbor populations (Fertig 2000a).

Prior to 2005, Ute ladies'-tresses was known from four locations in Converse, Goshen, Laramie and Niobrara counties: a tributary to Antelope Creek (a tributary to the Cheyenne River) in northwest Converse County; a population along Bear Creek in southwestern Goshen County; a population along the Niobrara River near McMaster's Reservoir in southeastern Niobrara County; a population along Sprager Creek in Laramie County, and a recently discovered population along Horse Creek in Laramie County. These populations are monitored on a limited basis and appear to be stable (USFWS 2002). Following surveys in 2005-06, five additional populations have been recorded (Heidel 2007) within the larger watersheds of previously identified populations (Antelope and Horse Creek watersheds, and a portion of the Niobrara River watershed). Ute ladies'-tresses is known to occur in adjacent states within watersheds that encompass portions of Albany, Laramie, Park, Sweetwater, and Teton counties suggesting that the species may occur elsewhere in the State.

Ute Ladies'-tresses Threats

In 1992, the Service identified habitat loss and alteration (through urbanization, water development, residential development, conversion of open space to parks, agricultural activities); overutilization for commercial, recreational, scientific, or educational purposes; excessive livestock grazing (although mild to moderate grazing may be beneficial); inadequacy of existing regulatory mechanisms; and other factors including localized catastrophic events, competition with invasive plant species, and indiscriminate use of herbicides as the primary threats to the long term conservation of this species. These activities historically have likely been a primary cause of the fragmentation of populations now currently observed. Fertig et al. (2005) identified additional threats including ecological succession, road and other construction, recreation, flooding, haying/mowing, natural herbivory, loss of pollinators, and drought. There is increasing pressure for urban, residential, and recreational development in these wetland and riparian areas, especially along the Front Range of Colorado and the Wasatch Front in Utah. As these areas are typically in private ownership, and the projects are often privately funded, there is very little regulatory protection for the orchid there, even though it is a federally-listed species.

Incompatible agricultural or other land management practices could also threaten the Ute ladies'-tresses orchid. The orchid is quite tolerant of grazing and other forms of land and vegetation disturbance. However, continuous grazing during the flowering season, severe trampling and soil compaction, untimely herbicide applications, proliferation of aggressive native and exotic plant species indicative of site degradation, and practices that result in habitat alteration from grass/forb/sedge to shrub/tree dominance, can result in loss of vigor and eventual demise of the orchid and/or orchid pollinators. Many riparian and other wetland and wetland/upland habitats suffer from these impacts, as well.

Alterations of stream hydrology could also threaten Ute ladies'-tresses. The orchid is supported by moist soil throughout the growing season, and by wet habitats that are dominated by grass/forb/sedge communities. During the past 150 years, and continuing today, water developments, diversions, stream channel alterations for flood control or other purposes (including oil and gas development and mining), and changes in hydrograph have altered hydrology, floodplain geomorphology, and vegetation composition and trends. While in some streams and reaches this may have provided improved conditions for the orchid, in many cases it has resulted in the loss of suitable habitat and likely fragmentation or loss of the orchid within watersheds (USFWS 2004c).

STATUS OF COLORADO BUTTERFLY PLANT

Colorado Butterfly Plant Description

The Colorado butterfly plant (*Gaura neomexicana* ssp. *coloradensis*) is a semelparous, perennial herb. It has one or a few reddish, hairy stems that are 2-3 feet tall. The lower leaves are lance-shaped with smooth or wavy-toothed margins and average 2-6 inches long, while those on the stem are smaller and reduced in number. Flowers are arranged in a branched, elongate pattern above the leaves. Only a few flowers are open at any one time and these are located below the rounded buds and above the mature fruits. Individual flowers are 0.25-0.5 inches long with four reddish sepals (modified leaves surrounding the flower) and four white petals that turn pink or red with age. The hard, nutlike fruits are 4-angled and have no stalk. Non-flowering plants

consist of a stemless, basal rosette of oblong, hairless leaves 1-7 inches long (Marriott 1987, Fertig 1994, Fertig et al. 1994).

Colorado Butterfly Plant Life History

The Colorado butterfly plant (*Gaura neomexicana* ssp. *coloradensis*) occurs on sub-irrigated, alluvial (stream deposited) soils on level or slightly sloping floodplains and drainage. Colonies are often found in low depressions or along bends in wide, active, meandering stream channels a short distance upslope of the actual channel. The plant requires early-to-mid succession riparian habitat. It commonly occurs in communities dominated by redtop (*Agrostis stolonifera*) and Kentucky bluegrass (*Poa pratensis*) on wetter sites, and wild licorice (*Glycyrrhiza lepidota*), Flodman's thistle (*Cirsium flodmanii*), Curlytop gumweed (*Grindelia squarrosa*), and smooth scouring rush (*Equisetum laevigatum*) on drier sites. Both these habitat types are usually intermediate in moisture between wet, streamside communities dominated by sedges (*Carex* spp.), rushes (*Juncus* spp.), and cattails (*Typha* spp.), and dry, upland shortgrass prairie. Typical Colorado butterfly plant habitat is open, without dense or overgrown vegetation. Coyote willow (*Salix exigua*) and Canada thistle (*Cirsium arvense*) may become dominant in Colorado butterfly plant habitats that are not periodically flooded or otherwise disturbed.

The Colorado butterfly plant is an early successional (although probably not a pioneer) plant adapted to use stream channel sites that are periodically disturbed. Historically, flooding was probably the main cause of disturbances in the plant's habitat, although wildfire and grazing by native herbivores also may have been important. Although flowering and fruiting stems may undergo increased mortality because of these events, vegetative rosettes appear to be little affected (Mountain West Environmental Services 1985). The survival of vegetative rosettes appears to be related to available soil moisture. Heidel (2004, 2005), for example, found a significant correlation between census number and summer precipitation two years prior in populations at the U.S. Department of Defense F. E. Warren Air Force Base (WAFB). Because the long-term viability of this plant relies on successful flowering and fruiting, as well as the difficulty in identifying small rosettes, only the flowering plants typically are counted to estimate population size and trends. The establishment and survival of seedlings appears to be enhanced at sites where tall and dense vegetation has been removed by some form of disturbance. In the absence of occasional disturbance, the plant's habitat can become choked out by dense growth of willows (*Salix* spp.), grasses (including red top (*Agrostis stolinifera*)), baltic rush (*Juncus balticus*), and exotic plants (such as Canada thistle [*Cirsium arvense*] and leafy spurge [*Euphorbia esula*]), which prevents new seedlings from becoming established and replacing plants that have died (Floyd 1995a).

Colorado Butterfly Plant Population Dynamics

The Colorado butterfly plant is distributed throughout its occupied range into patchy groups of subpopulations, some of which are isolated with little or no possibility of interbreeding with other local populations. The spatial structuring of this subspecies is commonly referred to as a metapopulation. Local populations exist on a patch of suitable habitat, and although each has its own, relatively independent population dynamics, the long-term persistence and stability of the metapopulation arise from a balance of population extinctions and colonization to unoccupied patches through dispersal events (USFWS 2004d).

Balancing local population extinction with new colonization events is problematic for the Colorado butterfly plant since naturally occurring disturbance associated with creation of suitable habitat for colonization, such as seasonal floods, has been largely curtailed by water development and flood control. Consequently, what once may have been a dynamic, but stable, metapopulation, may now be characterized by a series of local populations with a very low probability of colonizing new patches, and little opportunity to replace extirpated populations. Biological characteristics that may serve to reduce these negative consequences at least in the short-term for the Colorado butterfly plant include seed banks, delay of stage transition from rosette to flowering adults under poor habitat conditions, and self-compatibility. However, the regional persistence of a metapopulation has been shown to be possible only when the rate of colonization exceeds the local rate of extinction. Consequently, the removal of opportunities for future colonization events poses a significant threat to long-term metapopulation persistence and species viability. This highlights the importance of maintaining viability of as many local populations as possible through conservation (USFWS 2004d).

Most of what is known about the Colorado butterfly plant and its conservation is based on surveys and research conducted on populations located on the WAFB in Cheyenne, Wyoming, from 1984 to 2003. Floyd and Ranker (1998) studied three Colorado butterfly plant subpopulations at WAFB from 1992 to 1994. The purpose of their study was to examine population growth, demographic variability, demographic stage transition dynamics and the probability of population extinction. Results suggested that each of the three subpopulations was not stable but exhibited significant demographic variability both spatially and temporally, and population growth values were not useful parameters to describe long-term population dynamics (Floyd and Ranker 1998, USFWS 2004d).

Annual census of flowering plants at WAFB began in 1986, and continued from 1988 to 2004, within subpopulations located at Crow Creek, Diamond Creek, and Unnamed Drainage. Census summaries provided by Heidel (2004) based on these data show that subpopulations within these three drainages are characterized by dramatic fluctuations in size (USFWS 2004d). Most populations of the Colorado butterfly plant for which census or demographic data have been collected exhibit substantial demographic uncertainty. Some of the observed temporal variation in subpopulations at WAFB has been correlated with unpredictable environmental factors such as temperature and precipitation (Floyd and Ranker 1998, Heidel 2004), and spatial variation may be attributable, in part, to fine-scale microhabitat differences in light availability or competition with other herbaceous vegetation or noxious weeds (Munk et al. 2002, Heidel 2004). Similar factors may be correlated with some of the observed demographic variability in less-well-studied populations throughout the subspecies' range. However, even for the well-studied subpopulations at WAFB, no clear cause-and-effect relationships have been found to explain the observed fluctuations in population numbers, and studies have not accounted for the majority of the observed demographic uncertainty (USFWS 2004d).

Colorado Butterfly Plant Status and Distribution

On October 18, 2000, the Colorado butterfly plant was designated as threatened throughout its entire range under the Act (65 FR 62302; USFWS 2000), and on January 11, 2005, critical habitat was designated along 51 stream miles within Platte and Laramie Counties in Wyoming (70 FR 1940; USFWS 2005). It is a short-lived, perennial herb endemic to moist soils in mesic or wet meadows of floodplain areas in southeastern Wyoming, north-central Colorado, and

extreme western Nebraska. This early to mid-seral stage species occurs primarily in habitats created and maintained by streams active within their floodplains with vegetation that is relatively open and not overly dense or overgrown.

Little is known about the historical distribution of the Colorado butterfly plant. Prior to 1984, no extensive documentation of the plants' range had been conducted. The plant was known from several historical (and presumably extirpated) locations in southeastern Wyoming and in northern Colorado, as well as from three extant populations in Laramie County in Wyoming and Weld County in Colorado. The total known population size was estimated in the low hundreds (Dorn 1979). Intensive range-wide surveys from 1984 to 1986 resulted in the discovery or relocation of more than 20 populations in Wyoming, Colorado, and Nebraska, containing approximately 20,000 flowering individuals (Marriott 1987). Additional surveys since 1992 have resulted in the discovery of additional populations in Wyoming and Colorado (Fertig 1994; Floyd 1995b). However, other historically known populations in Wyoming and Colorado have not been relocated in recent years and may no longer be extant (Fertig 1994).

Extensive surveys were conducted during 1998 to document the status of previously known populations at 14 sites in Wyoming and Colorado (Fertig 1998). All 14 sites supported populations of the Colorado butterfly plant. Repeated survey information led Fertig (1998) to conclude that 10 of these populations were either relatively stable or increasing over the long-term. Fertig (1998) estimated the entire population of this taxon to contain between 47,000 and 50,000 reproductive plants. Twelve previously known populations were not surveyed. Three of these populations were surveyed from 1989 until 1992 and were found to contain a limited number of plants. However, four populations in Colorado and five in Wyoming have not been relocated since 1986 and may be extirpated.

Surveys were conducted by the Service in 2004 during which approximately 80 percent of all habitat occupied by the Colorado butterfly plant was surveyed. Of 77 known locations at least 0.2 miles apart previously identified by Wyoming Natural Diversity Database (WYNDD), 59 locations along 94 stream miles were surveyed. A total of 17,891 reproductively mature plants were counted throughout the survey area. While 23 of the previously known 59 locations contained no plants, 23 new locations 0.2 miles apart with adult plants were identified. All plants located during the survey were within Laramie County in Wyoming and Weld County in Colorado: neither plants, nor suitable habitat, were found in Nebraska likely because of habitat deterioration associated with 5 years of continuous drought.

These 2004 survey results on both private and state land, as well as updated surveys conducted by the Service in 2005, suggest that the Colorado butterfly plant occurs only in southeast Wyoming and northern Colorado, and is likely extirpated from Nebraska. Populations of the Colorado butterfly plant occur in two locations in Colorado, both currently owned by the City of Fort Collins: the Meadow Springs Ranch in northern Weld County where the plant has been known historically; and the Soapstone Prairie Natural Area in northern Larimer County where a new population was discovered in 2005.

Three additional populations, comprised of a total of 7,322 reproductively mature plants according to recent surveys, occur on F.E. Warren Air Force Base (Heidel 2005). Survey results suggest that two of these populations appear relatively stable or increasing, while one appears to

be declining (Heidel 2005). Annual monitoring of these three populations by Wyoming Natural Diversity Database has continued for the past 18 years and is ongoing.

Colorado Butterfly Plant Threats

Of the known populations of Colorado butterfly plant, the vast majority occur on private lands managed primarily for agriculture and livestock. Haying and mowing at certain times of the year, water development, overgrazing, land conversion for cultivation, competition with exotic plants, non-selective use of herbicides, and loss of habitat to urban development are the main threats to these populations (Mountain West Environmental Services 1985, Marriott 1987, Fertig 1994). Because of the small, isolated nature of populations and few numbers present in many of them, the subspecies is much more susceptible to random events such as fires, insect or disease outbreaks, or other unpredictable events that could easily eliminate local populations. In nonagricultural, undeveloped areas, a significant threat to Colorado butterfly plant populations may result from natural succession of the plant community.

One major threat on agricultural lands may be the application of broadleaf herbicides for control of Canada thistle, leafy spurge, and other non-native plants (Marriot 1987). Although competition from weedy species may have negative impacts on Colorado butterfly plant populations, observations have indicated that the Colorado butterfly plant is highly susceptible to commonly used herbicides (especially if no special precautions are taken during application). Alternative (and presumably more Colorado butterfly plant-friendly) methods of weed control involving the release of bio-control insects, mowing, and new chemical application techniques, are currently being investigated (Fertig 1998).

While excessive grazing can lead to changes in essential habitat conditions (e.g., increases in soil temperature resulting in loss of moisture, decreases in plant cover, and increases in non-native species), managing for appropriate levels of grazing provides an important management tool with which to maintain open habitat needed by the Colorado butterfly plant. Grazing by cattle may be a threat at some sites, especially if animals are not periodically rotated or if use is concentrated in small areas during the summer flowering period. The habitat of the Colorado butterfly plant is often heavily used by livestock which tend to concentrate near water sources. In an instance of two adjacent pastures, Marriott (1987) observed that the more heavily grazed pasture supported far fewer individuals. Studies have shown that the Colorado butterfly plant may persist and thrive in habitats that are winter grazed or managed on a short-term rotation cycle (Fertig 1994, Mountain West Environmental Services 1985). Although reproductive individual Colorado butterfly plants may be grazed (the plant is quite palatable to a wide range of herbivores), the establishment and survival of seedlings and rosettes may be enhanced by the reduction of competing vegetative cover (Fertig 1994, 1996). Due to their low stature, rosettes do not appear to be regularly grazed (Mountain West Environmental Services 1985). Grazing by horses also occurs in many privately owned Colorado butterfly plant sites, but does not appear to negatively impact Colorado butterfly plant populations under normal stocking rates (Fertig 1998).

Fertig (1998) observed that mowing an area for hay production is rarely a threat to Colorado butterfly plant populations unless cutting is done before fruits are able to mature. Once fruits have ripened they are protected by a hard, woody fruit wall that is not readily damaged by machinery. Mowing in mid-summer may actually stimulate extra flower and fruit production

through increased branching and the release of apical dominance in cut stems. Colorado butterfly plants may also benefit from decreased competition and enhanced moisture availability in mowed environments. Late summer and fall mowing may also facilitate seed dispersal, provided that fruits have already ripened (Fertig 1998).

The three largest private land populations of Colorado butterfly plant observed in 1998 were all found in areas that had been mowed in mid-summer or late fall (Fertig 1998). Furthermore, Munk (1999) observed that Colorado butterfly plant regeneration may be increased with removal of heavy grass cover. Munk (1999) also observed increased branching of floral stems when the terminal bud was removed and apical dominance released with grazing of Colorado butterfly plant by pronghorn antelope. Although bolted plants (those plants where the flowering stalk has emerged and is actively growing) are frequently grazed by cattle (Munk 1999), rosettes receive little defoliation by grazing cattle, most likely due to the fact that rosettes "hug" the ground and cattle are not able to reach them.

Construction of stock ponds and reservoirs, conversion of rangeland to crop cultivation, and the loss of habitat to residential and urban development are also important threats in agricultural areas. The cities of Cheyenne, Wyoming and Fort Collins, Colorado contain areas of formerly suitable Colorado butterfly plant habitat that have been lost to urbanization. The protection or continued agricultural management of suitable private land habitat may also be critical to the long-term survival of the Colorado butterfly plant (Fertig 1998).

In non-agricultural settings, the greatest threat to the Colorado butterfly plant may be the changes in habitat suitability resulting from natural succession. Without periodic disturbance events, the semi-open habitats, preferred by this subspecies may become choked by tall and dense growth of willows, gramminoids, and exotic weeds (Fertig 1994). Natural disturbance events such as flooding, fire, and ungulate grazing, may have been sufficient in the past to create favorable conditions. In the absence of such events today, managed disturbance may be necessary to maintain and create areas of habitat (Fertig 1994, 1996, 1998)

Because of the small, isolated nature of populations and few numbers present in many of them, the subspecies is much more susceptible to random events such as fires, insect or disease outbreaks, or other unpredictable events that could easily eliminate local populations (USFWS 2004d). High recreational use by campers, motorists, and fishermen is a threat to populations on state park lands in Nebraska.

Alterations of stream hydrology could also threaten Colorado butterfly plant. The plant is supported by moist soil throughout the growing season, and by wet habitats that are dominated by grass/forb/sedge communities. During the past 150 years, and continuing today, water developments, diversions, stream channel alterations for flood control or other purposes (including oil and gas development and mining), and changes in hydrograph have altered hydrology, floodplain geomorphology, and vegetation composition and trends. While in some streams and reaches this may have provided improved conditions for the plant, in many cases, it has resulted in the loss of suitable habitat and likely fragmentation of the habitat or loss of the plant within watersheds (USFWS 2004d).

ENVIRONMENTAL BASELINE

Regulations implementing the Act (50 CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed State or Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation process.

The action area is defined at 50 CFR 402 as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action". For the purposes of this consultation, the Service defines the action area to include all lands in Wyoming that state or federal highways or their right-of-ways exist on and the range of the species that may be affected by these actions. That is the action area for each species varies depending on its range in Wyoming and the overlap of FHWA/WYDOT STIP (2010-2014) proposed actions. Table 3 is a compilation of 13 actions that resulted in adverse effects to Ute ladies'-tresses and/or the Colorado butterfly plant since listing within the action area.

TABLE 3. Previous Adverse Effect Consultations in the State of Wyoming for Ute ladies'-tresses (ULT) and the Colorado Butterfly Plant (CBP).

NAME	AGENCY	DATE OF BO	SPECIES
Pinedale Resources Management Plan 61411-2008-F-0364	BLM	November 25, 2008	ULT
Merit Energy – North Buck Draw CBM 61411-2007-F-0188	BLM	March 23, 2007	ULT
Powder River Basin Oil & Gas 61411-2007-F-0075	BLM	March 23, 2007	ULT
FHWA/WYDOT STIP Projects (2005-2009) ES-6-WY-05-F012	FHWA/WYDOT	November 7, 2005	ULT, CBP
Newcastle FO, RMP ES-6-WY-04-F025, WY8796	BLM	October 2004	ULT
Powder River BO ES-6-WY-02-F006, WY6633	BLM-Buffalo FO	December 2002	ULT
FE Warren AFB Burning Project ES-6-WY-01-F010, WY4648	DOD/Air Force	July 2001	CBP
Medicine Bow Lateral Loop ES-6-WY-01-F003, WY4352	FERC	May 25, 2001	CBP
DM&E, Railroad Powder River Expansion. ES-6-WY-01-F008, WY4669	Surface Transportation	October 26, 2001	ULL
Wyodak CB Methane Drainage Project ES-6-WY-01-F002, WY4287	BLM	March 2001	ULT
Wyodak CB Methane Project ES-6-WY-00-F017, WY3667	BLM	November 2000	ULT
Landfill Remedial Actions at FE Warren AFB ES-6-WY-00-F006, WY3093	DOD/Air Force	March 2000	CBP
4D for PMJM ES-6-WY-01-F001, WY3287	USFWS	November 2000	ULT, CBP

Status of the Ute ladies'-tresses in the Action Area.

Because this action may affect Ute ladies'-tresses throughout its range in Wyoming, the environmental baseline (both the status of the species within the action area and the factors affecting the species environment within the action area) is much the same as the information presented above in the status of the species section.

Ute ladies'-tresses is currently known from nine sites in eastern Wyoming. Prior to 2005, Ute ladies'-tresses was known from four locations in Converse, Goshen, Laramie and Niobrara counties: a tributary to Antelope Creek (a tributary to the Cheyenne River) in northwest Converse County; a population along Bear Creek in southwestern Goshen County; a population along the Niobrara River near McMaster's Reservoir in southeastern Niobrara County; a population along Sprager Creek in Laramie County, and a recently discovered population along Horse Creek in Laramie County. These populations are monitored on a limited basis and appear to be stable (USFWS 2002). Following surveys in 2005-06, five additional populations have been recorded (Heidel 2007) within the larger watersheds of previously identified populations (Antelope and Horse Creek watersheds, and a portion of the Niobrara River watershed). Ute ladies'-tresses is known to occur in adjacent states within watersheds that encompass portions of Albany, Laramie, Park, Sweetwater, and Teton counties suggesting that the species may occur elsewhere in the State.

Factors Affecting the Ute Ladies'-tresses Within the Action Area

Changes in Hydrology. The past and present impacts to Ute ladies'-tresses in the action area may have included increases or decreases in habitat suitability due to irrigation developments and other human-caused changes to stream hydrology. Human-caused changes to stream hydrology have taken the form of channelization of streams, construction and use of irrigation canals, water impoundment (pond) construction, increased water discharges to surface waters, and water depletions from surface waters. These activities are widespread across the Wyoming range of Ute ladies'-tresses and many historical projects exist that have changed stream hydrology.

Invasive Plants. Invasive plant species do occupy much of the Wyoming range of Ute ladies'-tresses and herbicide use to control these invasive species has been undertaken by private citizens or performed by County Weed and Pest Districts. It has not been observed at present that any invasive plants may be adversely impacting any Ute ladies'-tresses plants within the action area, however it is likely that invasive plants could impede the ability of Ute ladies'-tresses to spread and reproduce.

Forage Production. Livestock grazing, haying, or mowing occur within the Wyoming range of Ute ladies'-tresses. Grazing activities on BLM-administered lands are authorized by the BLM through a permitting process. Grazing, haying and mowing activities are normally undertaken by private land owners as part of their agricultural operations. These activities may be beneficial to Ute ladies'-tresses plants through the maintenance of habitat or they may be detrimental in that these activities if not timed properly may reduce the reproductive success of individual Ute ladies'-tresses plants.

Herbivory. Another impact to Ute ladies'-tresses plants in the action area may be herbivory by wildlife. Herbivory of the flowering spikes of *S. diluvialis* by voles (Arft 1994), deer (Fertig

2000a), and moose (Moseley 1998) is frequent at some locations. Wells (1967) documented significant flowering stalk herbivory of the autumn ladies'-tresses orchid by rabbits. Arft (1994) speculated that vole herbivory could be the greatest single threat to the long-term survival of Ute ladies'-tresses at one study site. It is plausible that similar damage to Ute ladies'-tresses plants in the action area could be attributed to wildlife as well.

Status of the Colorado Butterfly Plant in the Action Are.

This action affects the Colorado butterfly plant throughout nearly all of its range (except for one population occurring in Colorado). Therefore, the environmental baseline (both the status of the species within the action area and the factors affecting the species environment within the action area) is much the same as the information presented above in the status of the species section. Within the action area , Colorado butterfly plant has recently been known from 18 sites in Wyoming (Laramie County). Several of those populations have not been surveyed for several years, were quite small when last surveyed and may, therefore, be extirpated. Extensive surveys were conducted during 1998 to document the status of previously known populations at 14 sites in Wyoming and Colorado (Fertig 1998a, 1998b). These sites were all within the area considered part of this project area. All 14 sites still supported populations of Colorado butterfly plant. Repeated survey information led Fertig (1998a, 1998b) to conclude that 10 of these populations were either relatively stable or increasing over the long-term.

Two populations of Colorado butterfly plant occur on F.E. Warren Air Force Base (WAFB) near Cheyenne, Wyoming. One of the populations is large and both populations appear to be stable or are increasing. The Service has approved an Integrated Natural Resources Management Plan (INRMP) for WAFB. Additionally, the Air Force Base has implemented a 5-year "Conservation and Management Plan for the Colorado Butterfly Plan and Preble's Meadow Jumping Mouse" on F.E. Warren Air Force base as well as entered into a cooperative agreement with the Service to monitor the populations, minimize adverse effects from Air Force operations, and conduct research as appropriate.

Factors Affecting the Colorado Butterfly Plant in the Action Area

Unless otherwise noted, the following information has been taken from U.S. Fish and Wildlife Service (2000b).

Haying and mowing at certain times of the year, overgrazing, water development and flood control, urban development, indiscriminately used herbicides, and habitat degradation resulting from plant succession and noxious weed competition have adversely affected the Colorado butterfly plant and its habitat. Although many populations of Colorado butterfly plant co-occur with haying and grazing, some of the populations are adversely affected by those activities. Heavy grazing and grazing during the summer flowering period adversely affect the plant. Likewise, mowing prior to hardening of the fruit wall causes adverse effects.

Changes in Hydrology. Several flood control projects are affecting suitable habitat. Diamond, Crow, and Dry creeks in and upstream of Cheyenne are currently part of a plan to channelize and harden the streams and construct holding ponds for flood control purposes. Similar projects have occurred near Fort Collins, Colorado. Additionally, the management of water resources for domestic and commercial uses, coupled with encroaching agricultural land use, has had a tendency to channelize and isolate water resources and fragment, realign, and reduce riparian and moist lowland habitat that could otherwise serve as potential Colorado butterfly plant habitat (Compton and Hugie 1993). This has been particularly evident in areas of eastern Laramie County, Wyoming, where reaches of some streams have been completely eliminated.

Development and Habitat Alteration. Residential and urban development around the city of Cheyenne has converted areas of suitable habitat. Populations of the plant west of Cheyenne may be particularly threatened by recently approved housing developments.

Lack of Natural Disturbance. In nonagricultural, undeveloped areas, a significant problem for Colorado butterfly plant populations is habitat degradation resulting from succession of the plant community. Without periodic disturbance events, the semi-open habitats preferred by this subspecies become choked by tall and dense growth of willows, grasses, and exotic weeds (Fertig 1994). Natural disturbances, such as flooding, fire, and native ungulate grazing, were sufficient in the past to create favorable habitat conditions for the plant. However, the natural flooding regime within the floodplain habitat has been altered by construction of flood control structures and by irrigation and channelization practices. In the absence of natural disturbance, managed disturbance may be necessary to maintain and create areas of suitable habitat (Fertig 1994, 1996). However, many Federal programs, such as those administered by the USDA Natural Resources Conservation Service and the Service, focus on enhancing or protecting riparian areas by restricting disturbance and increasing vegetative cover, resulting in less suitable later successional habitat. Additionally, noxious weed infestations, such as currently occurring at F.E. Warren Air Force Base, also threaten to choke out populations of Colorado butterfly plant. However, the indiscriminate use of broadleaf herbicides can severely harm Colorado butterfly plant, as was evidenced on F.E. Warren Air Force Base in 1983 when nearly half of the population was destroyed by herbicide use. Control of competing noxious weeds in areas of Colorado butterfly plant is therefore problematic.

Other activities contributing to the environmental baseline – Colorado Butterfly plant and Ute ladies'-tresses.

The continued operation, use, and maintenance of highways were not considered as elements of the proposed action within the PBA. However, the Service is obligated, under 50 CFR 402.14, to evaluate the effects of the action, including the direct, indirect and cumulative effects, and inter-related and inter-dependent actions, on listed species or designated critical habitat. For this reason as part of the PBO, the Service considers below the effects of continued operation, use and maintenance of existing highways on the threatened Colorado Butterfly plant and Ute ladies'-tresses. Acquisition and storage of materials such as aggregate, the use of de-icing compounds, and the use of herbicides, are considered below.

Of those activities comprising the proposed action, maintenance activities associated with acquisition or storage of material sources are most likely to occur outside of existing right-of-ways. That is, on-going maintenance activities associated with the use and storage of materials,

such as aggregate, are those type of activities most likely to contribute to baseline effects to Colorado Butterfly plant and Ute ladies'-tresses. Typically, material sources provide rock or gravel for use in asphalt or concrete highway surfaces, but may also be a source of material for use in the roadbase or as slope fill. Material sources, as distinguished from borrow sources, are typically independent of highways and may be used for multiple projects. The raw material mined from material sources is typically processed at the mine site and then either hauled to a project area for stockpiling or stockpiled at the source site. The haul road to the site is included as part of the material source. As both the Colorado Butterfly plant and Ute ladies'-tresses are wetland-associated species it is unlikely that suitable habitats could serve as an appropriate site for the storage of maintenance materials (e.g., sand, aggregate), though this does not preclude possible effects related to associated sedimentation or compaction in riparian areas. However, it is assumed that existing borrow sources are included under discussion of highway construction unless they are considered material source sites. Material source sites will not be constructed within any riparian zones (*Assumptions*, PBO, p. 7).

The use of herbicides in proximity to structures (e.g., bridges) and along roadsides in occupied habitat could conceivably affect either listed plant species. Herbicide drift or improper (non-label) use of herbicides in riparian areas may, to an unknown extent, impact Colorado butterfly plant or Ute ladies'-tresses orchid. Similarly, the use of de-icing compounds, more likely to occur in urban areas, within occupied habitat may alter soil chemistry affecting the suitability of habitats for Colorado butterfly plant or Ute ladies'-tresses orchid.

EFFECTS OF THE ACTION

With respect to listed plants, effects from highway construction include those associated with development of infrastructure (e.g., highway, trailhead) that cause land use changes or habitat loss, disturbance, impairment of movement or dispersal, and mortality. Effects may be direct effects, resulting from the action itself, or indirect effects, which are those caused by the proposed action and occurring later in time after the proposed action is completed. Direct impacts of the proposed action may include (1) impacts to individuals as a result of direct loss or impacts to habitat, and (2) disruption of habitat connectivity. Indirect effects associated with the proposed action may include: (1) the loss of reproductive potential for individuals removed or lost from the population, and (2) impairment of growth and loss of reproductive potential resulting from diminished habitat quality (e.g., resulting from hydrological change). Effects may also be cumulative, which under the Act includes the overall effect of the project combined with effects from future non-federal activities that are reasonably certain to occur in the foreseeable future. Effects may also be temporary (e.g., life of the construction) or permanent (e.g., permanent losses to habitat or a permanent disturbance from a new or larger highway).

Direct Effects - Ute Ladies'-tresses Orchid.
Potential effects from resulting from implementation of the FHWA/WYDOT STIP (2010-2014) may include the loss of habitat or direct damage to individual and flowering parts of Ute Ladies'-tresses plants. Damage to Ute ladies'-tresses flowering spikes may occur as equipment and personnel move along road or within construction areas in proximity to Ute ladies'-tresses habitat. Disturbance associated with construction activities that affect stream, wetland or riparian habitats could affect plant viability, the ability of the plant to reproduce, or could impair seed dispersal.

Based on the current known distribution of Ute ladies'-tresses orchid in Wyoming, WYDOT projects throughout the state will not affect the species at ***known*** species locations. U.S. Highway 20 runs parallel to the Niobrara River in southeastern Niobrara County. This is the closest location of a WYDOT system highway to a known Ute ladies'-tresses population. However, because of the uncertainty of the species range, highway projects throughout Wyoming may adversely affect Ute ladies'-tresses orchid by impacting previously unknown populations. Potential impacts may include mortality of individual plants, loss of suitable habitat, fragmenting populations, and sedimentation or runoff. In order to address the potential unknown locations of this plant and to minimize potential affects the following conservation measures will be implemented: (1) All projects which impact wetlands will be evaluated for suitability for Ute ladies'-tresses orchid - i.e., below 6,800 feet elevation; non-saline soils; open palustrine wetlands with no overstory; perennial water source, (2) Wetlands with characteristics suitable for Ute ladies'-tresses that may be disturbed will be surveyed prior to disturbance according to USFWS guidelines to determine presence/absence of the species, and (3) Wetlands that may be disturbed that have Ute ladies'-tresses present will be reclaimed in a manner which preserves topsoil from the affected areas and utilizes it for reclamation thus preserving the seed bank, propagules, and other biological material.

Mortality and Impaired Reproduction

Bridge and highway construction may cause direct mortality of individuals if construction or excavation occurs in an area of occupied habitat. Ute ladies'-tresses is a perennial that reproduces by seed and may reproduce asexually though tuberous root segments. Each individual plant has the capability of producing thousands of seeds per fruit. It is unknown how long seeds persist in the environment, but it is believed that seedlings may lie dormant for up to 8 years as subterranean saprophytes living on mycorrhizal fungi or persist above ground for a few years as small leaf rosettes (Fertig 2000a). Individual plants may not flower under adverse environmental conditions and may not flower even in consecutive years. To the extent that construction encroaches on occupied areas, all life stages of the plant may be affected (seeds, saprophytes, rosettes, flowering adults). Due to the clumped nature of Ute ladies'-tresses distribution, construction could affect a large percentage of an individual population. But due to the distribution of suitable habitat (floodplains bordering perennial streams below 6,800 feet), it is unlikely that highway projects will substantially impact Ute ladies'-tresses. Standard construction practices that minimize impacts to riparian and wetland habitats should minimize the direct mortality (loss) of Ute ladies'-tresses plants.

Seed dispersal of Ute ladies'-tresses is poorly understood, but seeds are likely dispersed by flowing water or wind. The species grows in clumped patterns suggesting that seed dispersal distances are relatively short, but the scattered distribution of populations suggests seed dispersal may occur over great distances. It is unlikely that highway construction projects would fragment populations of the Ute ladies'-tresses orchid to a degree greater than their current distribution. Highway reconstruction projects and bridges themselves may create unsuitable areas for Ute ladies'-tresses to grow (e.g., due to stream channelization or shading), however, it is unlikely that they would affect mechanisms of seed dispersal. In cases where the existing clearing zones will be extended, the potential exists for a highway project to hinder natural movement of Ute ladies'-tresses along a floodplain zone by increasing the size of an area which is unsuitable for plant growth.

In most cases, existing habitat inside highway right-of-ways is generally less suitable than areas outside of the right-of-way due to previous impacts and right-of-way maintenance activities. Additionally, in most cases new bridges or culverts are designed to accommodate 100 year flood events, a potential mechanism of seed dispersal. Other than temporary disturbance, standard construction measures to minimize disturbance and impacts to riparian and wetland areas should result in minimal change of existing conditions.

Habitat Loss

Highway projects may affect riparian areas or wetlands through temporary losses of habitats associated with construction or construction detours. Permanent habitat losses may be incurred in the event that structures or roads are enlarged (e.g., toes of slopes encroaching on wetlands). In bridge replacement projects, temporary detours are often established to allow continued traffic flow around the construction site. Bridge construction itself may also require temporary habitat disturbances from construction equipment in a riparian zone. In cases where reconstruction creates a wider or larger highway or bridge, permanent habitat loss can result from the wider facility requiring more space in the riparian zone. For each individual project, acreage of habitat losses can be calculated during the design phases and efforts made to minimize habitat losses by reducing clear zone slopes, installing guardrail, or locating detours outside suitable habitat if possible. Material source operations can result in the loss of habitat if they are located in Ute ladies'-tresses' habitat. These operations may require the clearing of brush and vegetation, stripping and stockpiling of topsoil or overburden and extracting material (typically gravel) from variable depths. Material sources located in Ute ladies'-tresses habitat, or storage of stockpiled materials in suitable habitat, may affect Ute ladies'-tresses habitat. Stockpiling topsoil from riparian areas for use in reclamation conserves vegetative resources such as native seed stock and propagules. Projects such as new construction or reconstruction with added capacity or some environmental only projects which require more than minimal amounts of additional right-of-way areas and mineral source sites *are likely to adversely affect* Ute ladies'-tresses orchid through habitat loss and mortality if occupied suitable habitat is converted to highway , a mineral source site, or a mineral materials storage area.

Indirect Effects - Ute ladies'-tresses

Runoff from the highway and construction areas may affect Ute ladies'-tresses if it alters the suitability of the wetland conditions for the plant. Highway reconstruction projects with and without added capacity may increase the area impervious to water over existing conditions (i.e., a wider highway with shoulders). The amount of runoff from the highway reaching the riparian area and associated wetlands is subject to topographic features but it can be expected to increase as a result of highway projects. The overall net result would be increased flows in an affected stream, although it is expected that this would be periodic and difficult to quantify. These effects may be negligible over the long term and likely do not significantly affect the amount of Ute ladies'-tresses habitat.

Storm runoff from highways generally contains sediments, hydrocarbons (oil, grease, fuel), litter, deicing salts and minerals, and heavy metals. In cases where the highway crosses or parallels segments of occupied habitat, it is possible that some petroleum products from vehicular and construction traffic on the highway could enter the riparian area via runoff. In the event of a construction accident occurring in or near occupied habitat, fuel/oil contamination may occur. Project construction is not expected to directly affect the level of contaminants in riparian corridors provided standard construction best management practices are used which limit the

location of staging and refueling areas and eliminate in-stream construction.

Program Specific Effects - Ute ladies'-tresses

Based on the STIP for the next five year period, and due to the uncertain distribution of the species in Wyoming, five WYDOT projects and up to ten mineral source operation sites may adversely affect Ute ladies'-tresses orchid (Appendix A: Reiterated in Table 4). Because it is believed that Ute ladies'-tresses could occur anywhere in the state below 6,800 feet elevation, this determination is based on projects throughout the state that cross riparian areas of perennial streams and potentially affect riparian wetlands. As described below in Table 4, this level of potential effect and habitat loss are conservative. Estimates of habitat affected are inflated where projects have existing paved roads or disturbed rights-of-ways that are already impacted. For mineral source operations, activities will not occur directly within wetlands or riparian habitats, but may occur in Ute ladies'-tresses associated upland habitat. It has been assumed that 10 mineral source sites, encompassing 10 acres each (100 acres total), may be implemented over the of the 2010-2014 WYDOT/FHWA STIP. An estimated 8.0 acres of riparian habitat associated with 74 road-crossings of perennial streams may be affected with implementation of the proposed action.

TABLE 4. Potentially affected Ute ladies'-tresses and habitat

WYDOT DISTRICT	PROJECT	ROW SIZE	RIPARIAN CROSSINGS	ACREAGE AFFECTED
DISTRICT 1	I804243 – RKSP-RAWL/ RAWLINS W/EBL	300 FT	2	0.3
	0804228 - RKSP-RAWL/RAWL W/WBL	300 FT	2	0.3
	N252035 - CHEY-TORR/ TORR INT-LA/GO CO LN	150 FT	2	0.1
	CN06062 - CB CO/MEDB RVR BR/SVRY CR BR	150 FT	2	0.3
	N211056 - RAWL-MUDG/BEL SPRG	150 FT	1	0.1
	1102005 - I80-BURNS/UPRR OVRPSS SECT	150 FT	1	0.1
DISTRICT 2	N212084 - CASP/W BELT LOOP/SEC 1	150 FT	1	0.3
	P241042 - SHRM-MEDB/WYO 487	150 FT	1	0.1
	0C07080 - GO CO/HORS #EYS	150 FT	1	0.1
	P471001 - CASP ST/US-20&26 SPUR MP 0-2.9	150 FT	1	0.1
	I253109 - DOUG-GLNK/DOUG/W NBL SEC	300 FT	2	0.3
	P202065 - MUDG-LAND/US 287/789	150 FT	2	0.1
	0252140 - DWYR-GLEN/EL RANCHO/NBL	300 FT	1	0.2

	N211059 - MUDG-CASP/MUDG N	150 FT	3	0.2
	4127008 - CASP/PLATTE R #DVD #FEA	150 FT	1	0.3
DISTRICT 3	0C04086 - SW CO/GRRV #FJE	150 FT	1	0.3
	0C19034 - UI CO/BLACKS FK R #ERI	150 FT	1	0.2
	0C22034 - TE CO/CATTLEMANS BRDG	150 FT	1	0.2
	N131051 - RKSP-PINE/US 191/EDEN SECT	200 FT	1	0.1
	1904006 - RKSP/ARPT RD	150 FT	1	0.1
	P161023 - MTNV-URIE/WYO 414	150 FT	2	0.2
	P171021 - FLMG-UTAH/I-80 SO	150 FT	2	0.1
	0C12044 - LN CO/DIAM/CONROY #EQR	150 FT	1	0.2
	N103101 - SMOOT-AFTON/AFTON SO/PATHWAY	150 FT	1	0.1
	N103103 - THAY-ALPN/ETNA NORTH	200 FT	1	0.1
	2101011 - ROBT RD/WYO 410	150 FT	2	0.1
	2104001 - MILB ROAD/WYO 411	150 FT	2	0.3
DISTRICT 4	4405003 - SHER/LEWIS ST/BIG GOOSE CR	150 FT	1	0.1
	0255098 - KAYC-BUFF/MDL FK INT SEC	300 FT	1	0.1
	0600016 - SUND-UPTON/CO LN SO	150 FT	7	0.5
	0604013 - HULT-MONT/HULT NO	150 FT	1	0.1
	P433035 - GILL-MONT/WESTON SEC	150 FT	2	0.1
	0302068 - UCRS-GILL/CL CO LN E	150 FT	4	0.3
	N442061 - NEWC-SDAK/NEWC E	150 FT	2	0.1
	0600020 - SUND-UPTON/CO LN NO	150 FT	2	0.1
	0902113 - BUFF-GILL/DEAD HORSE SEC	300 FT	2	0.4
DISTRICT 5	N203045 - RIVE-SHOS/BRYANT	200 FT	2	0.2

	N203056 - RIVE-SHOSI/BRYANT SEC #2/5 LNS	200 FT	1	0.1
	N291059 - CODY-POWL/CODY NE/PHS 2	200 FT	1	0.1
	CN10093 - FR CO/CR #334/17 M RD/WEST SEC	150 FT	2	0.2
	0703011 - ETHT/ETHT SO	150 FT	1	0.1
	N202052 - MUDG-LAND/BEAVER CR SEC #1	150 FT	1	0.1
	N361056 - WORL-TENS/TENS W	150 FT	1	0.1
	N203052 - HUDS-RIVE/RIVE SOUTH SECT	150 FT	3	0.3
	N291061 - CODY-POWL/CODY E PHASE #2/SPLIT	200 FT	1	0.1
TOTALS			74	8.0

Direct Effects - Colorado Butterfly Plant.
Potential effects from resulting from implementation of the FHWA/WYDOT STIP (2010-2014) may include the loss of habitat or direct damage to individual and flowering parts of Colorado butterfly plant. Damage to the Colorado butterfly plant may occur as equipment and personnel move along road or within construction areas in proximity to occupied habitat. Disturbance associated with construction activities that affect stream, wetland or riparian habitats could affect plant viability, the ability of the plant to reproduce, or could impair seed dispersal.

As with other plants, habitat loss and mortality of Colorado butterfly plants are closely associated because of the limited mobility/dispersal ability of plants. Suitable habitat may be present in an area but simply unoccupied because of the lack of nearby source populations. In order to minimize potential effects to this listed species the following conservation measures will be implemented with the proposed action: (1) All projects within Platte and Laramie counties which may impact wetlands (jurisdictional and non-jurisdictional) will be evaluated for suitability for Colorado butterfly plant - i.e., stream floodplains; open palustrine wetlands with no overstory, (2) Riparian zones with characteristics suitable for Colorado butterfly plant will be surveyed prior to disturbance according to USFWS guidelines to determine presence/absence of the species, and (3) All wetlands, and particularly those with Colorado butterfly plant present, that are disturbed will be reclaimed in a manner which preserves topsoil from the affected areas and utilizes it for reclamation, thus preserving the seed bank, propagules, and other hiological material.

Mortality and Impaired Reproduction
Bridge and highway construction may potentially cause direct mortality of Colorado butterfly plants if they occur in an area of construction or excavation. To the extent that construction encroaches on occupied areas, all life stages - seeds, rosettes, flowering adults - of the plant may be affected. Due to the clumped nature of butterfly plant colonies, construction could affect a large percentage of a population. Standard construction best management practices to minimize

impacts to riparian and wetland habitats should minimize direct mortality (loss) of Colorado butterfly plants. The limited distribution of these plants, and distinct association with perennial stream floodplains, further suggests that direct mortality due to intrusion of machinery into occupied habitat is improbable.

It is unlikely that highway construction projects would further fragment populations of Colorado butterfly plant. New highway construction projects are rare and unlikely to impact Colorado butterfly plant due to the limited distribution of the species. Highway reconstruction projects and bridges themselves may create unsuitable areas for butterfly plants (e.g., due to shading). In cases where the existing clear zone will be extended, construction activities may limit local distribution of butterfly plant within a riparian zone by diminishing habitat suitability.

In most cases, existing habitat inside highway right-of-ways is likely less than suitable for Colorado butterfly plant due to previous construction-associated impacts and maintenance activities. Additionally, in most cases new bridge or culverts are designed to accommodate 100 year flood events (potential seed dispersal mechanism) and will span similar distances to the existing situations. Standard construction measures to minimize disturbance and impacts to riparian and wetland areas would minimize the change from existing conditions.

Habitat Loss

Highway projects may affect riparian areas or wetlands through temporary losses of habitats associated with construction or construction detours. Permanent habitat losses may be incurred in the event that structures or roads are enlarged (e.g., toes of slopes encroaching on wetlands). In bridge replacement projects, temporary detours are often established to allow continued traffic flow around the construction site. Bridge construction may also require temporary habitat disturbances from construction equipment in a riparian zone. In cases where reconstruction creates a wider or highway or larger bridge, permanent habitat loss can result from the facility requiring more space in the riparian zone. Habitat loss may be minimized by reducing clear zone slopes, installing guardrails, or locating detours outside suitable habitat if possible. Material source operations may result in the loss of habitat if they are located in Colorado butterfly plant habitat. These operations require clearing of brush and vegetation, stripping and stockpiling of topsoil and overburden, and extraction of material (typically gravel) from variable depths. Up to four new material sources could be located in Colorado butterfly plant habitat over the next five years, affecting up to forty acres of Colorado butterfly plant habitat over that same period. Stockpiling topsoil from riparian areas for use in reclamation conserves vegetative resources such as native seed stock and propagules. Projects such as new construction or reconstruction with added capacity or some environmental only projects which require more than minimal amounts of additional right-of-way areas and mineral source sites *are likely to adversely affect* Colorado butterfly plant through habitat loss and mortality if occupied suitable habitat is converted to highway, a mineral source site, or a mineral materials storage area.

Indirect Effects – Colorado Butterfly Plant

Runoff from the highway and construction areas may affect Colorado butterfly plant if it affects the suitability of the riparian conditions for the plant. Highway reconstruction projects with and without added capacity usually increase the area impervious to water over current conditions (i.e., a wider highway with shoulders). The amount of runoff from the highway reaching the riparian area is subject to topographic features but it can be expected to increase as a result of highway projects. The overall net result would be increased flows in an affected stream,

although it is expected that this would be periodic, nearly immeasurable, negligible over the long term, and have virtually no effect on the amount of Colorado butterfly plant habitat.

In cases where the highway crosses or parallels segments of occupied habitat, it is possible that some petroleum products from vehicular and construction traffic could enter the riparian area via runoff. Storm runoff from highways generally contains sediment, oil, grease, fuel, litter, deicing salts/minerals, and heavy metals. In the event of a construction accident occurring in or near occupied habitat, fuel/oil contamination may occur. Project construction is not expected to directly affect the level of contaminants in the riparian corridor provided standard measures are employed which limit the location of staging and refueling equipment and elimination of in-stream construction.

Program Specific Effects – Colorado butterfly plant

Based on the STIP for the next five year period there are two WYDOT projects that may adversely affect Colorado butterfly plant (Appendix A: Reiterated in Table 5). This determination is based on the project occurring within the known range of the butterfly plant and/or potentially affecting a riparian area, i.e., where a road project crosses a perennial stream. Depending on the presence of butterfly plant habitat in the project area these projects may have direct and indirect adverse effects to Colorado butterfly plant. Potential effects and habitat loss are likely inflated (Table 5) as these areas encompass existing paved roads with disturbed rights-of-ways and may provide marginally suitable habitat for the Colorado butterfly plant. As the habitat for the Colorado butterfly plant occurs within the range of habitat for Ute ladies' –tresses orchid, mineral source operations have been accounted for within the analysis of the Ute ladies' –tresses orchid. It is assumed that no activities will occur within wetlands or riparian habitats, but may occur in adjacent upland habitats of the Colorado butterfly plant. Given these considerations, this represents a conservative analysis of the greatest potential effect to Colorado butterfly plant and its habitat. Projects that require more than minimal amounts of additional right-of-way areas *are likely to adversely affect* Colorado butterfly plant through habitat loss and mortality if occupied suitable habitat is converted to road right-of-way.

TABLE 5. Potentially adversely affected Colorado butterfly plant and habitat

WYDOT DISTRICT	PROJECT	ROW SIZE	RIPARIAN CROSSINGS	ACREAGE AFFECTED
DISTRICT 1	N252035 - CHEY-TORR/ TORR INT-LA/GO CO LN	150 FT	2	0.1
	1102005 - I80-BURNS/UPRR OVRPSS SECT	150 FT	1	0.1
TOTALS			3	0.2

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Cumulative effects comprise the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions. Past, present and foreseeable future actions might include: increased authorized or unauthorized recreational landuse in roaded and non-roaded areas, and rural development, including commercial development, and construction of related infrastructure such as powerlines and roads, and increased landuse associated with development.

Cumulative Effects - Ute ladies'-tresses

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future federal actions that are unrelated to the Proposed Action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Other private, state, or local community developments, or land management activities, may cumulatively affect Ute ladies'-tresses orchid. Habitat loss and small population size were cited as the two primary threats to Ute ladies'-tresses (USFWS 1992). Ute ladies'-tresses orchid was once believed confined to a few populations in Colorado and Utah with a historical population from central Nevada. Because of the limited nature of populations, encroachment on occupied habitat from urbanization was a direct threat and believed to have caused the extirpation of several populations along the Colorado Front Range and the Utah Wasatch Front.

In order to assess the potential cumulative effect of urban encroachment, census data was used to evaluate population growth within the action area and within the four counties encompassing the currently known range of Ute ladies' tresses within the State. In the period between 2000 – 2009, the population of Wyoming grew an estimated 10.2%, that is, the State's population added an estimated 50,488 individuals to the State's population. Over the same period, the population of Converse County grew an estimated 12.7%; the population of Goshen County declined by an estimated 1.7%; Laramie County grew by 8.9%; and, Niobrara County also declined by an estimated 1.7% (U.S. Census 2010). While it is difficult to distinguish between rural and urban growth based on gross estimates of population growth, it is plausible that continued rural development may cumulatively affect Ute ladies' tresses and Colorado butterfly plant.

In Wyoming, land management practices such as grazing, pesticide/herbicide applications, and agricultural landuse may affect occupied Ute ladies' tresses habitat. At present, though Wyoming has experienced moderate population growth, little rural development is occurring within areas occupied by Ute ladies'-tresses in Wyoming. In contrast to other species, over-grazing of riparian areas may increase the suitability of areas for Ute ladies' tresses by reducing the density of competing vegetation. Conversely, over-grazing may destabilize streams, result in sedimentation, compaction in transitional areas, and thereby reduce the area of suitable sub-irrigated floodplain habitat. Late season grazing may also reduce seed production within a population by eliminating flowers and fruits. Management of either native or cultivated pasture may limit the size of suitable riparian areas depending upon site-specific management practices.

For example, application of herbicides to control weed species may directly affect Ute ladies'-tresses; application of pesticides to control grasshoppers or other insects may indirectly impact native insects (e.g., bumble bees) that serve as pollinators for Ute ladies'-tresses. In most cases, however, potential cumulative effects are considered comparatively minor sources of impact in Wyoming (Fertig 2000a).

Because known populations of these species occur within southeast Wyoming, little consideration has been given to the potential cumulative effect associated with energy extraction. As recently as the spring of 2010, however, as many as 25 permits were approved by the State of Wyoming for oil wells within Laramie and Goshen counties (Wyoming Energy News 2010). Recent development of techniques to extract oil products from the Niobrara shale formation suggests that energy development on both public and private lands in southeast Wyoming may contribute to cumulative impact to Ute ladies'-tresses.

Cumulative Effects - Colorado Butterfly Plant

As the habitat occupied by the Colorado butterfly plant is immediately similar to that of the Ute ladies' –tresses orchid, potential cumulative effects will be comparable. Urban development was previously recognized as one of the primary threats to the species (USFWS 2000b). The distribution of the Colorado butterfly plant once extended south along the front range to Douglas County, Colorado. Populations in these areas which have been subjected to substantial urban growth are now believed to be extirpated (Fertig 2000b). In order to assess the foreseeable potential effect of urban encroachment, census data was used to evaluate population growth within the two counties (Laramie and Platte counties) encompassing the currently known range of Ute ladies' tresses within the State. In the period between 2000 – 2009, the population of Wyoming grew an estimated 10.2%, that is, the State's population increased by an estimated 50,488 individuals. Over the same period, the population of Laramie County grew by 8.9%; the Platte County population declined by an estimated 6.9% (U.S. Census 2010). While it is difficult to distinguish between rural and urban growth based on gross estimates of population growth, it is plausible, at least within Laramie County, particularly in the vicinity of Cheyenne, that rural development may in the future affect the Colorado butterfly plant.

In Wyoming, land management practices such as grazing, pesticide/herbicide applications, and agricultural landuse may affect occupied Colorado butterfly plant. In contrast to other species, grazing of riparian areas may increase habitat suitability by reducing the density of competing vegetation. Conversely, over-grazing may destabilize streams, result in sedimentation, compaction in transitional areas, and thereby reduce the area of suitable sub-irrigated floodplain habitat. Late season grazing may also reduce seed production within a population by eliminating flowers and fruits. Management of either native or cultivated pasture may limit the size of suitable riparian areas depending upon site-specific management practices. For example, application of herbicides to control weed species may directly affect Colorado butterfly plant; application of pesticides to control grasshoppers or other insects may indirectly impact native insects that serve as pollinators. In most cases, however, potential cumulative effects are considered comparatively minor sources of impact in Wyoming (Fertig 2000a).

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Recent development of techniques to extract oil products from the Niobrara shale formation suggests that energy development on both public and private lands in southeast Wyoming may contribute to cumulative impact to Colorado butterfly plant.

CONCLUSION

After reviewing the current status of the Colorado butterfly plant and the Ute ladies'-tresses orchid; the environmental baseline for the action area; the effects of the FHWA/WYDOT STIP (2014); and the cumulative effects, it is the Service's biological opinion that the direct and indirect effects of the implementation of the FHWA/WYDOT STIP (2014), as proposed, is not likely to jeopardize the continued existence of the Colorado butterfly plant or the Ute ladies'-tresses orchid. No critical habitat for the Colorado butterfly plant will be affected by the action. No critical habitat has been designated for the Ute ladies'-tresses; therefore, none will be affected.

The Service has reached this conclusion by considering the following.

Colorado Butterfly Plant

1. It appears that this species is more widespread and numerous than was previously known. When this taxon was originally designated as a candidate for listing, it was known from only three small populations. Surveys in 1984-86 and 1992-93 resulted in the discovery or relocation of 22 populations, many of which are reasonably large. In 1998, the rangewide number of flowering and Colorado butterfly plants was estimated at between 47,300 – 50,300 individuals (Fertig 1998). Also, studies have indicated that this species may be less threatened by certain agricultural practices (e.g., grazing) than originally suspected. In particular, populations may continue to thrive in winter-grazed or rotationally grazed pastures and can persist in hayed meadows, especially if haying is delayed until after the plants fruiting period (Marriott 1987; Fertig 1994, 1996).

2. The FHWA/WYDOT is committed to implementing protective measures to minimize potential impacts to Colorado butterfly plant.

3. While the project area is relatively large, Projects identified under the STIP for the next five years do not include any of the known Colorado butterfly plant concentrations.

Ute Ladies'-tresses

4. It appears that this species is more widespread and numerous than was previously known. At the time of listing, the total known Ute ladies'-tresses population numbered approximately 6,000 individuals. Extensive census efforts between 1991-1995 revealed that known population size was approximately 20,500 individuals. Since 1995, several new populations have been located adjacent to the action area, one of which contained several thousand individuals. Between 1992-1999, the total known population of the Ute ladies'-tresses orchid observed across its range reached over 60,000 individuals (USFWS 2004e). In 2005-2006, five additional populations were

located (Heidel 2007). It is expected that new populations will continue to be discovered with additional surveys of suitable habitat. As a response to the plant's more widespread distribution, the Service has undertaken a 5-year status review and has begun preparing a 12 month finding on a petition to delist the species (USFWS 2004d).

5. The FHWA/WYDOT is committed to implementing protective conservation measures to minimize potential impacts to Ute ladies'-tresses.

6. While the project area is relatively large, Projects identified under the STIP for the next five years do not include any of the known Colorado butterfly plant concentrations.

INCIDENTAL TAKE STATEMENT

Sections 7(b)(4) and 7(o)(2) of the Act generally do not apply to listed plant species. However, limited protection of listed plants from take is provided to the extent that the Act prohibits the removal and reduction to possession of federally listed plants.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of Act directs federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations (CR) are discretionary agency activities to minimize or avoid adverse effects of a Proposed Action on listed species or critical habitat, to help implement recovery plans, or to develop information. The recommendations provided here relate only to the Proposed Action and do not necessarily represent complete fulfillment of the agency's section 7(a)(1) responsibility for these species.

CR1. The Service recommends that the FHWA/WYDOT implement and enforce all conservation measures as outlined in the Programmatic Biological Assessment, dated November 19, 2009 and clarified within this Programmatic Biological Opinion.

CR2. In known occupied Ute ladies'-tresses and Colorado butterfly plant habitat, the Service recommends that the FHWA/WYDOT use management actions that are compatible with protection and conservation of pollinators of these species.

CR3. The Service recommends that the FHWA/WYDOT not authorize herbicide use in known or occupied Ute ladies'-tresses or Colorado butterfly plant habitat without prior review by Service biologists.

CR4. FHWA/WYDOT should adopt best management practices to insure non-native invasive species and noxious weeds do not become established within suitable habitat for Ute ladies'-tresses and Colorado butterfly plant habitat; and,

CR5 FHWA/WYDOT should continue to develop threatened and endangered species information and share it with all levels of personnel within WYDOT and the

FHWA. The Service recommends the goal of this information be aimed at providing education and public outreach regarding threatened and endangered species in Wyoming.

CR6 Where at all practicable, disturbed wetlands should be reclaimed in a manner which preserves topsoil from the affected areas and utilizes it for reclamation thus preserving the seed bank, propagules, and other biological material. In cases where it may not be ecologically appropriate to do so, as in the case where a site is dominated by non-native and invasive species, use appropriate topsoil from a similar or adjacent site.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the action outlined in your November 19, 2009, request for consultation on the effects of the Wyoming Statewide Transportation Improvement Program of highway projects (2010-2014). As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded (not applicable to critical habitat); (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

Thank you for your continued assistance in the conservation of endangered, threatened, and proposed species. If you have any questions or comments on this biological opinion, please contact our office at the letterhead address or phone Clark McCreedy at (307) 772-2374 ext. 228.

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Attachments:

Wyoming Ecological Services – Bald Eagle Recommendations

Bald Eagle (*Haliaeetus leucocephalus*)

Wyoming Distribution (Nesting) by County: Albany, Big Horn, Campbell, Carbon, Converse, Fremont, Goshen, Hot Springs, Johnson, Laramie, Lincoln, Natrona, Niobrara, Park, Platte, Sheridan, Sublette, Sweetwater, Teton, Uinta, Washakie, Weston

The U.S. Fish and Wildlife Service (Service) removed the bald eagle, except in portions of Arizona, from the list of threatened and endangered species under the Endangered Species Act (16 U.S.C 1531 et seq.). However, the protections provided to the bald eagle under the Migratory Bird Treaty Act, 16 U.S.C. 703 (MBTA), and the Bald and Golden Eagle Protection Act, 16 U.S.C. 668 (Eagle Act) remain in place. The term "disturb" under the Eagle Act is defined as: "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior" (72 FR 31332).

Adult eagles establish life-long pair bonds and build large nests in the tops of large trees near rivers, lakes, marshes, or other wetland areas. During winter, bald eagles gather along open water to forage and night roost in large mature trees, usually in secluded locations that offer protection from harsh weather. Bald eagles often return to use the same nest and winter roost year after year.

Habitat loss and human disturbance remain as potential threats to the bald eagle's continued recovery. Because bald eagles are particularly sensitive to human disturbance at their nests and communal roosts, protective buffers are needed around these areas.

The Service has developed National Bald Eagle Management Guidelines to advise land managers when and under what circumstances the protective provisions of the MBTA and Eagle Act may apply to their activities. Please note that in more open habitats typical to Wyoming, in addition to the general recommendation in the national guidelines, additional conservation recommendations may also be necessary (our Wyoming specific recommendation are described below).

For infrastructure (or facilities) that have increased potential to cause eagle mortality (e.g., wind turbines, guyed towers, airports, waste water disposal facilitates, transmission lines, etc.), we recommend locating the infrastructure outside of areas with high levels of eagle use (i.e., away from areas used for nesting, foraging, roosting or migrating) and outside of eagle travel corridors between such high-use areas. If the wildlife survey data available for the proposed project area and vicinity do not provide the detail needed to determine normal bird habitat use and movements, we recommend collecting that information prior to determining locations for infrastructure with increased potential for causing eagle mortalities. We also recommend contacting the Service's Wyoming Ecological Services office for project specific recommendations.

When the proposed infrastructure and facilities do not pose an increased risk of direct mortality, we recommend using the following general guidelines for work within Wyoming in order to avoid disturbing eagles and adequately protecting their habitat:

1. Conduct surveys within 0.5 mile of proposed activity for eagle nests and/or roosts during the appropriate time of year. Contact the Service's Ecological Services Wyoming Field Office if your project will occur within 0.5 mile of a known nest or roost to determine the potential impact of your activity to nesting and/or roosting bald eagles.

2. Avoid project-related disturbance and habitat alteration within 0.5-mile of bald eagle nests from the period of early courtship to post-fledging of chicks (January 1 through August 15).

3. Avoid disturbance within 0.5 mile of communal winter roosts from November 1 to April 1.

4. Avoid construction of above-ground structures within 0.5-mile of bald eagle nest sites and communal winter roost sites. Below ground structures (e.g., pipelines, buried power lines, fiber optic lines) may be sited closer as long as construction occurs outside of the active nesting or roosting season and will not result in the loss of alternate nest sites or roost trees.

A protective buffer for foraging areas (i.e., a linear length of river) will also be needed if the proposed activity may preclude use of foraging areas (e.g., extensive human activities on or near the water).

In Wyoming, the nesting season occurs from February 1 to August 15 and bald eagle nest buffers should receive full implementation during this time period. For some activities (construction, seismic exploration, blasting, and timber harvest), a larger buffer around the nest may be necessary.

Sensitivity to disturbance by roosting and nesting bald eagles may vary between individual eagles based on topography, density of vegetation, and intensity of activities. Modification of protective buffer recommendations may be considered where biologically supported and developed in coordination with the Service's Wyoming Ecological Services Field Office.

Please contact the Service's Wyoming Ecological Services Field Office if you have any questions regarding the status of the bald eagle, permit requirements, or if you require technical assistance regarding the MBTA, Eagle Act, or the above recommendations.

References

U.S. Fish and Wildlife Service. 2007. National Bald Eagle Management Guidelines. United States Department of Interior, Fish and Wildlife Service, Arlington, Virginia. 23 pp. [Online version available at http://www.fws.gov/migratorybirds/

Wyoming Ecological Services Field Office - Protections for Raptors

Raptors, or birds of prey, and the majority of other birds in the United States are protected by the Migratory Bird Treaty Act, 16 U.S.C. 703 (MBTA). A complete list of migratory bird species can be found in the Code of Federal Regulations at 50 CFR 10.13. Eagles are also protected by the Bald and Golden Eagle Protection Act, 16 U.S.C. 668 (Eagle Act).

The MBTA protects migratory birds, eggs and nests from possession, sale, purchase, barter, transport, import, export, and take. The regulatory definition of take, defined in 50 CFR 10.12, means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to hunt, shoot, wound, kill, trap, capture, or collect a migratory bird. Activities that result in the unpermitted take (e.g., result in death, possession, collection, or wounding) of migratory birds or their eggs are illegal and fully prosecutable under the MBTA. Removal or destruction of active nests (i.e., nests that contain eggs or young), or causing abandonment of an active nest, could constitute a violation of the MBTA, the Eagle Act, or both statutes. Removal of any active migratory bird nest or any structure that contains an active nest (e.g., tree) where such removal results in take is prohibited. Therefore, if nesting migratory birds are present on or near a project area, project timing is an important consideration during project planning. As discussed below, the Eagle Act provides additional protections for bald and golden eagles and their nests. For additional information concerning nests and protections under the MBTA, please see the U.S. Fish and Wildlife Service's (Service) Migratory Bird Permit Memorandum, MBMP-2.

The Service's Wyoming Ecological Services Field Office works to raise public awareness about the possible occurrence of birds in proposed project areas and the risk of violating the MBTA, while also providing guidance to minimize the likelihood that take will occur. We encourage you to coordinate with our office before conducting actions that could lead to the take of a migratory bird, their young, eggs, or active nests (e.g., construction or other activity in the vicinity of a nest that could result in a take). If nest manipulation is proposed for a project in Wyoming, the project proponent should also contact the Service's Migratory Bird Office in Denver at 303-236-8171 to see if a permit can be issued. Permits generally are not issued for an active nest of any migratory bird species, unless removal of the nest is necessary for human health and safety. If a permit cannot be issued, the project may need to be modified to ensure take of migratory birds, their young or eggs will not occur.

For infrastructure (or facilities) that have potential to cause direct avian mortality (e.g., wind turbines, guyed towers, airports, wastewater disposal facilities, transmission lines), we recommend locating structures away from high avian-use areas such as those used for nesting, foraging, roosting or migrating, and the travel zones between high-use areas. If the wildlife survey data available for the proposed project area and vicinity do not provide the detail needed to identify normal bird habitat use and movements, we recommend collecting that information prior to determining locations for any infrastructure that may create an increased potential for avian mortalities. We also recommend contacting the Service's Wyoming Ecological Services office for project-specific recommendations.

Additional Protections for Eagles

The Eagle Act protections include provisions not included in the MBTA, such as the protection of unoccupied nests and a prohibition on disturbing eagles. Specifically, the Eagle Act prohibits knowingly taking, or taking with wanton disregard for the consequences of an activity, any bald

or golden eagle or their body parts, nests, chicks or eggs, which includes collection, possession, molestation, disturbance, or killing. The term "disturb" is defined as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior" (50 CFR 22.3 and see also 72 FR 31132).

The Eagle Act includes limited exceptions to its prohibitions through a permitting process. The Service has issued regulations concerning the permit procedures for exceptions to the Eagle Act's prohibitions (74 FR 46836), including permits to take golden eagle nests which interfere with resource development or recovery operations (50 CFR 22.25). The regulations identify the conditions under which a permit may be issued (i.e., status of eagles, need for action), application requirements, and other issues (e.g., mitigation, monitoring) necessary in order for a permit to be issued.

For additional recommendations specific to Bald Eagles please see our Bald Eagle information web page (http://www.fws.gov/wyominges).

Recommended Steps for Addressing Raptors in Project Planning

Using the following steps in early project planning, agencies and proponents can more easily minimize impacts to raptors, streamline planning and permitting processes, and incorporate measures into an adaptive management program:

1. Coordinate with appropriate Service offices, Wyoming Game and Fish Department, Tribal governments, and land-management agencies at the earliest stage of project planning.
2. Identify species and distribution of raptors occurring within the project area by searching existing data sources (e.g., Wyoming Game and Fish Department, Federal land-management agencies) and by conducting on-site surveys.
3. Plan and schedule short-term and long-term project disturbances and human-related activities to avoid raptor nesting and roosting areas, particularly during crucial breeding and wintering periods
4. Determine location and distribution of important raptor habitat, nests, roost sites, migration zones and, if feasible, available prey base in the project impact area.
5. Document the type, extent, timing, and duration of raptor activity in important use areas to establish a baseline of raptor activity.
6. Ascertain the type, extent, timing, and duration of development or human activities proposed to occur, and the extent to which this differs from baseline conditions.
7. Consider cumulative effects to raptors from proposed projects when added to past, present, and reasonably foreseeable actions. Ensure that project mitigation adequately addresses cumulative effects to raptors.
8. Minimize loss of raptor habitats and avoid long-term habitat degradation. Mitigate for unavoidable losses of high-valued raptor habitats, including (but not limited to) nesting, roosting, migration, and foraging areas.
9. Monitor and document the status of raptor populations and, if feasible, their prey base post project completion, and evaluate the success of mitigation efforts.

10. Document meaningful data and evaluations in a format that can be readily shared and incorporated into wildlife databases (contact the Service's Wyoming Ecological Services office for details).

Protection of nesting, wintering (including communal roost sites), and foraging activities is considered essential to conserving raptors. In order to promote the conservation of migratory bird populations and their habitats, Federal agencies should implement those strategies directed by Executive Order 13186, "Responsibilities of Federal Agencies To Protect Migratory Birds" (66 FR 3853).

Recommended Seasonal and Spatial Buffers to Protect Nesting Raptors

Because many raptors are particularly sensitive to disturbance (that may result in take) during the breeding season, we recommend implementing spatial and seasonal buffer zones to protect individual nest sites/territories (Table 1). The buffers serve to minimize visual and auditory impacts associated with human activities near nest sites. Ideally, buffers would be large enough to protect existing nest trees and provide for alternative or replacement nest trees. The size and shape of effective buffers vary depending on the topography and other ecological characteristics surrounding the nest site. In open areas where there is little or no forested or topographical separation, distance alone must serve as the buffer. Adequate nesting buffers will help ensure activities do not take breeding birds, their young or eggs. For optimal conservation benefit, we recommend that no temporary or permanent surface occupancy occur within species-specific spatial buffer zones. For some activities with very substantial auditory impacts (e.g., seismic exploration and blasting) or visual impacts (e.g., tall drilling rig), a larger buffer than listed in Table 1 may be necessary, please contact the Service's Wyoming Ecological Services office for project specific recommendations on adequate buffers.

As discussed above, for infrastructure that may create an increased potential for raptor mortalities, the spatial buffers listed in Table 1 may not be sufficient to reduce the incidence of raptor mortalities (for example, if a wind turbine is placed outside a nest disturbance buffer, but inadvertently still within areas of normal daily or migratory bird movements); therefore, please contact the Service's Wyoming Ecological Services office for project specific recommendations on adequate buffers.

Buffer recommendations may be modified on a site-specific or project-specific basis based on field observations and local conditions. The sensitivity of raptors to disturbance may be dependent on local topography, density of vegetation, and intensity of activities. Additionally, individual birds may be habituated to varying levels of disturbance and human-induced impacts. Modification of protective buffer recommendations may be considered where biologically supported and developed in coordination with the Service's Wyoming Ecological Services Field Office.

Because raptor nests are often initially not identified to species (e.g., preliminary aerial surveys in winter), we first recommend a generic raptor nest seasonal buffer guideline of January 15th – August 15th. Similarly, for spatial nesting buffers, until the nesting species has been confirmed, we recommend applying a 1-mile spatial buffer around the nest. Once the raptor species is confirmed, we then make speeies-specific and site-specific recommendations on seasonal and spatial buffers (Table 1).

Activities should not occur within the spatial/seasonal buffer of any nest (occupied or unoccupied) when raptors are in the process of courtship and nest site selection. Long-term land-use activities and human-use activities should not occur within the species-specific spatial buffer of occupied nests. Short-term land use and human-use activities proposed to occur within the spatial buffer of an occupied nest should only proceed during the seasonal buffer after coordination with the Service, State, and Tribal wildlife resources management agencies, and/or land-management agency biologists. If, after coordination, it is determined that due to human or environmental safety or otherwise unavoidable factors, activities require temporary incursions within the spatial and seasonal buffers, those activities should be planned to minimize impacts and monitored to determine whether impacts to birds occurred. Mitigation for habitat loss or degradation should be identified and planned in coordination with applicable agencies.

Please contact the Service's Wyoming Ecological Services Field Office if you have any questions regarding the status of the bald eagle, permit requirements, or if you require technical assistance regarding the MBTA, Eagle Act, or the above recommendations. The recommended spatial and seasonal buffers are voluntary (unless made a condition of permit or license) and are not regulatory, and they do not supersede provisions of the MBTA, Eagle Act, Migratory Bird Permit Memorandum (MBMP-2), and Endangered Species Act. Assessing legal compliance with the MBTA or the Eagle Act and the implementing regulations is ultimately the authority and responsibility of the Service's law enforcement personnel. Our recommendations also do not supersede Federal, State, local, or Tribal regulations or permit conditions that may be more restrictive.

Raptors of Conservation Concern

The Service's Birds of Conservation Concern (2008) report identifies "species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing" under the Endangered Species Act (16 U.S.C 1531 et seq.). This report is intended to stimulate coordinated and proactive conservation actions among Federal, State, and private partners. The Wyoming Partners in Flight Wyoming Bird Conservation Plan identifies priority bird species and habitats, and establishes objectives for bird populations and habitats in Wyoming. This plan also recommends conservation actions to accomplish the population and habitat objectives.

We encourage project planners to develop and implement protective measures for the Birds of Conservation Concern as well as other high-priority species identified in the Wyoming Bird Conservation Plan. For additional information on the Birds of Conservation Concern that occur in Wyoming, please see our Birds of Conservation Concern web page.

Table 1. Service's Wyoming Ecological Services Field Office's Recommended Spatial and Seasonal Buffers for Breeding Raptors

Raptors of Conservation Concern (see below for more information)

Common Name	Spatial buffer (miles)	Seasonal buffer
Golden Eagle	0.50	January 15 - July 31
Ferruginous Hawk	1.00	March 15 - July 31
Swainson's Hawk	0.25	April 1 - August 31
Bald Eagle	see our Bald Eagle information web page	
Prairie Falcon	0.50	March 1 - August 15
Peregrine Falcon	0.50	March 1 - August 15
Short-eared Owl	0.25	March15- August 1
Burrowing Owl	0.25	April 1 – September 15
Northern Goshawk	0.50	April 1 - August 15

Additional Wyoming Raptors

Common Name	Spatial buffer (miles)	Seasonal buffer
Osprey	0.25	April 1 - August 31
Cooper's Hawk	0.25	March 15 – August 31
Sharp-shinned Hawk	0.25	March 15 – August 31
Red-tailed Hawk	0.25	February 1 – August 15
Rough-legged Hawk (winter resident only)	----	----
Northern Harrier	0.25	April 1 - August 15
Merlin	0.50	April 1 - August 15
American Kestrel	0.125	April 1 – August 15
Common Barn Owl	0.125	February 1 – September 15
Northern Saw-whet Owl	0.25	March 1 - August 31
Boreal Owl	0.25	February 1 – July 31
Long-eared Owl	0.25	February 1 – August 15
Great Horned Owl	0.125	December 1 – September 30
Northern Pygmy-Owl	0.25	April 1 – August 1
Eastern Screech -owl	0.125	March 1 – August 15
Western Screech-owl	0.125	March 1 – August 15
Great Gray Owl	0.25	March 15 – August 31

Additional Planning Resources

Avian Power Line Interaction Committee (APLIC). 2006. Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006. Edison Electric Institute, APLIC, and the California Energy Commission. Washington, D.C. and Sacramento, CA.

Edison Electric Institute and the Raptor Research Foundation. 1996. Suggested Practices for Raptor Protection on Power Lines - The State of the Art in 1996. Washington, D.C.

Edison Electric Institute's Avian Power Line Interaction Committee and U.S. Fish and Wildlife Service. 2005. Avian Protection Plan Guidelines.

Edison Electric Institute and the Raptor Research Foundation. 1994. Mitigating Bird Collisions with Power Lines - The State of the Art in 1994. Washington, D.C.

U.S. Fish and Wildlife Service. 2000. Siting, Construction, Operation and Decommissioning of Communications Towers and Tower Site Evaluation Form (Directors Memorandum September 14, 2000), Arlington, Virginia.

U.S. Fish and Wildlife Service. 2007. National Bald Eagle Management Guidelines. United States Department of Interior, Fish and Wildlife Service, Arlington, Virginia. 23 pp.

Wyoming Game and Fish Department Internet Link to Raptor Information

References

50 CFR 10.12 – Code of Federal Regulations. Title 50--Wildlife and Fisheries, Chapter I--United States Fish and Wildlife Service, Department of the Interior, Part 10--General Provisions.

50 CFR 10.13– Code of Federal Regulations. Title 50--Wildlife and Fisheries, Chapter I--United States Fish and Wildlife Service, Department of the Interior, Part 10--General Provisions.

50 CFR 22.3 – Code of Federal Regulations. Title 50--Wildlife and Fisheries, Chapter I--United States Fish and Wildlife Service, Department of the Interior, Part 22—Eagle Permits.

50 CFR 22.25– Code of Federal Regulations. Title 50--Wildlife and Fisheries, Chapter I--United States Fish and Wildlife Service, Department of the Interior, Part 22—Eagle Permits.

66 FR 3853 - Presidential Documents. Executive Order 13186 of January 10, 2001. Responsibilities of Federal Agencies To Protect Migratory Birds. Federal Register, January 17, 2001.

72 FR 31132 - Protection of Eagles; Definition of "Disturb". Final Rule. Federal Register, June 5, 2007.

74 FR 46836 - Eagle Permits; Take Necessary To Protect Interests in Particular Localities. Final Rule. Federal Register, September 11, 2009.

U.S. Fish and Wildlife Service. 2003. Migratory Bird Permit Memorandum, MBMP-2, Nest Destruction (Directors Memorandum April 15, 2003), Washington, D.C.

U.S. Fish and Wildlife Service. 2008. Birds of Conservation Concern 2008. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, Virginia. 85 pp.

Birds of Conservation Concern

Many species of migratory birds, including eagles and other raptors, are protected under the Migratory Bird Treaty Act, (MBTA) 16 U.S.C. 703 and Bald and Golden Eagle Protection Act (Eagle Act) 16 U.S.C. 668. The Service's *Birds of Conservation Concern (2008)* report identifies "species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing" under the Endangered Species Act (16 U.S.C 1531 *et seq.*). This report is intended to stimulate coordinated and proactive conservation actions among Federal, State, and private partners.

The *Wyoming Partners in Flight Wyoming Bird Conservation Plan* identifies priority bird species and habitats, and establishes objectives for bird populations and habitats in Wyoming. This plan also recommends conservation actions to accomplish the population and habitat objectives.

We encourage project planners to develop and implement protective measures for the Birds of Conservation Concern as well as other high priority species identified in the Wyoming Bird Conservation Plan. In order to further promote the conservation of migratory bird populations and their habitats, Federal agencies should implement those strategies directed by Executive Order 13186, "Responsibilities of Federal Agencies To Protect Migratory Birds" (66 FR 3853).

The MBTA specifically protects migratory birds and their nests from possession, sale, purchase, barter, transport, import, and export, and take. The regulatory definition of take (50 CFR 10.12), means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to hunt, shoot, wound, kill, trap, capture, or collect. Work that could lead to the take of a migratory bird or eagle, their young, eggs, or nests (for example, if you are going to erect new roads, or power lines in the vicinity of a nest), should be coordinated with our office before any actions are taken.

Listed in Table 1 below are the Birds of Conservation Concern that occur in Wyoming, with their conservation priority and primary habitat type as identified in the *Wyoming Bird Conservation Plan*.

The Birds of Conservation Concern Report divides geographical areas into "Bird Conservation Regions." Wyoming is included in portions of four **Bird Conservation Regions**: **BCR 10** (Northern Rockies U.S. portion only), **BCR 16** (Southern Rockies/Colorado Plateau), **BCR 17** (Badlands and Prairies), and **BCR 18** (Shortgrass Prairie).

Conservation Priority: Level I (Conservation Action): Species clearly needs conservation action; **Level II (Monitoring)**: The action and focus for the species is monitoring (M). Declining population trend and habitat loss are not significant at this point; **Level III (Local Interest):** Species that Wyoming Partners In Flight may recommend for conservation action (CA) that are not otherwise high priority but are of local interest (LI); **Level IV (Not Considered Priority):** Additional species of concern, but not considered a priority species.

Table 1. Birds of conservation concern in Wyoming.

Common name	Scientific Name	Bird Conservation Region (BCR)	Conservation Priority	Primary Habitat Type(s)
American Bittern	*Botaurus lentiginosus*	BCR 16, BCR 17	Level I	Wetlands
Baird's Sparrow	*Ammodramus bairdii*	BCR 17	Level I	Shortgrass Prairie
Bald Eagle (b)	*Haliaeetus leucocephalus*	BCR 10 , BCR 16 , BCR 17, BCR 18	Level I	Montane Riparian, Plains/Basin Riparian
Brewer's Sparrow	*Spizella breweri*	BCR 10 , BCR 16 , BCR 17	Level I	Shrub-steppe, Mountain-foothills Shrub
Burrowing Owl	*Athene cunicularia*	BCR 16 , BCR 17 , BCR 18	Level I	Shortgrass Prairie
Ferruginous Hawk	*Buteo regalis*	BCR 10 , BCR 16 , BCR 17	Level I	Shrub-steppe, Shortgrass Prairie
Long-billed Curlew	*Numenius americanus*	BCR 10 , BCR 16 , BCR 17 , BCR 18	Level I	Shortgrass Prairie, Meadows
McCown's Longspur	*Calcarius mccownii*	BCR 10 , BCR 17 , BCR 18	Level I	Shortgrass Prairie
Mountain Plover	*Charadrius montanus*	BCR 16 , BCR 17 , BCR 18	Level I	Shortgrass Prairie, Shrub-steppe
Peregrine Falcon (b)	*Falco peregrinus*	BCR 10 , BCR 16 , BCR 17	Level I	Specialized (cliffs)
Sage Sparrow	*Amphispiza belli*	BCR 10 , BCR 17	Level I	Shrub-steppe, Mountain-foothills Shrub
Short-eared Owl	*Asio flammeus*	BCR 17	Level I	Shortgrass Prairie, Meadows
Swainson's Hawk	*Buteo swainsoni*	BCR 10	Level I	Plains/Basin Riparian
Upland Sandpiper	*Bartramia longicauda*	BCR 10 , BCR 17 , BCR 18	Level I	Shortgrass Prairie
Black-billed Cuckoo	*Coccyzus erythropthalmus*	BCR 17	Level II	Plains/Basin Riparian
Calliope Hummingbird	*Stellula calliope*	BCR 10	Level II	Mid Elevation Conifer, Montane Riparian
Chestnut-collared Longspur	*Calcarius ornatus*	BCR 16, BCR 17 , BCR 18	Level II	Shortgrass Prairie
Dickcissel	*Spiza americana*	BCR 17	Level II	Shortgrass Prairie
Grasshopper Sparrow	*Ammodramus savannarum*	BCR 16 , BCR 17	Level II	Shortgrass Prairie, Shrub-steppe
Juniper Titmouse	*Baeolophus ridgwayi*	BCR 16	Level II	Juniper Woodland
Lark Bunting	*Calamospiza melanocorys*	BCR 18 (Shortgrass Prairie)	Level II	Shortgrass Prairie, Shrub-steppe
Lewis's Woodpecker	*Melanerpes lewis*	BCR 10 , BCR 16, BCR 17 , BCR 18	Level II	Low Elevation Conifer, Plains/Basin Riparian
Loggerhead Shrike	*Lanius ludovicianus*	BCR 10, BCR 17	Level II	Shrub-steppe
Olive-sided Flycatcher	*Contopus cooperi*	BCR 10	Level II	High Elevation Conifer, Mid Elevation Conifer
Sage Thrasher	*Oreoscoptes montanus*	BCR 10 , BCR 17	Level II	Shrub-steppe
Snowy Plover (c)	*Charadrius alexandrinus*	BCR 16, BCR 18	Level II	Wetlands
Williamson's Sapsucker	*Sphyrapicus thyroideus*	BCR 10	Level II	Mid Elevation Conifer
Willow Flycatcher (c)	*Empidonax traillii*	BCR 10, BCR 16 , BCR 18	Level II	Montane Riparian, Plains/Basin Riparian
Yellow-billed Cuckoo (w. U.S. DPS) (a)	*Coccyzus americanus*	BCR 10 , BCR 16	Level II	Plains/Basin Riparian
Black Rosy-Finch	*Leucosticte atrata*	BCR 10 , BCR 16	Level III	Alpine Tundra/Grassland, Specialized (cliffs)
Brown-capped Rosy-Finch	*Leucosticte australis*	BCR 16	Level III	Alpine Tundra/Grassland, Specialized (cliffs)

Golden Eagle	*Aquila chrysaetos*	BCR 16 , BCR 17, BCR 18	Level III	Specialized (cliffs)
Prairie Falcon	*Falco mexicanus*	BCR 16 , BCR 17	Level III	Specialized (cliffs)
Red-headed Woodpecker	*Melanerpes erythrocephalus*	BCR 17	Level III	Plains/Basin Riparian, Low Elevation Conifer
Veery	*Catharus fuscescens*	BCR 16	Level III	Montane Riparian
Cassin's Finch	*Carpodacus cassinii*	BCR 10 , BCR 16	Level IV	Mid Elevation Conifer, High Elevation Conifer
Pinyon Jay	*Gymnorhinus cyanocephalus*	BCR 16, BCR 17	Level IV	Juniper Woodland
Sprague's Pipit	*Anthus spragueii*	BCR 17 , BCR 18	Not Listed	
Yellow Rail	*Coturnicops noveboracensis*	BCR 17	Not Listed	
Black Swift	*Cypseloides niger*	BCR 10	Not Listed	
Marbled Godwit	*Limosa fedoa*	BCR 17	Not Listed	
Flammulated Owl	*Otus flammeolus*	BCR 10 , BCR 16	Not Listed	
Horned Grebe	*Podiceps auritus*	BCR 17	Not Listed	

Table 1 Note: Under "Common Name" we have included information related to status under the Endangered Species Act: (a) ESA candidate, (b) ESA delisted, and (c) non-listed subspecies or population of Threatened or Endangered species.

References

66 FR 3853 - Presidential Documents. Executive Order 13186 of January 10, 2001. Responsibilities of Federal Agencies To Protect Migratory Birds. Federal Register January 17, 2001.

U.S. Fish and Wildlife Service. 2008. Birds of Conservation Concern 2008. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, Virginia. 85 pp. [Online version available at <http://www.fws.gov/migratorybirds/>]

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Appendix A

Wyoming Statewide Transportation Program

(STIP)

Projects 2010-2014

TRANSPORTATION DISTRICT 1
FY 2010

PROJECT ID	DESCRIPTION	CNTY	BEGIN RM	END RM	TYPE OF IMPROVEMENT	PROJECT CATEGORY	EFFECT		DETERMINATION			NOTES
							NO	MAY	NLAA	LAA		
0251153	COLO-CHEY/SPEER INT	LA	4.55	5.15	NEW INTERCHANGE	RECONSTRUCTION WITH ADDED CAPACITY	X					In previous PBA. NO EFFECT (BASED ON BIOLOGICAL EVALUATION)
0804234	RAWL MARG/CEDAR STR INT/STG I	CB	215.57	215.57	REPLACE INTERCHANGE/STG I	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					
0804237	WALC JCT-LARA/ELKM WEST/EBL	CB	251.00	258.95	RESURFACE	RESTORATION OR RESURFACING	X					
P551018	LARA STS/GRND/VISTA/SIGNAL	AL	331.53	331.53	TRAFFIC SIGNAL	SAFETY	X					
I806196	CHEY MARG/TRLS END DRAIN/362.5	LA	362.04	362.65	STORM SEWER CONNECTOR	RESTORATION OR RESURFACING	X					
4223001	LARA STS/VISTA DR	AL	0.00	0.00	RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					
I251162	COLO-CHEY/SPEER INT ENHC	LA	4.75	4.75	ENHANCEMENTS	ENVIRONMENTAL-ONLY PROJECT	X					
I806195	I-80 ACCELERATION LANES	LA	362.04	362.04	ACCELERATION LANES	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					

TRANSPORTATION DISTRICT 1
FY 2011

PROJECT ID	DESCRIPTION	CNTY	BEGIN RM	END RM	TYPE OF IMPROVEMENT	PROJECT CATEGORY	EFFECT		DETERMINATION			NOTES
							NO	MAY	NLAA	LAA		
0107026	CHEY-LARA/HAPPY JACK/FOREST	AL	27.10	37.80	OVERLAY	RESTORATION OR RESURFACING	X				lo	
0251147	CHEY MARG/VANDEHEI INT	LA	13.83	13.83	WIDEN STRUCTURE/ROUNDABOUTS	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					2008 PROJECT IN PREVIOUS PBA
1103006	CARP ROAD/OVRLY	LA	0.12	4.40	OVERLAY	RESTORATION OR RESURFACING	X					
1117001	LARA-CHEY/OLD US30/RR BRDG	LA	0.00	0.00	REMOVE OLD BRIDGE	ENVIRONMENTAL-ONLY PROJECT	X					
I804240	WALC JCT-LARA/ELK M WEST/WBL	CB	251.00	258.95	RESURFACING	RESTORATION OR RESURFACING	X					

I804243	RKSP-RAWL/RAWLINS W/EBL	CB	199.00	211.00	RESURFACING	RESTORATION OR RESURFACING		X	ULTO			Field check may change to No Effect
N232062	LARA-COLO/OVRLY	AL	404.50	415.80	RESTORATION & REHABILITATION	RESTORATION OR RESURFACING	X					
B099082	I80 Wildlife Crossings	CB			WILDLIFE CROSSINGS	ENVIRONMENTAL-ONLY PROJECT	X					

TRANSPORTATION DISTRICT 1
FY 2012

PROJECT ID	DESCRIPTION	CNTY	BEGIN RM	END RM	TYPE OF IMPROVEMENT	PROJECT CATEGORY	EFFECT		DETERMINATION			NOTES
							NO	MAY	NLAA	LAA		
0804228	RKSP-RAWL/RAWL W/WBL	CB	199.00	211.00	MILL/LEVEL/OVERLAY/3R	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			2006 PROJECT IN PREVIOUS PBA, FIELD CHECK MAY CHANGE TO NO EFFECT
I804241	WALC JCT-LARA/HALLECK RIDGE EBL	CB	245.86	251.00	MILL & OVERLAY ONLY	RESTORATION OR RESURFACING	X					
N252035	CHEY-TORR/TORR INT-LA/GO CO LN	LA	24.10	40.01	PASSING LANES	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO , CBP			Field check could change to No Effect
P261022	LARAST/UPRR OVERPASS #CIF	AL	0.18	0.18	BRIDGE REPLACEMENT	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					
0007069	CHEY STS/PERSHING/I-25-PIONEER	LA	0.00	0.00	RECONSTRUCTION	RECONSTRUCTION WITH ADDED CAPACITY	X					
7069A01	ARS/CHEY/PERSHING/I-25-PIONEER	LA	0.00	0.00	WATER & SEWER	ENVIRONMENTAL-ONLY PROJECT	X					
CN05074	AL CO/US 30 / IRP	AL	0.00	0.00	CONSTRUCTION & MISC WORK	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					
CN06062	CB CO/MEDB RVR BR/SVRY CR BR	CB	0.00	0.00	BRIDGE REPLACEMENT	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			

TRANSPORTATION DISTRICT 1
FY 2013

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							NO	MAY	NLAA	LAA		
0261020	LARAST/UPRR OVERPASS SEC	AL	0.00	0.63	NEW CONSTRUCTION	NEW CONSTRUCTION	X					

6598143	LARA STS/30TH-GRND/RECONS	AL	330.48	330.48	INTERSECTION RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					
I804242	WALC-LARA/HALLECK RIDGE /W WBL	AL	245.86	251.00	RESURFACING	RESTORATION OR RESURFACING	X					
N211056	RAWL-MUDG/BEL SPRG	CB	12.67	22.81	WIDEN & OVERLAY/+ LANES	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO, BFF			2007 PROJECT IN PREVIOUS PBA. Field check may change to no effect.

TRANSPORTATION DISTRICT 1
FY 2014

PROJECT ID	DESCRIPTION	CNTY	BEGIN RM	END RM	TYPE OF IMPROVEMENT	PROJECT CATEGORY	EFFECT		DETERMINATION			NOTES
							NO	MAY	NLAA	LAA		
0401033	BAGGS-ENCT/WYO 70/SVRY E/OVRLY	CB	16.80	26.60	OVERLAY/SURVEY EAST	RESTORATION OR RESURFACING	X					
0804238	WALC JCT-COOPER COVE/CB AL CO	CB	240.00	290.00	SNOW FENCE	SAFETY	X					
I102005	I80-BURNS/UPRR OVRPSS SECT	LA	0.00	2.70	CONSTRUCT NEW RR OVERPASS	NEW CONSTRUCTION		X	ULTO, CBP			Field check may change to No Effect
I251156	CHEY-CHUG/WHITAKER SEC	LA	24.20	30.75	RESURFACING	RESTORATION OR RESURFACING	X					
N232048	LARA-COLO/STATE LN SEC	AL	419.67	425.41	WIDEN ROADWAY/RECONSTRUCTION	RECONSTRUCTION WITH ADDED CAPACITY	X					

TRANSPORTATION DISTRICT 2
FY 2010

PROJECT ID	DESCRIPTION	CNTY	BEGIN RM	END RM	TYPE OF IMPROVEMENT	PROJECT CATEGORY	EFFECT		DETERMINATION			NOTES
							NO	MAY	NLAA	LAA		
N212084	CASP/W BELT LOOP/SEC 1	NA	109.30	109.30	NEW CONSTR/GRADING/STRUCTURES	NEW CONSTRUCTION		X	ULTO			
0253103	HACKALO/RECLAI M/06	CO	163.97	163.97	RECLAIM STOCKPILE	ENVIRONMENTAL-ONLY PROJECT	X					2005 PROJECT IN PREVIOUS PBA
0504019	GLNK-ROSS/BNRR SEP#JDP	CO	3.06	3.06	REPAIR APPROACH SLABS	RESTORATION OR RESURFACING	X					
1315001	CASPER-SHOSHONI/SRV RD	NA	0.50	0.50	WING WALL REPAIR (US 20/26/87 MP 9.3)	SAFETY		X	ULTO			Field check may change to No Effect
I253111	CASP-DOUG/+172.80 +174.20	CO	170.50	170.50	FAULT & PAVEMENT REPAIR	RESTORATION OR RESURFACING	X					
I253112	DOUG MARG	CO	134.90	141.42	OVERLAY	RESTORATION OR RESURFACING	X					
N283011	US 26/TORR STS	GO	48.30	49.21	REHABILITATION	RESTORATION OR RESURFACING	X					
N393010	LUSK-NEBR ST LINE	NI	57.85	57.85	GUARDRAIL MODIFICATIONS	SAFETY	X					
N431030	DOUG/PLATTE&AN TELOPE/GRDRL	CO	0.70	0.70	CSA/GUARDRAIL MODIFICATIONS	SAFETY	X					2006 PROJECT IN PREVIOUS PBA
N854068	LUSK-NEWC/OVRLY	NI	168.50	185.00	RESTORATION & REHABILITATION	RESTORATION OR RESURFACING	X					
N854070	LUSK-MULE CR	NI	185.55	185.55	GUARDRAIL MODIFICATIONS	SAFETY	X					
P241042	SHRM-MEDB/WYO 487	CB	34.00	47.20	WIDEN/MILL/LEVEL/OVERLAY	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO , BFF			
P581022	DOUG BYPASS/BR REPAIR/10	CO	140.44	140.44	BRIDGE REPAIR	RESTORATION OR RESURFACING		X	ULTO			Field check may change to No Effect
S805006	SUGR/E SEC	GO	0.25	7.00	RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			2008 PROJECT IN PREVIOUS PBA
W258019	CASP STS/WYO BLVD & POPLAR INT	NA	11.91	11.91	RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					
0C07080	GO CO/HORS //EYS	GO	0.00	0.00	STRUCTURE REPLACEMENT	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			Field check may change to No Effect
4109010	CASP/2ND STR/DAVID-SPRUCE	NA	0.00	0.00	RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					
B062007	DIST 2/ITS/RD CLOSURE GATE	NA	0.00	0.00	3 RD CLOSURE GATE SYSTEMS	SAFETY	X					

B103008	ARS/CASP STS/SIG SYS/TURN/MISC	NA	0.00	0.00	SIGNAL SYS/TURN LANES/MISC	SAFETY	X					
CN01056	NA CO/ CO RD 702	NA	0.00	0.00	SURFACING	RESTORATION OR RESURFACING	X					
CN01057	NA CO/ CO RD 703	NA	0.00	0.00	SURFACING	RESTORATION OR RESURFACING	X					
CN01058	NA CO/ CO RD 602	NA	0.00	0.00	SURFACING	RESTORATION OR RESURFACING	X					
CN01061	NA CO/SIX MILE ROAD/CO RD 119	NA	0.00	0.00	RESURFACING	RESTORATION OR RESURFACING	X					
I252156	BRDX LIGHTING & DMS	PL	70.62	70.62	LIGHTING & DMS	SAFETY	X					
N212A01	ARS/CASP WEST BELT/N212084	NA	109.30	109.30	ATTACH CONDUIT	ENVIRONMENTAL-ONLY PROJECT	X					
P581021	DOUG STS/YELL/ENHC #2	CO	139.21	140.44	ENHANCEMENTS/#2	ENVIRONMENTAL-ONLY PROJECT	X					
U258018	CASP STS /WYO BLVD /PLAZA DR	NA	10.21	10.21	SIGNAL /TURN LANE	SAFETY	X					

TRANSPORTATION DISTRICT 2
FY 2011

PROJECT ID	DESCRIPTION	CNTY	BEGIN RM	END RM	TYPE OF IMPROVEMENT	PROJECT CATEGORY	EFFECT		DETERMINATION			NOTES
							NO	MAY	NLAA	LAA		
U254003	CASP ST/WYO-254/SALT CR HWY	NA	1.20	1.70	RECONSTRUCTION	RECONSTRUCTION WITH ADDED CAPACITY		X	ULTO			
0253085	DOUG-GLNK/DOUG/W SEC SBL	CO	141.37	145.60	WIDEN & OVERLAY/ISO-RECONST	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			2008 PROJECT IN PREVIOUS PBA
1401008	MNVL-LNCE/LANCE SO	NI	107.90	116.90	RECONSTRUCTION/3R	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			2007 PROJECT IN PREVIOUS PBA
B072008	DIST 2/SNOW FENCE/08	NA	0.00	0.00	INSTALL SNOW FENCE	SAFETY	X					
I252155	CHEY-WHEATLAND	PL	40.00	80.00	INSTALL SNOW FENCE	SAFETY	X					
N341106	MILLS STRS/ WY BLVD & PSN SPDR	NA	4.63	5.03	REPLACE SIGNAL/RECONST INTERSE	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			
1602016	CHUG/US 85/US 85 WEST	GO	119.00	130.20	MILL, LEVEL & OVERLAY	RESTORATION OR RESURFACING	X					
1000017	KAYC-BARNUM	JO	100.00	109.66	RIGHT OF WAY FENCE	SAFETY	X					
0806003	GO CO/ WYO 157	GO	0.00	0.00	GATES & CIRCUITRY	SAFETY	X					

0C01054	NA CO/GAS PLANT RD/05	NA	0.00	0.00	STRUCTURE REPLACEMENT	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			Field check may change to No Effect
1006018	KAYC STS/MAIN ST ENHC/PHS 2	JO	253.54	254.11	ENHANCEMENTS	ENVIRONMENTAL-ONLY PROJECT	X					
4116001	MILLS STS/POISON SPIDER RD	NA	0.00	0.00	RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			Field check may change to No Effect
4131002	CASP/ROBERTSON RD	NA	0.00	0.00	RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			Field check may change to No Effect
4954001	TORR/INDUST PARK AVE	GO	0.00	0.00	NEW CONSTRUCTION	NEW CONSTRUCTION		X	ULTO			2008 PROJECT IN PREVIOUS PBA
CN01059	NA CO /EVANS ST - EVLL	NA	0.00	0.00	SURFACING	RESTORATION OR RESURFACING	X					
CN01060	NA CO /WESTERN AVE - EVLL	NA	0.00	0.00	SURFACING	RESTORATION OR RESURFACING	X					

TRANSPORTATION DISTRICT 2
FY 2012

PROJECT ID	DESCRIPTION	CNTY	BEGIN RM	END RM	TYPE OF IMPRDVEMENT	PROJECT CATEGORY	EFFECT		DETERMINATION			NOTES
							NO	MAY	NLAA	LAA		
1600006	WHTL/HIGHTOWER RD & WYO 311 SPUR	PL	4.50	7.50	WIDEN & RESURFACE	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO , CBP			
N341107	CASP-SHOS/PWDR-DIST BOUNDARY	NA	39.60	50.70	OVERLAY	RESTORATION OR RESURFACING	X					
N854069	TORR-LUSK/LUSK SOUTH/OVRLY	NI	139.00	149.00	RESTORATION & REHABILITATION	RESTORATION OR RESURFACING	X					
P212096	CASP/CY&POPLAR	NA	115.20	115.42	RECONSTRUCT INTERSECTION	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					2008 PROJECT IN PREVIOUS PBA
P471001	CASP ST/US-20&26 SPUR MP 0-2.9	NA	1.25	2.90	RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			
1602015	CHUG/PATHWAY	PL	54.64	55.23	PATHWAY, BEAUTIFICATION, SIGN	ENVIRONMENTAL-ONLY PROJECT		X	ULTO , CBP			Field check may change to No Effect

TRANSPORTATION DISTRICT 2
FY 2013

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							NO	MAY	NLAA	LAA		
1401007	MNVL-LNCE/WYATTE CR	NI	104.34	107.90	RECONSTRUCTION/3R	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					SITE VISIT IN AUGUST 2008
I253104	HACKALO/RECLAIM	CO	163.98	163.98	RECLAIM STOCKPILE	ENVIRONMENTAL-ONLY PROJECT	X					2007 PROJECT IN PREVIOUS PBA
I253109	DOUG-GLNK/DOUG/WNBL SEC	CO	141.37	145.60	WIDEN & OVERLAY/ISO-RECONST	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			
N253081	TORR/US 85 BYPASS	GO	92.64	92.64	STRUCTURE & NORTH APPROACH	NEW CONSTRUCTION		X	ULTO			
P202065	MUDG-LAND/US 287/789	FR	6.41	12.80	WIDEN/MILL/LEVEL/OVERLAY	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO , BFF			

TRANSPORTATION DISTRICT 2
FY 2014

PROJECT ID	DESCRIPTION	CNTY	BEGIN RM	END RM	TYPE OF IMPROVEMENT	PROJECT CATEGORY	EFFECT		DETERMINATION			NOTES
							NO	MAY	LAA	LAA		
0252140	DWYR-GLEN/EL RANCHO/NBL	PL	94.20	97.50	WIDEN & OVERLAY/ISO RECONST	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			2009 PROJECT IN PREVIOUS PBA
N212105	CASP STS-CY AVE	NA	111.60	111.90	SIGNAL REPLACEMENT & RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					
1600009	WITL/HIGHTOWER RD	PL	0.80	4.50	WIDEN & RESURFACE	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO , CBP			
N211059	MUDG-CASP/MUDGN	CB	44.90	58.30	RESTORATION & REHABILITATION/PASSING LANES	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO , BFF			
W319003	GLEN/BNRR SEP STR# CYX	PL	114.31	114.31	BRIDGE REPLACEMENT	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					2009 PROJECT IN PREVIOUS PBA
W319005	GLEN/BNRR SEP ROADWORK	PL	114.29	114.62	RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					2009 PROJECT IN PREVIOUS PBA
4127008	CASP/PLATTE R #DVD #FEA	NA	0.00	0.00	REMOVE #DVD/WIDEN #FEA	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			

TRANSPORTATION DISTRICT 3
FY 2010

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							NO	MAY	NLAA	LAA		
2000051	WILS-ID LINE/TETON PASS	TE	13.20	13.20	SLIDE REPAIR	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					
I803141	BTTR REST AREA	SW	144.20	144.20	REST AREA UPGRADES	ENVIRONMENTAL-ONLY PROJECT	X					
I803142	RKSP-RAWL/MEDIAN REPAIR	SW	128.76	128.97	DRAINAGE REPAIR	ENVIRONMENTAL-ONLY PROJECT		X	ULTO			
N103105	SNAKE RIVER CANYON REPAIR	LN	118.32	141.31	MISC ROADWAY REPAIRS	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					
N132090	DANL JCT-HOBK JCT/+MP 149.0	SB	149.00	149.00	CLEAR TIMBER	ENVIRONMENTAL-ONLY PROJECT		X	CALY, GRWO, GRBE			Within CALY CH but NO Effect (<2.5 acres affected)
P132064	DANL-HOBK/DELL CR SEC/NHS	SB	142.75	147.60	RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	CALY, GRWO, GRBE			BO Complete. Within CALY (CH), but NO Effect (<2.5 acres affected)
I802193	GRRV-RKSP	SW	89.00	102.00	VARIABLE SPEED LIMIT SIGNS	SAFETY	X					
0C04086	SW CO/GRRV #FJE	SW	0.00	0.00	BRIDGE REPLACEMENT	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			2009 PROJECT IN PREVIOUS PBA
0C19034	UI CO/BLACKS FK R #ERI	UI	0.00	0.00	STRUCTURE REPLACEMENT	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			
0C22034	TE CO/CATTLEMANS BRDG	TE	0.00	0.00	BRIDGE REPLACEMENT	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO, YBCU			2009 PROJECT IN PREVIOUS PBA. Project dropped from 5-yr STIP
CN04102	SW CO/MAIN ST GRANGER	SW	0.00	0.00	CIRCUITRY UPGRADE	SAFETY	X					

TRANSPORTATION DISTRICT 3
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							NO	MAY	NLAA	LAA		
I801174	EVAN-GRRV/CHAIN UP AREAS	UI	7.40	34.74	CONST 2 TRUCK CHAIN UP AREAS	SAFETY		X	ULTO, BFF, YBCU			Field visit may change to No Effect
N131051	RKSP-PINE/US 191/EDEN SECT	SW	37.00	38.50	WIDEN TO 5 LANES	RECONSTRUCTION WITH ADDED CAPACITY		X	ULTO			
N104006	ALPN-HOBK/SNAK SEC	TE	140.70	141.40	RECONSTRUCTION/ITS WC	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	CALY, CALY (CH), GRWO, YBCU, GRBE			BO Complete, but CALY (CH) not included in BO

N104065	ALPN-HOBK/SNAK BR	TE	141.10	141.10	BRIDGE REPLACEMENT	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	CALY, CALY (CH), GRWO, YBCU, GRBE			BO Complete, but CALY (CH) not included in BO
N132099	PINE-HOBK JCT /US 191	SB	147.70	160.00	MILL AND OVERLAY	RESTORATION OR RESURFACING	X					
I801178	EVAN-LYMAN	UI	10.00	32.00	VARIBLE SPEED LIMIT SIGNS	SAFETY	X					
N104078	HOBK JCT/ENH&PATH	TE	140.69	142.50	ENHANCEMENTS/PATHWAYS/LNDSCP+	ENVIRONMENTAL-ONLY PROJECT	X					
B099082	I80 & 189 Wildlife Cross	UI, LI			WILDLIFE CROSSINGS	ENVIRONMENTAL-ONLY PROJECT	X					
B099082	I80 Wildlife Cross	SW			WILDLIFE CROSSINGS	ENVIRONMENTAL-ONLY PROJECT	X					
B099082	I80 Wildlife Cross	LI			WILDLIFE CROSSINGS	ENVIRONMENTAL-ONLY PROJECT	X					
B099082	I80 Wildlife Cross	SU			WILDLIFE CROSSINGS	ENVIRONMENTAL-ONLY PROJECT	X					

TRANSPORTATION DISTRICT 3
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							NO	MAY	NLAA	LAA		
0803132	RKSP-RAWL/TIPTON	SW	153.80	162.00	MILL, LEVEL AND OVERLAY	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	BFF			2009 PROJECT IN PREVIOUS PBA
1903022	HIAW/SALT WELLS CR	SW	5.95	16.06	WIDEN & OVERLAY	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO, BFF			2009 PROJECT IN PREVIOUS PBA
1904006	RKSP/ARPT RD	SW	0.00	4.66	WIDEN/OVERLAY	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO, BFF			
N132095	RKSP-PINE/PINE SOUTH	SB	89.90	91.70	WIDEN TO 5 LANES	RECONSTRUCTION WITH ADDED CAPACITY		X	GRWO			
P161023	MTNV-URIE/WYO 414	UI	96.69	101.06	OVERLAY/SPOT WIDENING	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO, YBCU, BFF			
0C22031	TE CO/HOBK R/STR #EKR	TE	0.00	0.00	RECONSTRUCTION/STRUCTURE RPL	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	CALY, CALY (CH), YBCU, GRWO, GRBE			
N132092	SB CO/US 191/BIKE PATH/97.41	SB	97.41	98.99	BIKE PATH	ENVIRONMENTAL-ONLY PROJECT	X					
P161024	MTNV-URIE/WYO 414	UI	96.69	99.30	PATHWAY	ENVIRONMENTAL-ONLY PROJECT		X	ULTO, YBCU, BFF			

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							NO	MAY	NLAA	LAA		
0802191	GRRV-RKSP/FLMG INTG	SW	99.14	99.14	BRIDGE REPLACEMENT	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					
N103095	SMOOT-AFTON/AFTON SO	LN	82.98	84.20	ADDED LANES/SIDEWALKS	RECONSTRUCTION WITH ADDED CAPACITY		X	GRWO, CALY, YBCU, GRBE			2009 PROJECT IN PREVIOUS PBA
N103106	ALPN-HOBK/BLUE TRAILS SLIDE	LN	127.20	127.20	SLIDE REPAIR/ RETAINING WALL	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	GRWO, CALY, CALY (CH), YBCU, GRBE			
N104072	JACK/BROADWY/RE CONST	TE	153.99	154.25	RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					2005 PROJECT IN PREVIOUS PBA
N104085	SOUTH OF JACKSON	TE	150.00	150.00	SNOW SUPPORTING STRUCTURES	SAFETY	X					
N131053	RKSP-PINE/I80 NORTH	SW	1.62	4.68	MILL, OVERLAY, PMWC, ADA	RESTORATION OR RESURFACING	X					
P171021	FLMG-UTAH/I-80 SO	SW	500.00	503.00	WIDEN/OVERLAY/ISO-RECON	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO, YBCU			2007 PROJECT IN PREVIOUS PBA
0C12044	LN CO/DIAM/CONROY #EQR	LN	0.00	0.00	STRUCTURE REPLACEMENT	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			2008 PROJECT IN PREVIOUS PBA
0C23039	SB CO/GRRV #ENC/05	SB	0.00	0.00	STRUCTURE REPLACEMENT	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					
B003069	GRRV/WILKES & 2ND SO	SW	0.00	0.00	PAVEMENT REHABILITATION	RESTORATION OR RESURFACING	X					
N103101	SMOOT-AFTON/AFTON SO/PATHWAY	LN	82.10	84.22	PEDESTRIAN/BIKE PATH	ENVIRONMENTAL-ONLY PROJECT		X	ULTO, YBCU, CALY, GRBE			

TRANSPORTATION DISTRICT 3
FY 2014

PROJECT ID	DESCRIPTION	CNTY	BEGIN RM	END RM	TYPE OF IMPROVEMENT	PROJECT CATEGORY	EFFECT		DETERMINATION			NOTES
							NO	MAY	NLAA	LAA		
N103103	THAY-ALPN/ETNA NORTH	LN	107.88	117.34	WIDEN TO 5 LANES	RECONSTRUCTION WITH ADDED CAPACITY		X	YBCU, ULTO			
NI21105	COKE/IDAH-COKE	LN	0.00	10.35	RESURFACE	RESTORATION OR RESURFACING	X					
1804005	BLDR-BGSD/BLDR EAST/WYO 353	SB	0.00	15.51	OVERLAY & CHIP SEAL	RESTORATION OR RESURFACING	X					
2101011	ROBT RD/WYO 410	UI	3.86	10.50	WIDEN & OVERLAY/ISO-RECON	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO, YBCU			
2104001	MILB ROAD/WYO 411	UI	0.00	4.04	WIDEN & OVERLAY/ISO-RECON	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO, YBCU			

TRANSPORTATION DISTRICT 4
FY 2010

PROJECT ID	DESCRIPTION	CNTY	BEGIN RM	END RM	TYPE OF PROJECT	PROJECT CATEGORY	EFFECT		DETERMINATION			NOTES
							NO	MAY	NLAA	LAA		
0300044	GILL-PINETREE/WYO 50	CL	2.93	9.72	MILL/BASE REPAIR/OVERLAY	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					
0300045	GILL-PINETREE/WYO 50	CL	9.80	15.10	MILL/BASE REPAIR/OVERLAY	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					
1701012	SHER/LOUCKS/HIGHLAND-WUL	SH	0.77	1.90	TURN LANES	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					2008 PROJECT IN PREVIOUS PBA
1902117	BUFF-GILL	JO	59.40	69.80	MICROSURFACING	RESTORATION OR RESURFACING	X					
N362034	US 16/TENS-BUFF	JO	88.54	91.96	MILL, LEVELING & OVERLAY	RESTORATION OR RESURFACING	X					
N372037	US 14/BURG-DAYT	SH	71.018	77.32	ROTOMILL & OVERLAY	RESTORATION OR RESURFACING	X					
N442071	UPTON-NEWC/OVRLY/233	WE	233.29	241.00	OVERLAY	RESTORATION OR RESURFACING	X					
N854071	US 85/MULE CR JCT-NEWC	NI	196.00	202.60	MILL/OVERLAY	RESTORATION OR RESURFACING	X					
N855046	NEWC-4CRN	WE	238.10	247.64	MILL/OVERLAY	RESTORATION OR RESURFACING	X					
P601023	SHER/MAIN NO SEC/PAV	SH	21.65	22.90	RESURFACE/STRUCTURE	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					2009 PROJECT IN PREVIOUS PBA
0C17045	CL CO/BNSF/ HOADLEY RD/05	CL	0.00	0.00	PHASE I PE/BR REHABILITATION	RESTORATION OR RESURFACING	X					
B104012	DIST 4/GUARDRAIL REPLACEMENT	WE	0.00	0.00	GUARDRAIL REPLACEMENT	SAFETY	X					
CN03030	SH CO/CO RD 161/ULM ROAD	SH	0.00	0.00	CIRCUITRY UPGRADE	SAFETY	X					
P601A01	ARS/SHER/MAIN NO SEC/P601023	SH	21.65	22.90	RESURF/STRUCTURE	RESTORATION OR RESURFACING	X					
P601024	SHER/MAIN NO SEC/ADA	SH	21.65	22.97	SIDEWALKS/ADA	ENVIRONMENTAL-ONLY PROJECT	X					2009 PROJECT IN PREVIOUS PBA

TRANSPORTATION DISTRICT 4
FY 2011

PROJECT ID	DESCRIPTION	CNTY	BEGIN RM	END RM	TYPE OF PROJECT	PROJECT CATEGORY	EFFECT		DETERMINATION			NOTES
							NO	MAY	NLAA	LAA		
0007162	GILL STS/WY50 & US14/16	CL	1.33	3.05	RECONSTRUCTION/ADD LANES/BR	RECONSTRUCTION WITH ADDED CAPACITY		X	ULTO			
0901094	SHER-BUFF/MARSHALL HILL	SH	28.32	33.60	RESURFACE	RESTORATION OR RESURFACING	X					
1004008	US 16/BUFF-UCRS	JO	2.20	7.40	OVERLAY	RESTORATION OR RESURFACING	X					
1701014	SHER-BECK	SH	0.85	4.00	REPLACE RIGHT OF WAY FENCE	SAFETY	X					
1703010	BGHN SO	SH	3.60	9.71	REPLACE RIGHT OF WAY FENCE	SAFETY	X					
I255111	BUFF SOUTH	JO	293.83	300.54	REPLACE RIGHT OF WAY FENCE	SAFETY	X					
N255040	NEWC-4CRN/FLY V	WE	236.80	238.10	SLIDE REPAIR/RD REALIGNMENT	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			2006 PROJECT IN PREVIOUS PBA
W330006	SHER STS/5TH ST/PATHWAY	SH	0.19	0.19	BIKE PATH RECONSTRUCTION	ENVIRONMENTAL-ONLY PROJECT	X					
P621013	GILL STS/WY-51andGARNER LK RD	CL	126.22	127.57	PATHWAY	ENVIRONMENTAL-ONLY PROJECT	X					
4405003	SHER/LEWIS ST/BIG GOOSE CR	SH	0.00	0.00	STRUCTURE REPLACEMENT	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			2007 PROJECT IN PREVIOUS PBA
4405004	SHER/LEWIS STR PATH	SH	0.00	0.00	BIKE PATH	ENVIRONMENTAL-ONLY PROJECT	X					

TRANSPORTATION DISTRICT 4
FY 2012

PROJECT ID	DESCRIPTION	CNTY	BEGIN RM	END RM	TYPE OF PROJECT	PROJECT CATEGORY	EFFECT		DETERMINATION			NOTES
							NO	MAY	NLAA	LAA		
0255098	KAYC-BUFF/MDL FK INT SEC	JO	279.80	289.56	WIDEN & RESURFACE	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			2008 PROJECT IN PREVIOUS PBA
0302083	CLER NORTH/US 14	SH	38.00	39.10	RIGHT OF WAY FENCE	SAFETY	X					
0302084	ARVD WEST/US 14	SH	44.40	46.00	INSTALL NEW RIGHT OF WAY FENCE	SAFETY	X					

0600016	SUND-UPTON/CO LN SO	WE	16.46	22.51	WIDEN & OVERLAY	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			2008 PROJECT IN PREVIOUS PBA
0604013	HULT-MONT/HULT NO	CR	0.00	7.62	WIDEN & RESURF W/ ISO-RECONST	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			
1709012	PKMN-DAYT	SH	0.00	5.24	REPLACE RIGHT OF WAY FENCE	SAFETY	X					
P433035	GILL-MONT/WESTON SEC	CL	142.00	148.57	RECONSTRUCTION/4R	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			2008 PROJECT IN PREVOUS PBA
4442002	SHER STS/SCOTT ST	SH	0.00	0.00	NEW CONSTRUCTION	NEW CONSTRUCTION		X	ULTO			

TRANSPORTATION DISTRICT 4
FY 2013

PROJECT ID	DESCRIPTION	CNTY	BEGIN RM	END RM	TYPE OF PROJECT	PROJECT CATEGORY	EFFECT		DETERMINATION (species)			NOTES
							NO	MAY	NLAA	LAA		
0601048	DVLT-HULT/HULT S/OVRLY	CR	9.50	16.90	RESTORATION & REHABILITATION	RESTORATION OR RESURFACING	X					
0302068	UCRS-GILL/CL CO LN E	CL	60.17	69.60	WIDEN & OVERLAY/ORAINAGE+/3R	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			2009 PROJECT IN PREVIOUS PBA
N442061	NEWC-SDAK/NEWC E	WE	250.88	259.08	GRADING	SAFETY		X	ULTO			

TRANSPORTATION DISTRICT 4
FY 2014

PROJECT ID	DESCRIPTION	CNTY	BEGIN RM	END RM	TYPE OF PROJECT	PROJECT CATEGORY	EFFECT		DETERMINATION			NOTES
							NO	MAY	NLAA	LAA		
0303018	GILL-MOOR/WYODAK E&W	CL	131.63	136.57	WIDEN & RESURFACE	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					2008 PROJECT IN PREVIOUS PBA
0600020	SUND-UPTON/CO LN NO	CR	11.35	16.46	WIDEN & OVERLAY	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			
0902113	BUFF-GILL/DEAD HORSE SEC	JO	84.43	96.01	MILL & OVERLAY	RESTORATION OR RESURFACING		X	ULTO			2008 PROJECT IN PREVIOUS PBA
0303019	GILL/WY-51/PATHWAY	CL	128.50	129.50	PATHWAY	ENVIRONMENTAL-ONLY PROJECT	X					2008 PROJECT IN PREVIOUS PBA

TRANSPORTATION DISTRICT 5
FY 2010

PROJECT ID	DESCRIPTION	CNTY	BEGIN RM	END RM	TYPE OF PROJECT	PROJECT CATEGORY	EFFECT		DETERMINATION			NOTES
							NO	MAY	NLAA	LAA		
N203055	RIVE ST/WY789/FEDERL/PARK INTS	FR	105.31	105.31	PHS 1/REPLACE SIGNAL	SAFETY	X					
N203062	RIVE-SHOS/HONOR FARM RD/US 26	FR	107.11	107.11	INTERSECTION LIGHTING	SAFETY	X					
B095004	DIST 5/SLOPE FLAT/GR UPGRD/09	BH	0.00	0.00	SLOPE FLATTENING/GRL UPGRADE	SAFETY	X					
B095012	DIST 5/VAR LOC/BRIDGE REHAB	BH	185.05	185.05	BRIDGE REHAB	RESTORATION OR RESURFACING	X					
B155001	DIST 5/VAR LOC/GUARDRAIL	PA	1.00	3.00	GUARDRAIL UPGRADE	SAFETY	X					
N203045	RIVE-SHOS/BRYANT	FR	109.10	111.70	ISO-RECONSTRUCTION/WIDEN	RECONSTRUCTION WITH ADDED CAPACITY		X	ULTO			2007 PROJECT IN PREVIOUS PBA
N203056	RIVE-SHOSI/BRYANT SEC #2/5 LNS	FR	111.70	114.93	ISO-RECONSTRUCTION/WIDEN	RECONSTRUCTION WITH ADDED CAPACITY		X	ULTO			
N291059	CODY-POWL/CODY NE/PHS 2	PA	7.48	10.28	RECONSTRUCTION/5LANE	RECONSTRUCTION WITH ADDED CAPACITY		X	ULTO			
N301024	MRAN JCT-DUBO/TOG PASS/SLIDE	TE	7.83	14.47	SLIDE MITIGATION	SAFETY		X	CALY, CALY (CH), GRWO, GRBE			
N303050	RIVE STS/HILL ST/MAJOR AVE	FR	131.15	131.15	SIGNAL STUDY	SAFETY	X					
N342041	SHOS-TMOP/BOYSEN SECT	FR	112.90	116.17	LEVEL/OVERLAY/GUARDRAIL REPAIR	RESTORATION OR RESURFACING	X					
N343041	CANYON-NORTH KIRBY	HS	128.00	144.59	DEER DELINEATORS	SAFETY	X					
N343037	TMOP-WORL/LUCERNE SECT	HS	133.20	142.00	LEVEL & OVERLAY	RESTORATION OR RESURFACING	X					
6598036	CODY STS/SHER AVE/29TH-35TH ST	PA	0.00	0.00	RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					
CN10093	FR CO/CR #334/17 MRD/WEST SEC	FR	0.00	0.00	RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			
P142043	S PASS SNOW FENCE	FR	24.41	68.20	INSTALL SNOW FENCE	SAFETY		X	ULTO, CALY, GRBE			

TRANSPORTATION DISTRICT 5
FY 2011

PROJECT ID	DESCRIPTION	CNTY	BEGIN RM	END RM	TYPE OF PROJECT	PROJECT CATEGORY	EFFECT		DETERMINATION			NOTES
							NO	MAY	NLAA	LAA		
0201016	MAND-HYAT	BH	0.00	1.01	LEVEL/OVERLAY/CHIP SEAL	RESTORATION OR RESURFACING	X					
N202066	LAND SOUTH/STOCKPASS	FR	76.83	76.83	STOCKPASS REPLACEMENT	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					
N291060	POWL-BH CO LINE	PA	24.76	29.57	LEVEL/OVERLAY/CHIP SEAL	RESTORATION OR RESURFACING	X					
N341103	WTMN-SHOS	NA	50.00	68.35	REPLACE R/W FENCE	SAFETY	X					
N342039	SHOS-TMOP/WIND RIVER CANYON	FR	116.40	127.74	SLOPE RETENTION	SAFETY	X					
N342042	MNTA-SHOS	FR	79.40	90.40	LEVEL/OVERLAY/CHIP SEAL	RESTORATION OR RESURFACING	X					
N345081	LOVL/MAIN STR	BH	236.25	237.43	REHABILITATION	RESTORATION OR RESURFACING	X					
N345096	WORL-MAND	BH	185.10	191.16	LEVEL/CHIP SEAL	RESTORATION OR RESURFACING	X					
N345097	WORL-BASIN	BH	191.19	195.00	LEVEL/CHIP SEAL	RESTORATION OR RESURFACING	X					
N361061	WORL-TENS/SLICK CR SECT	WA	4.84	8.06	RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO, BFF			
P142042	FARS-LAND/WY28/RED CNYN/ERSON	FR	59.00	59.52	RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					
B115025	DIST 5/SLOPE FLAT/GR UPGRD	FR	0.00	0.00	SLOPE FLATTENING	SAFETY	X					
CN11064	PA CO./CO RD 11	PA	0.00	0.00	SURFACING	RESTORATION OR RESURFACING	X					

TRANSPORTATION DISTRICT 5
FY 2012

PROJECT ID	DESCRIPTION	CNTY	BEGIN RM	END RM	TYPE OF PROJECT	PROJECT CATEGORY	EFFECT		DETERMINATION			NOTES
							NO	MAY	NLAA	LAA		
0202012	LOVL-EMBL/LOVL SW	BH	0.00	2.89	WIDEN & OVERLAY	RECONSTRUCTION WITHOUT ADDED CAPACITY	X					2006 PROJECT IN PREVIOUS PBA

1502012	CODY-MT STATE LINE	PA	109.10	115.00	LEVEL/OVERLAY/CHIP SEAL	RESTORATION OR RESURFACING	X					
N301015	MRAN-DUBO/ROSIES RDGE/RECONST	TE	7.83	14.47	RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	CALY, CALY (CH), GRWO, GRBE			BO COMPLETE, BUT CALY (CH) NOT INCLUDED

TRANSPORTATION DISTRICT 5
FY 2013

PROJECT ID	DESCRIPTION	CNTY	BEGIN RM	END RM	TYPE OF PROJECT	PROJECT CATEGORY	EFFECT		DETERMINATION			NOTES
							NO	MAY	NLAA	LAA		
0703011	ETHT/ETHT SO	FR	0.00	6.98	RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			2008 PROJECT IN PREVIOUS PBA. Field check may change to No Effect
0703013	ETHT/ETHT SO/MILL CR	FR	0.30	0.30	BRIDGE REPLACEMENT	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			2008 PROJECT IN PREVIOUS PBA
N202052	MUDG-LAND/BEAVER CR SEC #1	FR	55.00	59.58	OVERLAY W/ ISO-RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			2009 PROJECT IN PREVIOUS PBA
N291054	CODY-POWL/CODY E/PHASE #1/SPLIT	PA	4.16	5.49	RECONSTRUCTION	RECONSTRUCTION WITH ADDED CAPACITY		X	ULTO			
N345098	GREY-LOVL	BH	209.03	211.65	LEVEL/OVERLAY/CHIP SEAL	RESTORATION OR RESURFACING	X					
N345099	GREY-LOVL	BH	221.00	225.40	LEVEL/OVERLAY/CHIP SEAL	RESTORATION OR RESURFACING	X					
N361056	WORL-TENS/TENS W	WA	24.20	26.76	CSA/WIDEN & ISO-RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			2008 PROJECT IN PREVIOUS PBA
4501003	RIVE STS/RIVERVIEW ROAD	FR	0.00	0.00	RECONSTRUCTION	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			Field check may change to No Effect
4501A01	ARS/RIVE STS RIVERVIEW/4501003	FR	0.00	0.00	ARS FOR UTILITY ADJUSTMENT	ENVIRONMENTAL-ONLY PROJECT	X					
N361A01	ARS/WORL-TENS/TENS W/N361056	WA	24.20	26.76	ARS/CSA/WIDEN & ISO RECONST	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			

TRANSPORTATION DISTRICT 5
FY 2014

PROJECT ID	DESCRIPTION	CNTY	BEGIN RM	END RM	TYPE OF PROJECT	PROJECT CATEGORY	EFFECT		DETERMINATION			NOTES
							NO	MAY	NLAA	LAA		
N151023	LAND-FTWK	FR	2.00	10.00	LEVEL/OVERLAY/CHIP SEAL	RESTORATION OR RESURFACING	X					

N203052	HUDS-RIVE/RIVE SOUTH SECT	FR	101.00	104.18	WIDEN & RESURFACING	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			
N345094	GREY-LOVL/LTL DRY CRK	BH	211.65	216.00	WIDEN & OVERLAY	RECONSTRUCTION WITHOUT ADDED CAPACITY		X	ULTO			Field check may change to No Effect
N291061	CODY-POWL/CODY E PHASE #2/SPLIT	PA	2.20	4.16	RECONSTRUCTION	RECONSTRUCTION WITH ADDED CAPACITY		X	ULTO			
B145005	DIST 5/SLOPE FLAT/GR UPGRD	BH	0.00	0.00	SLOPE FLATTENING BASIN SOUTH	SAFETY	X					