



**APPENDIX A:**

---

**TECHNICAL MEMORANDA**





## Technical Memorandum Farmlands

---

### EXISTING FARMLANDS

The Farmland Protection Policy Act of 1981 protects land identified as Prime farmland, Unique farmland, and land (other than prime or unique) of statewide or local importance, as identified by the US Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). The purpose of this act is to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. It also assures that federal programs are administered in a manner that, to the extent practicable, will be compatible with government and private programs and policies to protect farmland.

Prime Farmland is defined as soil that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion. Unique farmland includes land that possesses the above characteristics, but is being used to produce livestock and timber. It does not include land already in or committed to urban development or water storage.

The NRCS field office in Grand Junction was contacted to determine soil types in the study corridor. All geographic and farmland classification data are available through the Soil Survey Geographic (SSURGO) Database. This annually updated database provides all soil classifications, including Prime, Unique, Statewide, and Local. SSURGO data show that there are eight different soil types in the study corridor. The I-70B West study area (shown on **Figure 1**, attached) was used to determine acreage of farmlands present in the study corridor; that area is approximately 125 acres in size. The study corridor ranges in width from 150 feet in the northern section, to between 365 and 580 feet in the major intersection areas, to 375 feet in the Ute/Pitkin section, and is approximately four miles long.

Of all the soil types identified in the study corridor, two are classified as Prime Farmland if Irrigated (totaling approximately 13 acres), and one soil type is classified as Prime Farmland if Irrigated and Drained (approximately 30 acres). All of the Prime Farmland if Irrigated and Drained soil, and approximately 3 acres of the Prime Farmland if Irrigated soil in the study corridor fall within the 2000 Census urban area boundary. The remaining 10 acres of soil classified as Prime Farmland if Irrigated is fully developed and is not irrigated.



**Table F-1** lists the protected soils identified in the study corridor. If an area is developed or is planned for development, it is not considered farmland of Prime or Local Importance.

Because the soils listed in **Table F-1** classified as Prime Farmland if Irrigated or Prime Farmland if Irrigated and Drained either fall within the 2000 Census urban area boundary or are fully developed and not irrigated, they are not considered Prime or Unique Farmland. Therefore, no Prime or Unique Farmlands are located within the study corridor.

**Table F-1**  
**Protected Soils Located Within the Study Corridor**

<b>Soil Type</b>	<b>Type of Farmland</b>	<b>Acres*</b>
Sagers Silty Clay Loam, 0 to 2 percent Slopes	Prime Farmland if Irrigated	10
Green River silty clay loam, 0 to 2 percent slopes	Prime Farmland if Irrigated	3
Green River clay loam, 0 to 2 percent slopes	Prime Farmland if Irrigated and Drained	30
<b>Total</b>		<b>43</b>

Source: Natural Resource Conservation Service, Soil Survey Geographic Data (SSURGO), 2006.

\*Acreage rounded to nearest whole number.

### **FARMLAND IMPACTS**

Because no Prime or Unique Farmlands are located within the study corridor, no impacts would occur.

### **FARMLAND MITIGATION**

Because no Prime or Unique Farmlands are impacted, no mitigation is necessary.

### **COORDINATION**

A letter was sent to the NRCS on October 16, 2006 documenting the results of the farmland analysis, stating that no protected soils are located within the study corridor and requesting concurrence. The NRCS concurred that there would be no impact to prime and important soils in the study area in a letter dated February 15, 2007. This correspondence is attached.



707 17th Street, Suite 2300  
 Denver, CO 80202  
 Phone: 303.820.5240  
 Fax: 303.820.2402  
 www.c-b.com

October 16, 2006

Mr. James E. Currier  
 District Conservationist  
 US Department of Agriculture  
 Natural Resource Conservation Service  
 2738 Crossroads Boulevard., Suite 102  
 Grand Junction, Colorado 81506

**Re: I-70 B West Environmental Assessment**

Dear Mr. Currier:

Carter & Burgess is providing environmental consulting services for transportation improvements on I-70B from 24 Road to 15<sup>th</sup> Street in Grand Junction, Colorado. We are currently compiling the necessary documentation to prepare an Environmental Assessment for the project.

We have downloaded soil data for Mesa County from the NRCS Soil Data Mart. This data indicates the presence of three soil types in the study corridor that could potentially qualify as Prime Farmland. These soils are:

Soil	Farmland Type	Acreage that Falls Within the Study Corridor
Bc - Sagers Silty Clay Loam, 0 to 2 percent Slopes	Prime Farmland if Irrigated	10.16
Be – Green River silty clay loam, 0 to 2 percent slopes	Prime farmland if Irrigated	2.68
Gm – Green River clay loam, 0 to 2 percent slopes	Prime farmland if Irrigated and Drained	30.38

*Source: Natural Resource Conservation Service, Soil Survey Geographic Data (SSURGO), 2006.*

Further analysis indicates that the majority of the study corridor is located within the boundaries of a 2000 Census Urbanized Area. According to the FPPA, lands within a 2000 Census Urbanized Area are not considered “farmland.” Soils in the remaining portion of the study corridor are classified as “Prime Farmland if Irrigated” and “Prime if Irrigated and Drained.” However, these soils lie beneath land that is completely developed and urban in nature (big box retail and commercial development) and will not be irrigated. According to the FPPA, land already in or committed to urban development is also not considered “farmland.”

*For these reasons we find that there are no protected soils within our study corridor and that no further coordination with your offices will be required.*

The purpose of this letter is to request your concurrence with the above statement. We would greatly appreciate a written response from you within 30 days of your receipt of this letter. A map of the study corridor showing the boundaries of the 2000 Census Urbanized Area and the location of the soils is attached for your review.

Mr. James E. Currier  
October 16, 2006  
Page 2

Thank you for your assistance. If you have any questions or require additional information, please contact me at 303-820-5267.

Sincerely,

Misty McCoy  
Environmental Planner

Attachment

cc: Craig Gaskill  
Tracey MacDonald  
File 072191

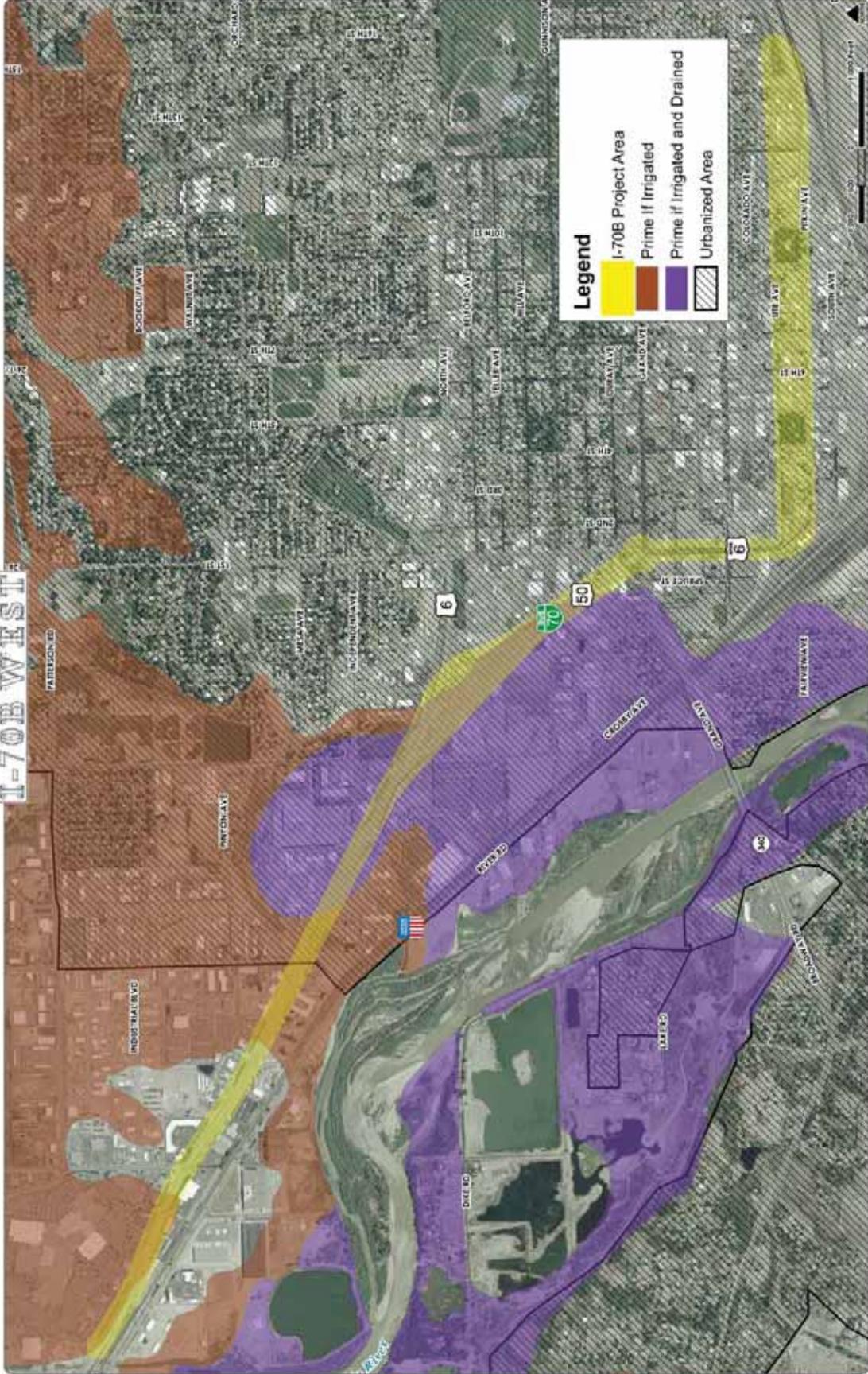


Figure 1: Study corridor





Natural Resources Conservation Service  
2738 Crossroads Blvd., Suite 102  
Grand Junction, CO 81506-3933

---

February 15, 2007

Carter-Burgess  
Attn: Misty McCoy  
707 17<sup>th</sup> Street  
Denver, CO 80202

The NRCS has reviewed the soils and descriptions for the area of construction planned on I-70 Bus. Loop. There are some soil units mapped as prime in this location. However, no loss of cropland or other agricultural values will be lost due to construction or development activities in this area, as there is no agricultural operation conducted in this area. Therefore, there is no impact to prime and important soils as this area has previously been converted from agriculture to other uses.

A handwritten signature in black ink, appearing to read "E. James Currier".

E. James Currier  
District Conservationist  
Grand Junction

*Helping People Help the Land*

An Equal Opportunity Provider and Employer







## Technical Memorandum Threatened, Endangered and Sensitive Species

---

Animal and plant species that are determined by the U.S. Fish and Wildlife Service (USFWS) to be threatened or endangered are protected under the Endangered Species Act (ESA) of 1973 (as amended 16 U.S.C. 1531 et seq.). Under the ESA, the term “endangered species” is defined as a species in danger of extinction throughout all or a significant portion of its range; and “threatened species” are likely to become endangered species in the foreseeable future throughout all or a significant portion of their range. Significant adverse effects to a federally listed species or its habitat require consultation with the USFWS under Section 7 of the ESA.

Sensitive Species include “State Listed Species” and “State Species of Special Concern.” State Listed Species are species the Colorado Division of Wildlife considers threatened or endangered within the state of Colorado. Colorado State statute 33-2-105 states that, “...it is unlawful for any person to take, possess, transport, export, process, sell or offer for sale, or ship and for any common or contract carrier to knowingly transport or receive for shipment any species or subspecies of wildlife appearing on the list of wildlife indigenous to this state determined to be endangered or threatened within the state...” Although not tied to a statutory category, State Species of Special Concern include state rare species identified by the Colorado Natural Heritage Program (CNHP) natural heritage database as declining in all portions of their ranges. CNHP tracks and ranks Colorado’s rare and imperiled species and habitats and provides information and expertise to promote the conservation of Colorado’s valuable biological resources. Data for federal and state threatened, endangered, candidate or species of special concern potentially occurring within the study area were gathered from species list provided by USFWS, Colorado Division of Wildlife (CDOW), and CNHP.

### Existing Conditions

Populations of the following federally listed threatened or endangered species were listed as potentially occurring in Mesa County:

**Razorback Sucker**—The razorback sucker, a fish endemic to the Colorado River Basin of the southwestern United States, is listed as endangered under the ESA and state endangered for Colorado. The critical habitat for this species includes the Colorado River and its 100-year floodplain from Rifle, Colorado to Lake Powell. The Colorado River is outside of the study area, and project construction is not anticipated to result in water depletions to the Colorado River.



**Colorado Pikeminnow**—The Colorado pikeminnow, a fish that is endemic to the Colorado River Basin of the southwestern United States, is listed as endangered under the ESA and is a state threatened species for Colorado. The critical habitat for the Colorado pikeminnow includes the Colorado River and its 100-year floodplain from Rifle, Colorado to Lake Powell. The Colorado River and its floodplain are outside of the study area, and project construction is not anticipated to result in water depletions to the Colorado River.

**Humpback Chub**—The humpback chub, endemic to the Colorado River Basin of the southwestern United States, is listed as endangered under the ESA and is a state threatened species for Colorado. The study area and the nearby reach of the Colorado River are not designated as critical habitat for this species.

**Bonytail**—The bonytail, the rarest native fish in the Colorado River Basin, is listed as endangered under the ESA and is a state endangered species for Colorado. The Colorado River south of the study area is not designated as critical habitat for this species. The Colorado River is outside of the study area, and project construction is not anticipated to result in water depletions.

**Canada lynx**—The Canada lynx is currently listed as a federally threatened species with protection under the ESA and a state endangered species for Colorado. Habitat for the Canada lynx is dense sub-alpine forest and mountain stream corridors and avalanche chutes densely vegetated with willows, areas which are also habitat for its favored prey species, the snowshoe hare. Lynx tend to avoid areas of human habitation. No habitat for this species is present in the study area, and no proposed critical habitat units are present in the state of Colorado.

**Yellow-Billed Cuckoo**—The yellow-billed cuckoo is a federal candidate species for listing under the ESA, and a state species of special concern for Colorado. This species is a songbird that depends on old-growth riparian woodlands with dense understories for its habitat. Large willow carr stands are primary indicators of suitable cuckoo habitat in an area. Based on the lack of old growth riparian woodlands and large willow stands, no suitable cuckoo habitat exists within the study area.

**Unita Basin Hookless Cactus**—The Unita Basin hookless cactus, endemic to desert shrub communities in western Colorado and the Unita Basin of Utah, is listed as Threatened under the ESA. This species occurs in desert shrub communities dominated by shadscale, galleta, black-sage, and Indian rice grass. This plant community does not occur in the study area, and the study area is not designated as critical habitat for this species.

**De Beque Phacelia**—The De Beque phacelia, a western Colorado endemic, is a flowering mat plant which occurs on steep, sparsely vegetated slopes of the Atwell Gulch and Shire Members of the Wasatch Formation. This species is listed as a



Candidate species. Since these rock formations do not occur in the study area, no habitat for this species is present in the study area.

### **State Listed Species**

**Bald Eagle**—Formerly listed as a federally endangered species, the bald eagle has been delisted and removed from the endangered species list, and now is currently listed as state threatened wildlife species. Bald eagles are reported to move through the area along the Colorado River south of the study area. No designated critical or essential eagle habitat occurs in the study area, and no suitable winter night roost sites or nest sites occur in the study area.

**Boreal Toad** – The boreal toad is a state endangered species that typically lives at elevations between 8,500 – 11,500 feet in or near marshes, wet meadows, streams, beaver ponds, glacial kettle ponds, and lakes of subalpine forests. No habitat for this species is present in the study area.

**Burrowing Owl** - The burrowing owl is a small migratory owl that occupies prairie dog towns in Colorado during the summer breeding season. The owl is active during the day and uses abandoned prairie dog burrows for nesting and roosting. The burrowing owl has been listed as threatened by the state of Colorado and is protected under the Migratory Bird Treaty Act, which prohibits the killing of burrowing owls. Since no prairie dog towns are in the study area, this species would not occur in the study area.

### **State Species of Special Concern**

Populations of the following state species of special concern potentially occur in Mesa County:

**Ferruginous Hawk**—The ferruginous hawk, the largest hawk in North America, is a State Species of Special Concern and protected under the Migratory Bird Treaty Act. The ferruginous hawk is very rare in Mesa County and not anticipated to occur in the urbanized study area.

**Peregrine Falcon**—The American peregrine falcon has recently been removed from both the state of Colorado and federal endangered species lists. This bird is a State Species of Special Concern and protected under the Migratory Bird Treaty Act. Peregrines nest on high steep cliffs generally along stream courses. The study area and the adjacent reach of the Colorado River lack the steep cliff habitat that could support nesting by peregrine falcons. Peregrines may occasionally forage in the area.

**Greater Sandhill Crane** -The greater sandhill crane is listed as a species of special concern in the state of Colorado and is protected under the Migratory Bird Treaty Act. Primary habitat for the sandhill crane is in mudflats around reservoirs, agricultural areas,



and moist meadows. Nesting sites are found in shallow marsh areas. Based on lack of suitable habitat, it is not anticipated that this species occurs within the study area.

**Mountain Plover** – Mountain plovers are typically found in prairie grasslands, arid plains, and fields. Nesting grounds typically occur in shortgrass prairies grazed by cattle and prairie dogs, and overgrazed tallgrass and fallow fields. Based on lack of suitable habitat, it is not anticipated that that this species occurs within the study area.

**Long-Billed Curlew** – This species is typically found in short-grass grasslands and fallow fields and, nests are normally located close to standing water. The curlew is a local summer resident of the southeastern plains and is only seen during accidental/migration stops when traveling over Colorado. Based on lack of suitable habitat, it is not anticipated that that this species occurs within the study area.

**Townsend's Big-eared Bat** – This western bat species is typically found occupying semidesert shrublands, piñon-juniper woodlands, and open montane forests. Based on lack of suitable habitat, it is not anticipated that that this species occurs within the study area.

**Botta's Pocket Gopher** – The Botta's pocket gophers occur in southern Colorado, where several local species have evolved. This species can be found in a variety of vegetation types, including agricultural, grassland, along roadsides, parks, piñon-juniper woodlands, open montane forest, montane shrublands, and semidesert shrublands. Based on the project location in a highly urbanized area and lack of suitable habitat, it is not anticipated that that this species occurs within the study area.

**Northern Pocket Gopher** – Northern pocket gophers are common in a variety of vegetation types above approximately 5,000 feet in elevation, including agricultural, grassland, along roadsides, parks, piñon-juniper woodlands, open montane forest, montane shrublands, and semidesert shrublands habitats. Since the study area is below the typical elevation range, this species is not anticipated to occur on site.

**Longnose Leopard Lizard** – This species occurs in west-central Colorado and extreme southwestern Colorado at elevations below about 5,200 feet. Primary habitat for the lizard is found on flat or gently sloping shrublands with a large percentage of open ground. Based on the project location in a highly urbanized area and lack of suitable habitat, it is not anticipated that that this species occurs within the study area.

## **Environmental Consequences**

### **No Action Alternative**

The No Action Alternative would not affect threatened or endangered or other sensitive species within the study area.



### **Preferred Alternative**

Federally threatened, endangered, or candidate species, state threatened and endangered species, and state species of special concern would not be affected by the Preferred Alternative for I-70B because these species are not present or unlikely to occur in the study area because of the lack of suitable habitat and the urban nature of the area. Furthermore, improvements as part of the Preferred Alternative mostly occur within existing right-of-way.

### **Threatened, Endangered, and Sensitive Species Mitigation Measures**

No mitigation measures are required. CDOT BMP's and revegetation guidelines would be employed to minimize impacts associated with vegetation removal. Water utilized for construction and/or irrigation will be derived through municipal sources. Therefore, allocation will not exceed the upper Colorado River Basin threshold and there would be no impacts to the Colorado River resulting in impacts to any threatened or endangered species.





## **Technical Memorandum Wildlife and Fisheries**

---

### **Existing Conditions**

A survey was conducted during fall 2006 to determine the presence of wildlife within the I-70B West study area. Preparation for the survey included analysis of topographical maps of the area and a review of information pertaining to general wildlife and fisheries endangered, threatened, sensitive and rare wildlife, fish, amphibian and plant species. Data were reviewed from the Colorado Division of Wildlife (CDOW, 2006), the Natural Diversity Information System (NDIS 2006), and the US Fish and Wildlife Service (USFWS, 2006). Field reconnaissance was completed in August/September 2006 to identify and address any potential wildlife issues associated with the project.

The I-70B West study area is located within a highly developed, urbanized area with few resources available for wildlife species and populations. Primary wildlife habitat and resources are provided by two small park areas (Whitman and Emerson Parks) near the east end of the study area and the CDOW maintained Westlake State Wildlife Area located on the north side of I-70B between Rimrock Avenue and Motor Street. Water bodies near the project area that may provide fisheries habitat include the Colorado River, Leach Creek, Ligraini Drain, and a CDOW maintained pond at Westlake State Wildlife Area. All other wildlife habitat in the study area is severely fragmented by existing roadways and development, and it can be assumed that current wildlife inhabitants have adapted for these living conditions.

### **General Wildlife and Fish**

Since the study area is comprised of retail, light industrial, residential and commercial uses, wildlife species are those highly habituated to human presence. General wildlife species potentially occurring within project boundaries include raccoons, squirrels, voles, coyotes, red foxes, cottontail rabbits, muskrat, and mice. White-tailed prairie dogs are present in fields west of the study area. Birds include mallard, duck, turkey vulture, American kestrel, black-chinned humming bird, magpie, crow, raven, house finch, and house sparrow. Herptiles present may include frog, snake, and turtle species, primarily along or within Ligraini drain. Mallards were observed in an area drainage ditch near the Colorado Division of Wildlife Northwest Regional Service Center and Westlake State Wildlife Area just north of I-70B. Birds present at the CDOW pond include Canada geese, great blue heron, and belted king fisher. A muskrat is also resident at the pond.

Fish species include carp, sunfish, rainbow trout, and minnow species. The study area is located in the upper Colorado River basin which consists of the Colorado River and its tributaries upstream from Lake Powell. The river is home to 14 native fish, four of which are listed as threatened or endangered species (for more detail see the Threatened



and Endangered Species Technical Memorandum in Appendix A), and more than 40 non-native fish species. Ligraini Drain and the CDOW maintained fishing pond are the only two waterbodies within the study corridor providing habitat for fish species. Both the Colorado River and Leach Creek are located outside of the study corridor.

Habitat provided by Ligraini Drain is very marginal fish habitat at best due to its shallow depth, high volume of vegetation in-channel, and narrow, linear alignment. Aquatic life associated with Ligraini Drain includes frogs, turtles, snakes, crayfish, and snails with minor occurrence of mallard ducks and muskrat. No fish species were observed in Ligraini Drain at time of survey.

The CDOW maintained pond serves as a recreational fishing facility providing good fisheries habitat for various fish and other aquatic species. Species associated with the CDOW pond may include stocked fish supplied by CDOW, frogs, ducks, muskrat, snakes, turtles, crayfish, and snails.

### **Raptors**

Raptors that may occur in the study area include the golden eagle, northern harrier, prairie falcon, and red-tailed hawk. However, none were observed during the survey.

- ▶ **Golden Eagle** – The Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act both protect golden eagles. No golden eagle nests were observed in or near the study area during August/September site visit. While the study area lacks the cliffs that are typically used for nesting, golden eagles may forage in the study area especially in winter.
- ▶ **Northern Harrier** – Although globally secure, the northern harrier is considered rare in Colorado. This species is a medium-sized raptor that nests and forages over grasslands, agricultural cropland, and wetlands. Although the northern harrier may occasionally forage in the study area, it is unlikely to nest in the study area due to the lack of suitable wetland habitat.
- ▶ **Prairie Falcon** – The prairie falcon typically nests on cliff faces in open country below 10,000 feet. While the study area lacks the cliffs that are typically used for nesting, falcons could occasionally forage in the study area.
- ▶ **Red-tailed Hawk** – the red-tailed hawk inhabits open areas interspersed with patches of trees or other elevated perch sites. Although there are suitable nest trees in the riparian area and adjacent to the study area, no red-tailed hawks were observed during the site visit.



### **Wildlife Impacts**

Removal of vegetation may impact migratory bird nesting areas. The Migratory Bird Permit memorandum issued in April 2003 stipulates that there is no prohibition against destruction of inactive nests as long as breeding season is avoided (approximately April 1 – August 31). Additionally, any disturbance to these nesting areas must follow the stipulations outlined in the Migratory Bird Treaty Act of 1918.

### **No Action Alternative**

The No Action Alternative would generally not affect existing wildlife and fish habitat and resources. However, with increasing traffic and congestion, continued wildlife habitat degradation and loss from human activities and increased runoff into adjacent waterways would be anticipated.

### **Preferred Alternative**

Under the Preferred Alternative, roadway improvements would have minor impacts to the outer edges of Whitman Park located on Ute and Pitkin Avenues between 4<sup>th</sup> and 5<sup>th</sup> Streets by removing two trees within CDOT right-of-way at the northwest and southwest corners of the park.

Due to wildlife inhabitants being adapted to living conditions in this highly urbanized area, impacts due to vegetation removal can be considered temporary and as not having a significant affect on existing wildlife within the study area.

The Colorado River and Leach Creek are located outside of the study corridor and would not be impacted by construction of the Preferred Alternative. Ligraini Drain and the CDOW pond are located within the study corridor, however, neither would receive direct impacts resulting from construction of the Preferred Alternative and no impacts to existing fisheries habitat are expected.

### **Wildlife Mitigation**

- ▶ CDOT BMP's and revegetation guidelines would be employed to minimize impacts associated with vegetation removal from the park and pond areas.
- ▶ To avoid impacts to nesting birds in accordance with the Migratory Bird Treaty Act, all clearing and grubbing of trees and shrubs will be conducted prior to April 1 and after August 31.





## **Technical Memorandum Archaeological Resources**

---

The report, *Interstate-70B West, An Archaeological Resource Inventory*, was prepared by Metcalf Archaeological Consultants, Inc., in March 2007. The inventory for prehistoric and historic archaeological resources within the study area was conducted to satisfy Section 106 requirements prior to proposed modifications to this travel corridor. The study area consists of approximately 102 acres; only 60.5 acres was subjected to an intensive pedestrian inventory because of the heavy urban development along Ute and Pitkin Avenues.

A file search of the Office of Archaeology and Historic Preservation COMPASS system revealed more than 1400 historic structures in the sections containing the study area, but no historic or prehistoric archaeological resources. The archaeological resource inventory for the proposed I-70B improvements yielded no prehistoric or historic archaeological resources; a separate consultant (Hermsen Consultants) addressed the historic structures within the study area. For the prehistoric and historic archaeological resources, Metcalf recommends a finding of no historic properties affected.





## Technical Memorandum Paleontological Resources

---

The report, *Paleontological Technical Report: I-70B West Project*, was prepared by Rocky Mountain Paleontology in January 2007. The paleontological sensitivities of the geologic units within the study area were evaluated by reviewing the scientific literature, geologic mapping and museum records. Based on the geologic mapping of Scott et al. (2002), the study area contains three geologic units. These include, from approximately oldest to youngest, Holocene- and late Pleistocene-age oldest alluvium deposited by the Colorado River, undivided Holocene- and late Pleistocene-age alluvium and colluvium, and modern imported artificial fill. Artificial fill and Holocene-age alluvium and colluvium are too young to contain fossils, and have no paleontological sensitivity. Pleistocene-age alluvium and colluvium are locally fossiliferous in Colorado, but the fossils are typically scattered and poorly preserved, so these deposits have low sensitivity. All these units are classified as Class 2 units according to the Potential Fossil Yield Classification System.

No fossils were discovered during the field survey. No previously recorded fossil localities within the study area are recorded at the Museum of Western Colorado, the University of Colorado Museum or the Denver Museum of Nature and Science, and none were found in the scientific or technical literature. However, the University of Colorado Museum and Denver Museum of Nature and Science have numerous recorded fossil localities from Pleistocene-age surficial deposits in Colorado.

Adverse impacts on significant paleontological resources resulting from construction are unlikely to occur because the construction-related ground disturbance will occur mostly at existing grade, and the study area is underlain by sedimentary deposits that are either too young to contain fossils, or have low sensitivity. It is highly unlikely that bedrock Mancos Shale of late Cretaceous age, which underlies the entire study area at a depth of between 10 feet and 66 feet based on Bureau of Reclamation well logs (Scott et al., 2002), will be impacted by construction. Based on the results of this study, immediate paleontological clearance is recommended. If any sub-surface bones or other potential fossils are found anywhere within the study area during construction, the CDOT Staff Paleontologist should be notified immediately to assess their significance and make further recommendations.

### References

Scott, R.B., Carrara, P.E., Hood, W.C., and Murray, K.E., 2002, Geologic map of the Grand Junction Quadrangle, Mesa County, Colorado: *U.S. Geological Survey Miscellaneous Field Studies Map MF-2363*, 1 sheet (scale 1:24,000) and 20 page pamphlet.

