

APPENDIX N – BIOLOGICAL ASSESSMENT

TEMPLATE BIOLOGICAL ASSESSMENT & REQUEST FOR FORMAL SECTION 7 CONSULTATION

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This letter contains the Biological Assessment (BA) addressing potential impacts from operation of the High Plains Expansion Project on federally-listed species in Nebraska. With this submission, we are requesting initiation of Formal Consultation under Section 7(a) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.)(ESA), concerning the whooping crane (*Grus americana*), interior least tern (*Sternula antillarum*), northern Great Plains population of the piping plover (*Charadrius melodus*), pallid sturgeon (*Scaphirhynchus albus*) (collectively referred to as the target species), and designated critical habitat of the whooping crane. We further request initiation of Formal Consultation for the bald eagle (*Haliaeetus leucocephalus*) and western prairie fringed orchid (*Platanthera praeclara*). We have determined that the Project is not likely to adversely affect the American burying beetle (*Nicrophorus americanus*) and will have no effect on the Eskimo curlew (*Numenius borealis*).

(1) Project Description;

CIG proposes to expand its existing pipeline system in Weld, Adams, and Morgan counties, Colorado. The system would consist of about 163.7 miles of new pipeline, 10 new metering facilities, 12 new pig launchers/receivers, and 18 new block valves. Maps of the proposed Project are provided in Appendix B. A detailed description of construction procedures and impacts are discussed in Sections 1.0 and 2.0 in the main portion of this BA.

(2) Applicant

On April 27, 2007, Colorado Interstate Gas Company (CIG) filed an application with the Federal Energy Regulatory Commission (Commission or FERC) in Docket Number CP07-207-000 under Section 7 of the Natural Gas Act (NGA), as amended, and Part 157 of the Commission's regulations. CIG is seeking a Certificate of Public Convenience and Necessity (Certificate) to construct, own, and operate a new interstate natural gas pipeline system and ancillary facilities in Colorado. The purpose of the proposed Project is to provide additional natural gas transportation service on CIG's system along Colorado's Front Range. CIG states that the need for the proposed Project stems from population growth and a rapidly growing market. However, CIG's transportation capacity is not adequate to meet the increased need for natural gas transportation service. Therefore, CIG has proposed the Project to meet this increased demand for natural gas service.

(3) Project Location

The proposed project is located in Weld, Morgan, and Adams Counties in Colorado. Detailed maps showing the pipeline routes and aboveground facilities are attached.

(4) Federal action (e.g., permit or authorization)

Federal agencies are required by Section 7 of the Endangered Species Act (ESA), as amended, to ensure that any actions authorized, funded, or carried out by the agency do not jeopardize the continued existence of a federally listed endangered or threatened species, or result in the destruction or adverse modification of the designated critical habitat of a federally listed species. The responsible agency, in this case the FERC, is required to consult with the U.S. Fish and Wildlife Service (USFWS) and/or the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) to determine whether federally listed endangered or threatened species or designated critical habitat are found in the vicinity of the proposed project, and to determine the proposed action's potential effects on those species or critical habitats. For actions involving major construction activities with the potential to affect listed species or designated critical habitat, the federal agency must prepare a Biological Assessment (BA) for those species that may be affected.

Operation of this Project will result in some amount of continuing historic and/or new depletions to the South Platte River associated with project construction techniques.

CIG is proposing a one-time use of approximately 29.9 million gallons (92 acre-feet) of water from the South Platte River for horizontal directional drill operations, dust control, trench compaction, and hydrostatically testing the proposed pipelines. About 17.3 million gallons (53 acre-feet) would be obtained at MP 41.2 on Line 250A from surface waters of the South Platte River, and about 12.6 million gallons (39 acre-feet) would be obtained at MP 11.6 on Line 252A from surface waters of the South Platte River (see appropriation location maps below). All water appropriated from the South Platte River would be used and discharged along the construction right-of-way within the South Platte River watershed. CIG is required to follow requirements of the South Platte Water Related Activities Program, Inc. (SPWRAP) and would obtain any necessary authorizations from the State Engineers Office. Additionally, small amounts of water may be appropriated from canals along the pipeline route. The amount that may be appropriated would be determined by local availability and negotiations with landowners and water authorities. CIG would only appropriate water from canals if the necessary negotiations and approvals are obtained.

The Platte River Recovery Implementation Program (PRRIP), established in 2006, is implementing actions designed to assist in the conservation and recovery of the target species and their associated habitats along the central and lower Platte River in Nebraska through a basin-wide cooperative approach agreed to by the States of Colorado, Nebraska, and Wyoming and the U.S. Department of the Interior [Program, I.A.1.]. The Program addresses the adverse

impacts of existing and certain new water related activities on the Platte target species and associated habitats, and provides ESA compliance¹ for effects to the target species and whooping crane critical habitat from such activities including avoidance of any prohibited take of such species. [Program, I.A.2 & footnote 2.]. The State of Colorado is in compliance with its obligations under the Program.

For Federal actions and projects participating in the Program, the Platte River Recovery Implementation Program Final Environmental Impact Statement (FEIS) and the June 16, 2006 programmatic biological opinion (PBO) serve as the description of the environmental baseline and environmental consequences for the effects of the Federal actions on the listed target species, whooping crane critical habitat, and other listed species in the central and lower Platte River addressed in the PBO. These documents are hereby incorporated into this Biological Assessment by this reference.

Table II-1 of the PBO (pages 21-23) contains a list of species and critical habitat in the action area, their status, and the USFWS's determination of the effects of the Federal action analyzed in the PBO. The USFWS determined in the PBO that the continued operation of existing and certain new water-related activities may adversely affect but would not likely jeopardize the continued existence of the endangered whooping crane, interior least tern, and pallid sturgeon, or the threatened northern Great Plains population of the piping plover. Further, the USFWS found that the continued operation of existing and certain new water-related activities may adversely affect but would not likely jeopardize the threatened bald eagle and western prairie fringed orchid associated with the central and lower reaches of the Platte River in Nebraska, and was not likely to destroy or adversely modify designated critical habitat for the whooping crane.

The USFWS also determined that the PBO Federal Action would have no effect to the endangered Eskimo curlew. There has not been a confirmed sighting since 1926 and this species is believed to be extirpated in Nebraska. Lastly, the USFWS determined that the PBO Federal Action, including the continued operation of existing and certain new water-related activities, was not likely to adversely affect the endangered American burying beetle.

The above-described Project operations qualify as a new water related activity because such operations constitute a new surface water or hydrologically connected groundwater activity which may affect the quantity or timing of water reaching the associated habitats of the target species implemented after July 1, 1997. [Program, I.A. footnote 3]. The Project conforms to the

¹ "ESA Compliance" means: (1) serving as the reasonable and prudent alternative to offset the effects of water-related activities that FWS found were likely to cause jeopardy to one or more of the target species or to adversely modify critical habitat before the Program was in place; (2) providing offsetting measures to avoid the likelihood of jeopardy to one or more of the target species or adverse modification of critical habitat in the Platte River basin for new or existing water-related activities evaluated under the ESA after the Program was in place; and (3) avoiding any prohibited take of target species in the Platte River basin.

following criteria in Section H of Colorado's Plan for Future Depletions [Program, Attachment 5, Section 9]:

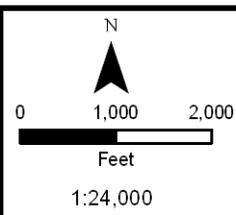
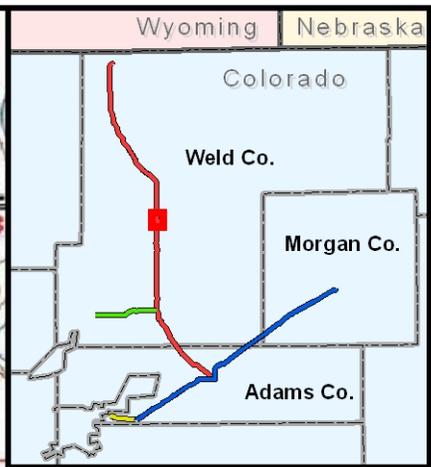
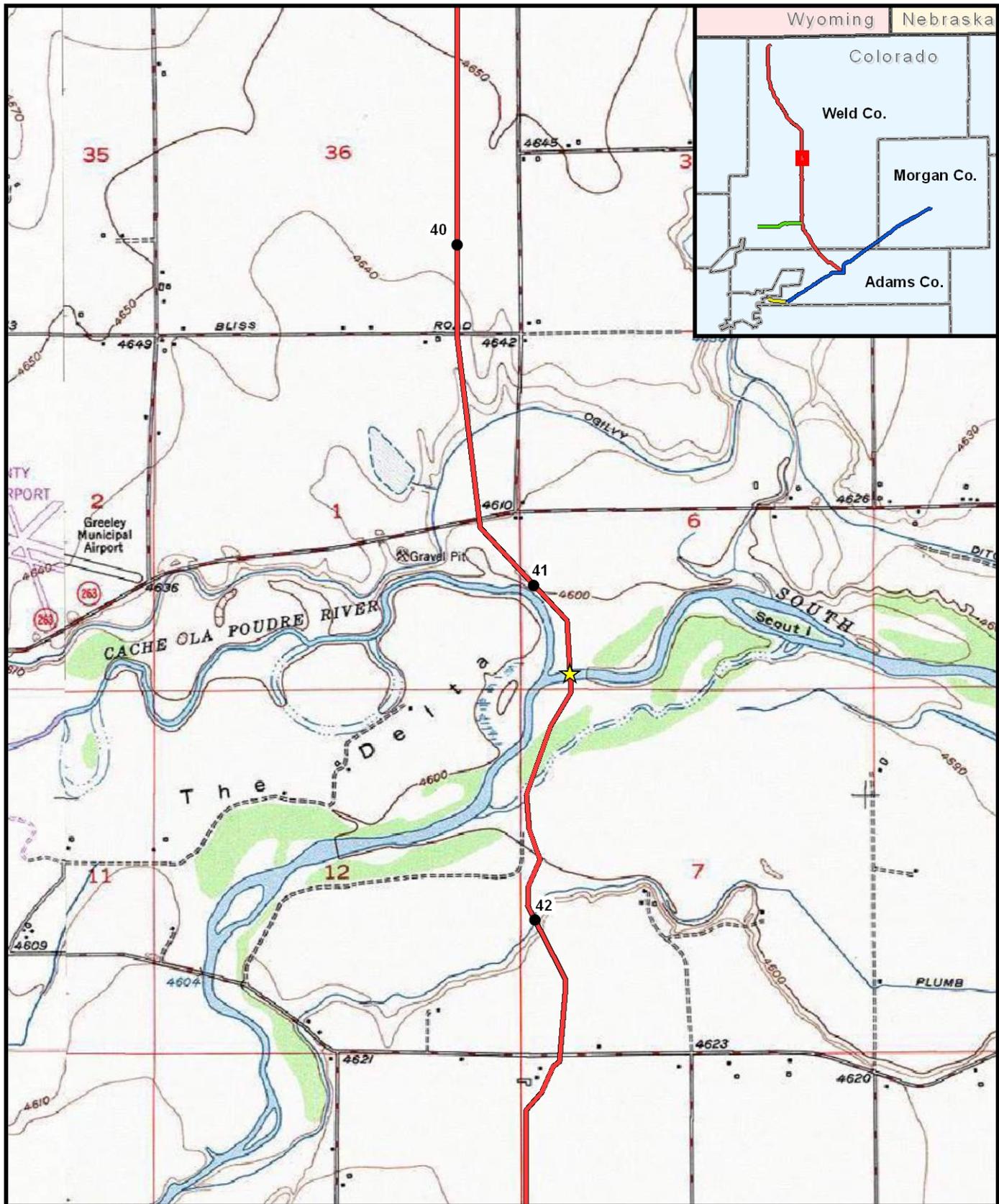
1. The Project is operated on behalf of Colorado water users;
2. The Project does not involve construction of a major on-stream reservoir located on the mainstem of the South Platte River anywhere downstream of Denver, Colorado;
3. The Project is not a hydropower diversion/return project diverting water including sediments from the mainstem of the South Platte River anywhere downstream of Denver and returning clear water to the South Platte River.
4. The Project does not cause the average annual water supply to serve Colorado's population increase from Wastewater Exchange/Reuse and Native South Platte Flows to exceed 98,010 acre feet during the February-July period.

Accordingly, the impacts of this activity to the target species, whooping crane critical habitat, and other listed species in the central and lower Platte River addressed in the PBO are covered and offset by operation of Colorado's Future Depletions Plan as part of the PRRIP.

The Applicant intends to rely on the provisions of the Program to provide ESA compliance for potential impacts to the target species and whooping crane critical habitat. The FERC staff recommends in the DEIS, as a condition of any approval, that the Applicant fulfill the responsibilities required of Program participants in Colorado, which includes participation in the SPWRAP. The FERC retains discretionary Federal authority for the Project, consistent with applicable regulations and Program provisions, in case reinitiation of Section 7 consultation is required.

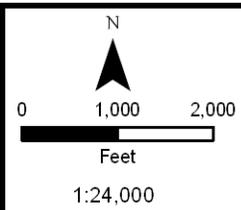
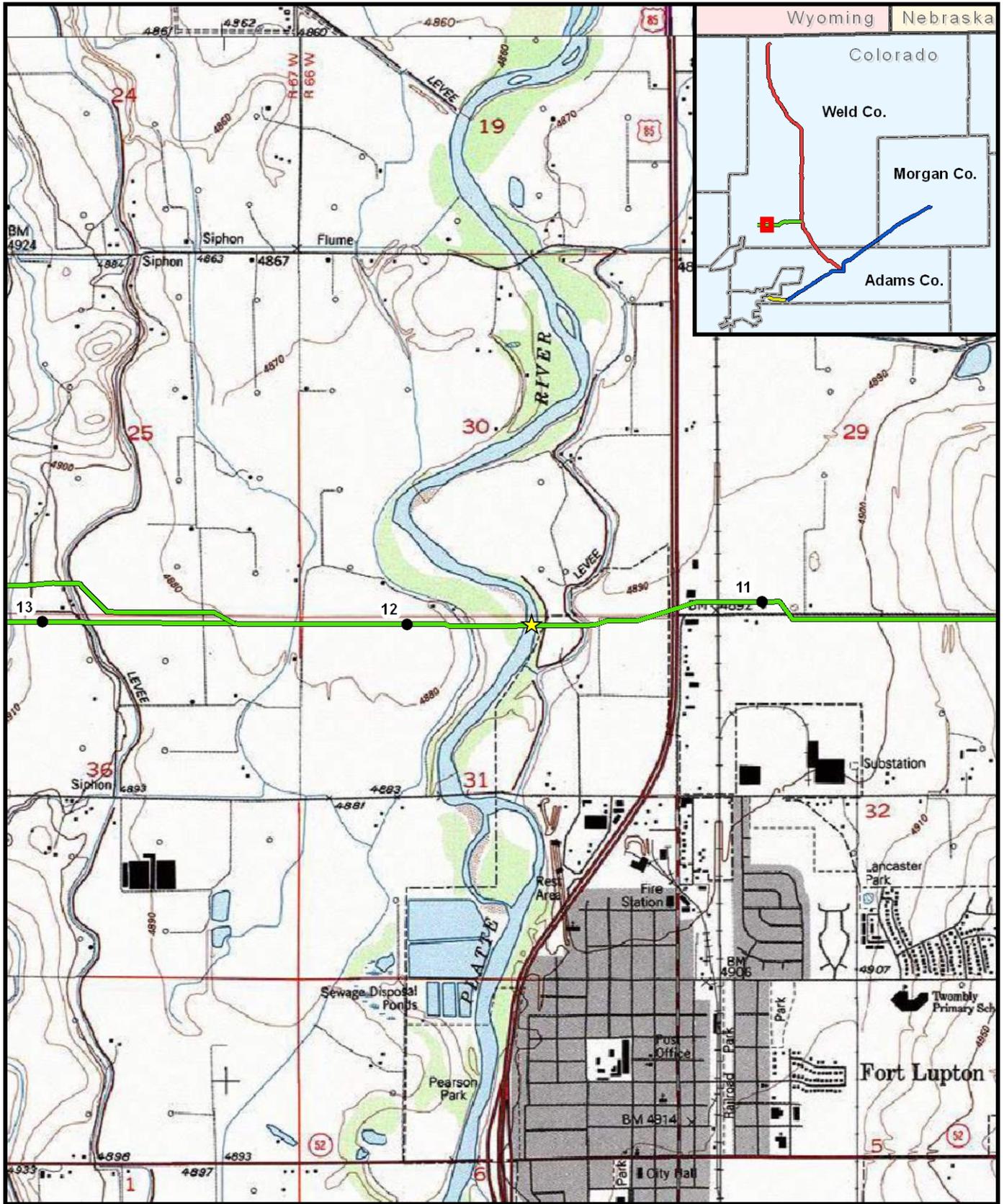
The FERC assumes that a recovery agreement signed by the Applicant is not currently required under SPWRAP. If a recovery agreement is required, please notify us.

This letter addresses consultation on all listed species and designated critical habitat, including the referenced Platte River target species and whooping crane critical habitat. Potential impacts from construction and operation of the Project to any other federally-listed threatened or endangered species and designated critical habitats will be addressed within the applicable biological opinion prepared by the USFWS, in accordance with the ESA.



Legend	
— 250A Line	● Milepost
— 251A Line	★ Appropriation Location
— 252A Line	
— 253A Line	

High Plains Expansion Project
Water Appropriation Location
South Platte River - Milepost 41.2
T5N, R64W, Section 6, SW1/4



- Legend**
- 250A Line
 - 251A Line
 - 252A Line
 - 253A Line
 - Milepost
 - ★ **Appropriation Location**

High Plains Expansion Project
Water Appropriation Location
 South Platte River - Milepost 11.6
 T2N, R66W, Section 31, NE1/4



**Federal Energy
Regulatory
Commission**

**Office of
Energy Projects**

November 2007

Colorado Interstate Gas Company

Docket No. CP07-207-000

BIOLOGICAL ASSESSMENT

High Plains Expansion Project

Washington, DC 20426

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1.0 INTRODUCTION

On April 27, 2007, Colorado Interstate Gas Company (CIG) filed an application with the Federal Energy Regulatory Commission (FERC) in Docket Number CP07-207-000 under Section 7 of the Natural Gas Act (NGA), as amended, and Part 157 of the Commission's regulations. CIG is seeking a Certificate of Public Convenience and Necessity to construct, own, and operate a new interstate natural gas pipeline system and ancillary facilities in Colorado, referred to as the High Plains Expansion Project (Project). The proposed facilities would enable CIG to provide 899,000 dekatherms per day of natural gas transportation capacity.

Federal agencies are required by Section 7 of the Endangered Species Act (ESA), as amended, to ensure that any actions authorized, funded, or carried out by the agency do not jeopardize the continued existence of a federal-listed endangered or threatened species, or result in the destruction or adverse modification of the designated critical habitat of a federal-listed species. The responsible agency, in this case the FERC, is required to consult with the U.S. Fish and Wildlife Service (USFWS) and/or the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) to determine whether federal-listed endangered or threatened species or designated critical habitat are found in the vicinity of the proposed project, and to determine the proposed action's potential effects on those species or critical habitats. For actions involving major construction activities with the potential to affect listed species or designated critical habitat, the federal agency must prepare a Biological Assessment (BA) for those species that may be affected.

The action agency must submit its BA to the USFWS and/or NOAA Fisheries and, if it is determined that the action may adversely affect a listed species, the federal agency must submit a request for formal consultation to comply with Section 7 of the ESA. In response, the USFWS or NOAA would issue a Biological Opinion as to whether or not the federal action would likely jeopardize the continued existence of a listed species, or result in the destruction or adverse modification of designated critical habitat.

Based on informal consultations with the USFWS, 13 federal-listed species were determined to potentially occur in the general vicinity of the proposed Project (see table 1). No critical habitat was identified in the project area. Additionally, the USFWS identified 6 federal-listed species and critical habitat for one species in Nebraska that could be affected by water withdrawals from the South Platte River (see table 2). Our evaluation of impacts, proposed mitigation measures to offset impacts, and our effects determinations are presented in detail in section 3.0. The FERC would ensure that all mitigation measures described in this BA are implemented throughout the project.

The FERC provided a draft BA to the USFWS on August 10, 2007. Ongoing consultations with the USFWS and CIG, and comments from other interested parties, have resulted in additional information regarding federal-listed species and revisions to Project-specific mitigation requirements. As such, we have revised the BA to include the additional species information and revised mitigation measures. The vertical lines in the document margin identify text that has been modified and differs from the corresponding text in the draft BA.

2.0 PROJECT DESCRIPTION

CIG proposes to expand its existing pipeline system in Weld, Adams, and Morgan Counties, Colorado. The system would consist of about 163.7 miles of new pipeline, 10 new metering facilities, 12 new pig launchers/receivers, and 19 new block valves (MLVs) as described below. An overview map of the proposed Project location and facilities is provided in appendix A

Table 1 – Federal-listed Species Potentially Occurring in the Vicinity of the Project

Scientific Name	Common Name	Federal Status
<i>Charadrius melodus</i>	Piping plover	Threatened
<i>Gaura neomeximcana ssp. coloradensis</i>	Colorado butterfly plant	Threatened
<i>Grus Americana</i>	Whooping crane	Endangered
<i>Haliaeetus leucocephalus</i>	Bald eagle	Threatened ^a
<i>Mustela nigripes</i>	Black-footed ferret	Endangered
<i>Nicrophorus americanus</i>	American burying beetle	Endangered
<i>Numenius borealis</i>	Eskimos curlew	Endangered
<i>Scaphirhynchus albus</i>	Pallid sturgeon	Endangered
<i>Spiranthes diluvialis</i>	Ute ladies' tresses	Threatened
<i>Sterna antillarum</i>	Least tern	Endangered
<i>Strix occidentalis lucida</i>	Mexican spotted owl	Threatened
<i>Platanthera praeclara</i>	Western prairie fringed orchid	Threatened
<i>Zapus hudsonius preblei</i>	Preble's meadow jumping mouse	Threatened

^a On June 28, 2007, the USFWS announced the removal of the bald eagle from the list of federal-listed species, and is currently seeking public comment. Although the bald eagle would no longer be afforded protection under the ESA, the bald eagle is afforded protection under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. These Acts require some measures to continue to prevent bald eagle "take" resulting from human activities. Therefore, we have kept the bald eagle in our analysis.

Table 2 – Federal-listed Species Potentially Occurring in Nebraska

Scientific Name	Common Name	Federal Status
<i>Charadrius melodus</i>	Piping plover	Threatened
<i>Grus Americana^a</i>	Whooping crane	Endangered
<i>Haliaeetus leucocephalus</i>	Bald eagle	Threatened ^b
<i>Scaphirhynchus albus</i>	Pallid sturgeon	Endangered
<i>Sterna antillarum</i>	Least tern	Endangered
<i>Platanthera praeclara</i>	Western prairie fringed orchid	Threatened

^a Including critical habitat for the whooping crane.

^b On June 28, 2007, the USFWS announced the removal of the bald eagle from the list of federal-listed species, and is currently seeking public comment. Although the bald eagle would no longer be afforded protection under the ESA, the bald eagle is afforded protection under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. These Acts require some measures to continue to prevent bald eagle "take" resulting from human activities. Therefore, we have kept the bald eagle in our analysis.

2.1 Pipeline Facilities

The natural gas pipeline facilities would consist of a total of 163.7 miles of 24- and 30-inch-diameter pipeline in Weld, Adams, and Morgan Counties, Colorado. The pipelines would include:

- Line 250A – 84.8 miles of 24- and 30-inch diameter pipeline in Weld and Adams Counties;
- Line 251A – 57.9 miles of 24-inch-diameter pipeline in Weld, Adams, and Morgan Counties;
- Line 252A – 14.9 miles of 30-inch-diameter pipeline in Weld County; and
- Line 253A – 6.1 miles of 24-inch-diameter pipeline in Adams County.

CIG would use a 100-foot-wide construction right-of-way for the majority of the pipeline routes. A 75-foot-wide construction right-of-way would be used in non-agricultural wetlands. CIG would retain a 50-foot-wide permanent right-of-way for pipeline operation.

In addition to the construction right-of-way, CIG would require temporary extra workspaces for staging construction at the beginning and end of each pipeline segment; at wetland, waterbody, road, and railroad crossings; and in areas of rocky soils, steep slopes, and rugged terrain where additional space is typically required for spoil and/or equipment storage.

To support construction activities, CIG would use six contractor, pipe storage, and offloading yards on a temporary basis. The names and locations of yards identified in table 3.

Table 3 – Contractor, Pipe Storage, and Offloading Yards

Yard No.	Purpose	City	County	Acreage
Yard 1	Pipe Storage & Offloading	Bennett	Adams	17.7
Yard 2	Pipe Storage	Carr	Morgan	10.8
Yard 3	Contractor, Pipe Storage & Offloading	Hudson	Weld	72.6
Yard 4	Contractor	Ault	Weld	15.0
Yard 5	Contractor	Fort Lupton	Weld	20.0
Yard 6	Contractor	Watkins	Weld	9.3
				145.4

CIG would use existing public roads to provide access to the construction right-of-way. In many cases, the roads are paved or graveled public roads and would not require modification. However, CIG plans to use some dirt roads, such as farm or ranch roads or two-track trails. These roads may require grading, filling, and widening to make them passable or to maintain them in a drivable condition during construction, particularly if rain occurs and deteriorates the roads' condition. CIG indicated that one dirt access road passes through a wetland. CIG would install a temporary rock-flume bridge across this wetland to prevent rutting and other disturbance during construction. After construction, CIG would remove the rock-flume bridge and restore the wetland to its original condition.

2.2 Aboveground Facilities

Aboveground facilities on the proposed Project would consist of 10 new meter stations, 12 new pig launchers/receivers, and 19 new MLVs. Aboveground facilities would be installed across 18 separate sites. Five of these sites would be within existing CIG compressor or meter stations.

2.3 Construction Activities

The pipeline facilities would be designed, constructed, tested, and operated in accordance with all applicable requirements included in the U.S. Department of Transportation (DOT) regulations in Title 49 CFR Part 192,² Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards; and other applicable federal and state regulations, including U.S. Department of Labor, Occupational Safety and Health Administration requirements. These regulations are intended to ensure adequate protection for the public and to prevent natural gas pipeline accidents and failures. Among other design standards, Title 49 CFR Part 192 specifies pipeline material and qualification, minimum design requirements, and protection from internal, external, and atmospheric corrosion.

CIG would mostly implement the construction and restoration procedures identified our Upland Erosion Control, Revegetation, and Maintenance Plan (Plan) and Wetland and Waterbody Construction and Mitigation Procedures (Procedures) (January 17, 2003 versions)³. CIG has used our Plan and Procedures to develop its own project-specific Upland Erosion Control, Revegetation, and Maintenance Plan (CIG's Plan) and Wetland and Waterbody Construction and Mitigation Procedures (CIG's Procedures). In most instances, CIG's Plan and Procedures provides an equal or greater level of environmental protection as the FERC's Plan and Procedures. In some cases, however, CIG's Plan and Procedures are less protective and could affect federal-listed species. In these instances, we have required CIG implement site specific mitigation measures to ensure federal species are not adversely affected.

CIG also developed Waste and Spill Management Specifications (Spill Plan); Best Management Practices (BMPs); a Hydrostatic Test Plan; a Reclamation Plan; and an Invasive Species Plan. The Spill Plan describes the practices and procedures that CIG would implement to prevent, respond to, and clean up spills. The BMPs describe the practices and procedures that CIG would implement to protect fish and wildlife during stream crossing construction. The Hydrostatic Test Plan describes the proposed water sources and discharge locations for hydrostatic testing. The Reclamation Plan describes the practices and procedures that CIG would implement to ensure successful revegetation of disturbed proposed Project areas. The Invasive Species Plan describes the practices and procedures that CIG would implement to prevent and control infestations of noxious weeds in the proposed Project area.

² Pipe design regulations for steel pipe are contained in subpart C, Part 192. Section 192.105 contains a design formula for the pipeline's design pressure. Sections 192.107 through 192.115 contain the components of the design formula, including yield strength, wall thickness, design factors, longitudinal joint factor, and temperature derating factor, which are adjusted according to the project design conditions, such as pipe manufacture specifications, steel specifications, class location, and operating conditions. Pipeline operating regulations are contained in subpart L, Part 192.

³ Our Plan and Procedures are a set of construction and mitigation measures that were developed in collaboration with other Federal and state agencies and the natural gas pipeline industry to minimize the potential environmental impacts of construction of pipeline projects in general. Proper implementation of our Plan and Procedures would adequately minimize construction-related impacts on soils, waterbodies, and wetlands.

Equipment Cleaning

CIG stated that it would thoroughly clean all equipment prior to arrival at the work site to prevent or minimize the spread of noxious weeds. Additionally, CIG would establish cleaning sites at known locations of noxious weed infestations, and would clean equipment operating in infested areas before moving to other locations.

Survey and Staking

Before the start of construction, land surveys would be finalized, the pipeline centerline and construction work space would be marked, and land or easement acquisition would be completed. If the necessary land or easements cannot be obtained through good faith negotiations with landowners and the project has been certificated by the Commission, CIG may use the right of eminent domain granted to it under section 7(h) of the NGA and the Rules of Civil Procedure to obtain a right-of-way.

The limits of the approved work area (*i.e.*, the construction right-of-way boundaries and extra workspaces) would be marked. Foreign pipelines and utilities would be identified during preliminary surveys. Prior to construction, contractors would contact the “Call Before You Dig” or “One Call” system to verify and mark all utilities along the project workspaces to minimize the potential for damage to other buried facilities in the area. Where there is a question as to the location of utilities, such as water, cable, gas, and sewer lines, they would be located by field instrumentation and test pits.

Existing utility lines and other sensitive resources, identified in easement agreements or by federal and state agencies, would be located and marked to prevent accidental damage during pipeline construction. Signs, as appropriate, would be posted marking these resources and any associated setbacks.

Landowner fences would be braced and cut where they cross the construction right-of-way, and temporary gates and fences would be installed to contain livestock if present.

Clearing and Grading

A clearing crew would clear the work area of vegetation and obstacles (*e.g.*, trees, logs, brush, and rocks). Trees, brush, and shrubs within the construction corridor would be cut mechanically or by hand or scraped at or near ground level. Vegetative waste would be temporarily stored along the edge of the right-of-way before being hauled away for proper disposal.

In areas where noxious weed infestations are known to occur, vegetation would be stockpiled in the area from where it was stripped and would be off limits to construction equipment.

A grading crew would excavate the construction right-of-way to provide a relatively level work surface and a sufficiently wide work space for the passage of heavy construction equipment. Additional grading may be required in areas where the pipeline runs up and down steep slopes. Steep slopes often need to be flattened to accommodate to the bending limitations of the pipe. In such areas, the slopes would be cut away, and, after the pipeline is installed, reconstructed to their original contours during excavation. In areas where the pipeline would run laterally along the side of a slope, additional grading may also be required. Generally, on steep side slopes, soil from the high side of the right-of-way would

be moved to the low side of the right-of-way to create a safe and level terrace. This is called side-hill construction or two-toning. After the pipeline is installed, the soil from the low side of the right-of-way would be returned to the high side, and the slope's original contours would be restored.

Where extensive grading occurs, CIG would remove topsoil from the full width of the right-of-way and store it separately from subsoil. Topsoil would be returned to its original horizon after subsoil is backfilled in the trench.

Trenching

After topsoil is removed, the trench would be excavated by rotary trenching machines, track-mounted backhoes, or other similar equipment to a depth that provides sufficient cover over the pipeline after backfilling as required by DOT specifications. Typically, the trench would be about 6 feet deep (to allow for about 3 feet of cover) and about 14 or 18 feet wide. In sandy, unstable soils, the trench could be considerably wider because the walls could cave or slough during trenching. Additional cover would be provided at road and waterbody crossings. Less cover would be required in consolidated rock areas (*i.e.*, 18 to 24 inches).

CIG would separate topsoil from subsoil over the trench line along the entire Project. This would be accomplished by using the two-pass trenching technique. The first pass of trenching equipment would result in a shallow excavation to remove the topsoil only. The second pass would excavate the subsoil from the trench. The soils from each of the excavations would be placed in separate piles within construction workspace to prevent mixing, which would allow for proper restoration of the soil during the backfilling process.

Where rock or rocky formations are encountered, tractor-mounted mechanical rippers or rock trenchers would be used for fracturing the rock prior to excavation. Excavated rock would be used to backfill the trench to the top of the existing bedrock profile. CIG anticipates that it would not require any blasting to excavate rock for Project construction.

Generally, the trench would be backfilled immediately at the crossings of waterbodies, roads that are open cut, and residential areas. Where access across the trench is required, trench plugs or steel plates would be installed to permit safe crossing for livestock, vehicles, equipment, or people.

Dewatering

During periods of excessive precipitation or where high water tables are encountered, the excavated trench may collect water and may need to be dewatered. This would be done in accordance our Plan and Procedures. Under no circumstances would heavily silt-laden water be discharged from the trench directly into wetlands or waterbodies. To the extent possible, discharges would occur in well-vegetated upland areas on stable, non-erosive surfaces. If dewatering/discharge activities must be located off the right-of-way, locations would be chosen that would minimize off-right-of-way impacts and impacts to sensitive resources. Water would often be discharged into an energy dissipating devise (*e.g.*, straw bale structure/silt fencing surrounding a silt bag), or by reducing pumping rates, to minimize off-right-of-way impacts.

Pipe Stringing, Bending, and Welding

Prior to or following trenching, sections of externally coated pipe up to 80 feet long (also referred to as joints) would be transported over public road networks and authorized private access roads to the right-of-way by truck and placed or "strung" along the side of the trench in a continuous line.

After the joints of pipe are strung along the trench and before the sections of pipe are joined together by welding, individual sections of the pipe may be bent by using a track-mounted, hydraulic pipe-bending machine to tailor the shape of the pipe to conform to the contours of the terrain. Where multiple or complex bends are required, that section of the pipeline would be bent at the factory.

After the pipe joints are bent, they would be aligned, welded together into long strings, and placed on temporary supports along the edge of the trench. Welding is one of the most crucial phases of pipeline construction because the overall integrity of the pipeline depends on this process. Each weld must exhibit the same structural integrity with respect to strength and ductility as the pipe. Only experienced welders highly proficient in pipeline welding and qualified according to applicable standards would be used. Each weld would be inspected by quality control personnel to determine the quality of the weld. Governmental regulations require nondestructive testing of all welds in areas such as inside railroad or public road rights-of-way and in certain other areas. Radiographic examination is a nondestructive method of inspecting the inner structure of welds and determining the presence of defects. Contractors specializing in radiographic inspection would be hired to perform the inspections. Radiographic inspections would be performed as outlined in Title 49 CFR Part 192 and would be x-rayed to insure structural integrity and compliance with the requirements established by the American Petroleum Institute Standard 1104, American Society of Mechanical Engineers, and American Petroleum Institute standards. Welds that do not meet established specifications would be repaired or removed. Once the welds are approved, a protective coating would be applied to the welded joints.

Pipe Coating, Inspection and Repair

Pipeline used for interstate transport of natural gas is typically coated to protect it from the environment and accelerated degradation. Using coated pipeline is the modern standard. Pipe is normally mill-coated or yard-coated prior to stringing. However, the pipeline also would require a coating in the field at the welded joints where bare metal has been exposed. Prior to lowering-in the pipeline segment into the trench, the pipeline coating would be visually and electronically inspected to locate and repair coating faults or voids; this is commonly referred to as "jeeping" the pipe.

Lowering-in and Backfilling

Before the pipeline is lowered into the trench, the trench would be inspected to be sure it is free of rocks and other debris that could damage the pipe or protective coating. Dewatering may be necessary to inspect the bottom of the trench in areas where water has accumulated. In areas of rock, padding material such as finer grain sand, soil, or gravel would be placed in the bottom of the trench to protect the pipeline. No topsoil would be used as padding material.

The pipeline would then be lowered into the trench. Trench breakers (stacked sand bags or polyurethane foam) would be installed in the trench on slopes at specified intervals to prevent subsurface

water movement along the pipeline. The trench would then be backfilled using the excavated material. If the excavated material is rocky, the pipeline would be protected with a rock shield (fabric or screen that is wrapped around the pipe to protect the pipe and coating from damage by rocks, stones, roots, and other debris) or would be covered with a more suitable fill obtained by separating suitable material from the existing, excavated trench material or from a commercial source. In irrigated land, CIG would backfill the trench to the top of the pipe and then would saturate the trench with water to compact the backfill material around and over the pipeline. Successive layers of soil would be compacted in this way, or by using mechanical means, until the trench is completely backfilled.

Tie-In Crews

Tie-in crews are self-sufficient crews that work in tandem with the construction spread. They have equipment, welders, and labor to perform a specialized task (*e.g.*, waterbody/wetland crossings, road crossings). Tie-in crews would be used in areas that would normally slow-down the main spread or in locations where construction has been skipped due to lack of access.

Hydrostatic Testing

After backfilling, the pipeline would be tested to ensure the system is capable of withstanding the operating pressure for which it was designed. This procedure is called hydrostatic testing. Test water would be pumped into each test section, pressurized to design test pressure, and maintained at that pressure for about 8 hours. Test pressures and durations would be consistent with the requirements of Title 49 CFR Part 192. If leaks are found, they would be repaired and the section of pipe retested until the required specifications are met.

The pipeline may be partitioned into separate test segments, depending on water availability and terrain conditions. Water for hydrostatic testing would be obtained from surface waters of the South Platte River through specific agreements with federal, state, and local regulations. Following testing, the hydrostatic test water would be discharged into sediment filtration/energy dissipation devices along the construction right-of-way. Test water discharges would be in accordance with CIG's Procedures and applicable federal, state, and local agency requirements. After completion of construction and hydrostatic testing, the pipeline would be cleaned and dried using mechanical tools (pigs) that are moved through the pipeline with pressurized, dry air. The pipeline would be internally inspected after testing to detect whether dents or other damage occurred during construction. If the pipeline fails the hydrostatic test, or if damage to the pipeline was detected during the in-line tool inspection, it would be exposed, repaired, and retested as needed.

Cleanup and Restoration

During cleanup, construction debris in the work area would be disposed of and work areas would undergo final grading and would be restored to preconstruction contours as closely as possible. Within 20 calendar days of backfilling the trench in any area, weather and soil conditions permitting, CIG would final grade all work areas so they would be restored as closely as possible to preconstruction contours.

To compensate for settling, a mound of soil about the width of the trench and one foot high may be left over the backfilled trench in upland areas, except where the trench soils would be compacted

during backfilling. Appropriately spaced breaks would be left in the mounded soil to prevent interference with groundwater runoff and irrigation. Segregated topsoil would be spread over the surface of the right-of-way and permanent erosion controls (waterbars or slope breakers) would be installed within the right-of-way, except in agricultural and pasture land where the landowner has not consented to their installation. After final grading is completed, the right-of-way would be seeded. CIG would make every effort to seed disturbed areas within 14 calendar days after final grading.

Seeding would be conducted in accordance with the dates and mixes identified in CIG's Reclamation Plan. After seeding, the right-of-way would be stabilized by applying 1.5 tons per acre of weed-free straw or hay (or functional equivalent) to uncultivated, slopes greater than five percent.

Some access roads used for construction may require grading to use during construction and would be restored to their preconstruction condition, unless the property owner requests otherwise.

Markers showing the location of the pipeline would be installed at fence and road crossings in order to identify the owner of the pipeline and convey emergency information in accordance with applicable governmental regulations, including DOT safety requirements. Special markers providing information and guidance for aerial patrol pilots would also be installed.

Post Construction Monitoring

All areas disturbed by construction would be monitored until the right-of-way surface conditions are similar to the adjacent undisturbed land and all temporary erosion control devices are removed. Agricultural areas would be monitored for at least 2 years for issues such as loss in crop productivity, soil settling, excessive soil compaction, excessive rocks, and excessive wetness. Other upland areas would be monitored for at least two full growing seasons. Upland revegetation would be considered successful when the density and cover of non-nuisance vegetation on the disturbed right-of-way are similar to the density and cover off the right-of-way. Wetlands would be monitored for 3 to 5 years for the reestablishment of wetland vegetation. Revegetation would be considered successful when the cover of native herbaceous and/or woody species is at least 80 percent of the total area and the diversity of native species is at least 50 percent of the diversity originally found in the wetland. CIG would repair and correct any areas where restoration and revegetation is not successful. The USACE may have additional requirements for wetland restoration and mitigation as part of its permit.

3.0 SPECIES IMPACTS AND EFFECTS DETERMINATION

CIG informally consulted with the USFWS to determine if federal-listed endangered, threatened, or candidate species may potentially occur in the proposed Project area. The USFWS identified 13 federal-listed species, including 6 endangered species and 7 threatened species that have the potential to occur in the general Project area. The USFWS has also determined that water withdrawals from the South Platte River could affect 6 federal-listed species in Nebraska, including 3 endangered species and 3 threatened species and critical habitat for one endangered species.

CIG conducted habitat evaluations and surveys for listed species in 2006 and early 2007. Based on CIG's field survey reports, analysis of the potential effects of the proposed action, and informal consultations with the USFWS, we concluded that the proposed Project would have no effect or would

not likely adversely affect federal-listed species potentially occurring in the vicinity of the Project, but may adversely affect 6 species (including critical habitat for one species) occurring in Nebraska. Tables 4 and 5 presents a list of the federal-listed species and includes: 1) their federal status, 2) the effects resulting from the proposed project, and 3) justification for how these effects were determined.

3.1 South Platte River Water Depletion Impacts on Federal-listed Species

CIG stated that it would require about 29.9 million gallons (92 acre-feet) of surface water from the South Platte River for horizontal directional drill operations, dust control, trench compaction, and hydrostatically testing the proposed pipelines. Six federal-listed species are known to occur in the Platte River system downstream of the proposed Project area, and the USFWS has determined that any withdrawal of more than 32,585 gallons (0.1 acre-feet) from the river system may affect the river flow quantity and/or timing and may adversely affect these species if not properly mitigated. Therefore, the proposed Project *may adversely affect* the following six species and critical habitat: whooping crane (including its critical habitat), interior least tern, piping plover, pallid sturgeon, bald eagle, and western prairie fringed orchid.

For its size, the Platte River system is one of the most highly developed river basins in the United States. It provides municipal and industrial water supplies for about 3.5 million people, irrigates millions of acres of farmland, and generates millions of dollars of hydroelectric power. It also provides important habitat for fish and wildlife of national and international significance. Development and water use along the system has changed the river from a broad, braided waterway subject to high spring floods and great loads of sediment to become narrower, stable, heavily vegetated river. Habitat for many of the original fish and wildlife inhabitants of the river basin is disappearing.

According to the USFWS, new and/or continued water depletions in the Platte River basin, which includes the South Platte River, are contributing factors toward jeopardizing the continued existence of certain of species. Since the late 1970s, the USFWS has issued jeopardy biological opinions (BO) for virtually all federal actions that deplete water in the basin. Significant time and money have been expended during the ESA consultation processes and in developing alternatives to avoid jeopardizing the continued existence of certain species. The requirements in the vast majority of consultations have entailed time-intensive negotiations and mitigation, typically requiring that water users replace individual project depletions on a one-for-one basis.

In an effort to address the issues raised in these jeopardy BOs, and provide greater certainty for water users in the basin, the U.S. Department of the Interior and the States of Wyoming, Colorado, and Nebraska signed a Cooperative Agreement for Platte River research and other efforts relating to endangered species and habitats. This agreement, in turn, resulted in the Platte River Recovery Implementation Program (PRRIP). The program allows for existing and future water uses while assisting in the recovery of the target species. It also provides streamlined ESA compliance procedures. Individual water users need to decide whether to rely on the new program for purpose of ESA compliance or to pursue stand-alone ESA consultation and project-specific mitigation. Under the new program, individual

Table 4 – Determinations of Effect for Federal-Listed Species Potentially Occurring in the Vicinity of the Project

Species	Federal Status	Determination of Effects ^a	Justification for Determination of Effects in the Project Area
<u>MAMMALS</u>			
<i>Mustela nigripes</i> Black-footed ferret	Endangered	Not Likely to Adversely Affect	Naturally occurring populations of this species are probably extirpated from the State of Colorado. Reintroduced species are not known, nor are expected to occur.
<i>Zapus hudsonius preblei</i> Preble's meadow jumping mouse	Threatened	Not Likely to Adversely Affect	No PMJM were trapped during surveys conducted in 2007. Additionally, no suitable habitat was identified for the PMJM.
<u>BIRDS</u>			
<i>Charadrius melodus</i> Piping plover	Threatened	Not Likely to Adversely Affect	No suitable nesting habitat. The proposed crossing points of the South Platte River would disturb only a limited amount of potential foraging area for a short duration of time. A previous BO issued by the USFWS determined water withdrawals from the South Platte River would not likely jeopardize the continued existence of this species.
<i>Grus americana</i> Whooping crane	Endangered	Not Likely to Adversely Affect	This is a highly mobile and casual migrant in proposed Project area. A previous BO issued by the USFWS determined water withdrawals from the South Platte River would not likely jeopardize the continued existence or destroy or adversely modify designated critical habitat for this species.
<i>Haliaeetus leucocephalus</i> Bald eagle ^b	Threatened	Not Likely to Adversely Affect	No known nesting or winter roosting sites. Nesting surveys to be conducted during 2008. Species is highly mobile, reasonably tolerant. A previous BO issued by the USFWS determined water withdrawals from the South Platte River would not likely jeopardize the continued existence of this species.
<i>Numenius borealis</i> Eskimos curlew	Endangered	No effect	Not recorded in Colorado in the proposed Project area since 1882.
<i>Sterna antillarum</i> Least tern	Endangered	Not Likely to Adversely Affect	No suitable nesting habitat. The proposed crossing points of the South Platte River would disturb only a limited amount of potential foraging area for a short duration of time. A previous BO issued by the USFWS determined water withdrawals from the South Platte River would not likely jeopardize the continued existence of this species.
<i>Strix occidentalis lucida</i> Mexican spotted owl	Threatened	No effect	No suitable nesting habitat within the project area.
<u>FISH</u>			
<i>Scaphirhynchus albus</i> Pallid sturgeon	Endangered	Not Likely to Adversely Affect	This species probably does not occur in the proposed Project area. A previous BO issued by the USFWS determined water withdrawals from the South Platte River would not likely jeopardize the continued existence of this species.
<u>INSECT</u>			
<i>Nicrophorus americanus</i> American burying beetle	Endangered	Not Likely to Adversely Affect	Very unlikely species occurs. The western most distribution in of this species occurs in the sandhills of Nebraska.
<u>PLANTS</u>			
<i>Gaura neomeximcana ssp. coloradensis</i> Colorado butterfly plant	Threatened	Not Likely to Adversely Affect	The 2006 surveys did not discover species. Additional presence/absence surveys to be conducted in 2007 would not likely result in a finding of this species.
<i>Platanthera praeclara</i> Western prairie fringed orchid	Threatened	Not Likely to Adversely Affect	West of known range and optimal habitat does not occur. A previous BO issued by the USFWS determined water withdrawals from the South Platte River would not likely jeopardize the continued existence of this species.
<i>Spiranthes diluvialis</i> Ute ladies' tresses	Threatened	Not Likely to Adversely Affect	The 2006 surveys did not discover this species and the available habitat were classified as being of low quality due to hydrology and disturbed conditions.

^a No effect = The proposed Project will not affect listed species or critical habitat;

Not Likely to Adversely Affect = Effects of the listed species are expected to be discountable, or insignificant, or completely beneficial.

^b On June 28, 2007, the USFWS announced the removal of the bald eagle from the list of federal-listed species, and is currently seeking public comment.

Table 5 – Determinations of Effect for Federal-Listed Species Potentially Occurring in Nebraska

Species	Federal Status	Determination of Effects ^a	Justification for Determination of Effects in the Project Area
<u>BIRDS</u>			
<i>Charadrius melodus</i> Piping plover	Threatened	May Adversely Affect	Water depletion in the Platte River system greater than 0.1 acre-foot.
<i>Grus americana</i> Whooping crane ^a	Endangered	May Adversely Affect	Water depletion in the Platte River system greater than 0.1 acre-foot.
<i>Haliaeetus leucocephalus</i> Bald eagle ^b	Threatened	May Adversely Affect	Water depletion in the Platte River system greater than 0.1 acre-foot.
<i>Sterna antillarum</i> Least tern	Endangered	May Adversely Affect	Water depletion in the Platte River system greater than 0.1 acre-foot.
		May Adversely Affect	Water depletion in the Platte River system greater than 0.1 acre-foot.
<u>FISH</u>			
<i>Scaphirhynchus albus</i> Pallid sturgeon	Endangered	May Adversely Affect	Water depletion in the Platte River system greater than 0.1 acre-foot.
		May Adversely Affect	Water depletion in the Platte River system greater than 0.1 acre-foot.
<u>PLANTS</u>			
<i>Platanthera praecleara</i> Western prairie fringed orchid	Threatened	May Adversely Affect	Water depletion in the Platte River system greater than 0.1 acre-foot.

^a Including critical habitat for the whooping crane.

^b On June 28, 2007, the USFWS announced the removal of the bald eagle from the list of federal-listed species, and is currently seeking public comment.

projects are asked to contribute money, not water, to address their depletive impacts on target species. Individual projects then rely on the program's offsetting measures as their means to avoid jeopardy to the species and adverse modification of critical habitat.

The PRRIP final EIS and its related programmatic BO serve as the description of the environmental baseline and environmental consequences for the effects of the federal actions on the species and their habitat. The programmatic BO contains a list of species and critical habitat in the action area, their status, and the USFWS's determination of the effects of the PRRIP on the listed species and critical habitat. The USFWS determined in the programmatic BO that the continued operation of existing and certain new water-related activities may adversely affect but would not likely jeopardize the continued existence of the endangered whooping crane, interior least tern, and pallid sturgeon, or the threatened northern Great Plains population of the piping plover. Further, the USFWS found that the continued operation of existing and certain new water-related activities may adversely affect but would not likely jeopardize the threatened bald eagle and western prairie fringed orchid associated with the central and lower reaches of the Platte River in Nebraska, and was not likely to destroy or adversely modify designated critical habitat for the whooping crane.

Within the proposed Project area, Colorado has set up the South Platte Water Related Activities Program, Inc. (SPWRAP) as a quasi-regulatory, non-profit agency for implementing the PRRIP program. SPWRAP serves as the vehicle by which Colorado water users may participate in the program, and obtain regulatory benefits provided by that program. Through membership fees, SPWRAP generates the funds necessary to provide human resources and assist the State of Colorado in achieving the required river flows and fulfilling reporting requirements. One-time uses covered by SPWRAP, such as the appropriation of water for hydrostatic testing, cost the water user a one-time flat-rate fee for each increment of 100 acre feet provided water is returned to the river. Fees are assessed on a case-by-case

basis for uses that do not return water to the river, such as CIG's proposal to use water for horizontal directional drill operations, dust control, trench compaction, and discharging the hydrostatic test water to various locations along the pipeline routes.

In the case of this proposed Project, CIG has indicated that it plans to use the SPWRAP program to obtain authorization to appropriate water from the South Platte River. Therefore, we are able to utilize the USFWS's streamlined process under the PRRIP for formal consultations. Accordingly, we have adapted the USFWS's "Template Biological Assessment & Request for Formal Section 7 Consultation" for water depletions in the Platte River system and incorporated the template BA into our cover letter for this BA. That cover letter and its findings are incorporated into this BA by reference.

3.2 Non-Water Depletion Impacts on Federal-listed Species

During informal consultations with the USFWS a total of 13 federal-listed species were identified as potentially occurring in CIG's proposed Project area (Weld, Adams, and Morgan Counties). These included the black-footed ferret, Preble's meadow jumping mouse, whooping crane, bald eagle, least tern, piping plover, Eskimo curlew, Mexican spotted owl, pallid sturgeon, American burying beetle, Colorado butterfly plant, Ute's ladies tresses, and western prairie fringed orchid. The likelihood of these species to occur in the Project area, proposed mitigation to reduce Project effects to these species, and our determination of effects of the proposed Project on federal-listed species is provided below.

3.2.1 Mammals

Black-footed Ferret (*Mustela nigripes*) Endangered

The black-footed ferret is a federal endangered species. The last official record of a black-footed ferret in Colorado was near Buena Vista in 1943. Since 2001, however, state and federal wildlife biologists have established two major black-footed ferret colonies; one at Coyote Basin, which straddles the Colorado-Utah border west of Rangely, and another at the Bureau of Land Management's Wolf Creek Management Area southeast of Dinosaur National Monument. In late-summer 2004, state and federal wildlife biologists confirmed that the ferrets are persisting at the Wolf Creek site.

Historically this species inhabited short grass prairie and rolling hills, depending almost exclusively on prairie dog colonies for food, cover, and breeding habitat. Black-footed ferrets once ranged throughout the Great Plains, extending from the Rocky Mountains east through the Dakotas, and south through Nebraska, Kansas, Oklahoma, Texas, New Mexico, and Arizona. The range of the ferret coincides with that of prairie dogs, and ferrets with young have been documented only in the vicinity of active prairie dog colonies. Drastic reductions in prairie dog numbers and distribution occurred during the last century due to widespread poisoning of prairie dogs, the conversion of native prairie to farmlands, and outbreaks of sylvatic plague; particularly in the southern portions of their range.

CIG's 2006 field surveys identified 23 black-tailed prairie dog colonies within or adjacent to the proposed pipeline routes. The USFWS Black-footed Ferret 1989 Survey Guidelines (USFWS 1989) indicate that colonies must be a minimum of 80 acres in size and contain greater than eight burrows per acre in order to potentially support black-footed ferrets. Three colonies met the minimum size criteria. Of those three, only one met the minimum size criteria and burrow density. No scat or tracks of the

black-footed ferret were observed at this or other colonies during the 2006 field investigations, though no focused surveys were conducted.

There are currently no known occurrences of the black-footed ferret in the proposed Project area. Until the black-footed ferret was reintroduced it was considered extirpated in Colorado. Given the historic susceptibility of this species to anthropogenic induced impacts, it is highly improbable that there is any relic population within the highly fragmented landscape of the proposed Project area. Therefore, the proposed Project *is not likely to adversely affect* the black-footed ferret.

Preble's Meadow Jumping Mouse (*Zapus hudsonius preblei*) Threatened

The Preble's meadow jumping mouse (PMJM) is a federal threatened species. This historically rare mammal has declined as a result of human induced modification or destruction of existing habitat. It currently occurs in only a few watersheds along Colorado's Front Range and in southeastern Wyoming. In Colorado, the PMJM is currently documented from seven counties (Weld, Larimer, Boulder, Jefferson, Douglas, Elbert, and El Paso) (Grunau, *et al.* 1999). The largest and most stable populations occur in East and West Plum Creeks in Douglas County, and in Monument Creek on the U.S. Air Force Academy in El Paso County (Grunau, *et al.* 1999).

PMJM are typically found in dense riparian vegetation with a tree overstory, a well-developed shrub layer, and a thick herbaceous layer. Most often the shrub cover typically consists of willow species (*Salix*), but the species composition seems to be secondary to the overall presence of a mature shrub component. What seems universally true for PMJM habitat is the presence of ground cover immediately adjacent to surface water. Numbers of PMJM captures appear to decrease the further one moves from this characteristic habitat (Corn, *et al.* 1995; Meaney, *et al.* 1996; in Grunau *et al.* 1999). Based on a study of kidney structure, it is believed that PMJM are dependent upon open water (Wunder 1998; in Grunau, *et al.* 1999), which may explain their close association to these habitats. Preliminary estimates of habitat use in Colorado indicate that PMJM spend 70% of their time in riparian shrub communities and 30% in upland grasslands (Schorr 2001). Upland use has occurred during the day as well as at night. Studies in Douglas County, Colorado suggest that upland grasslands may serve as feeding "hotspots" (Shenk 1998; in Grunau, *et al.* 1999).

Armstrong, *et al.* (1997; in Grunau, *et al.* 1999) suggested that exotic, invasive plant species do not appear to conflict with PMJM habitat needs. Presence of non-native plants such as Canada thistle (*Cirsium arvense*), toadflax (*Linaria* spp.), and smooth brome (*Bromus inermis*) do not appear to prohibit PMJM from occupying an area. PMJM have been captured in the center of large Canada thistle stands on Warren AFB in the recent past (Beauvais 1998; in Grunau, *et al.* 1999). However, the long-term impact of monocultures of these and other invasive weeds on PMJM population viability has not been investigated.

CIG conducted habitat assessments for the PMJM at 76 sites along the proposed pipeline routes in July, August, October, and December 2006, and March 2007 in accordance with USFWS Survey Guidelines (USFWS 2004). Based on this review it was determined that a total of two sites support habitat characteristics required by the PMJM and warranted trapping surveys to determine the presence of the species. Trappings were conducted in July 2007 for four nights. No PMJM were captured during the

survey. Additionally, further evaluation of habitat at the two trapping sites indicated that the weedy understory was mostly unsuitable for the PMJM. Therefore, we have determined that the proposed Project does not support suitable habitat for the PMJM and is not likely to adversely affect the PMJM.

3.2.2 Birds

Piping Plover (*Charadrius melodus*) Threatened

The piping plover is a federal threatened species. It is considered to be a rare occurrence in the plains of Colorado. Nesting was first observed in Colorado in 1949 and a few reports of non-nesting birds occurred during the 1950s and 1960s. There are no reports of nesting between 1949 and 1989. A census conducted in 1991 recorded 19 piping plovers, and during an extensive North American breeding census in 1996, fewer than 20 piping plovers were found in Colorado, and many of them were unpaired males (CDOW 2007a).

In Colorado, nesting has been observed on various reservoirs of the Arkansas River. Six different reservoirs (Neenoshe, Neegrande, Neeskah, John Martin, Adobe Creek, and Verhoeff) have been monitored in Colorado for 10 years (1990–2000). There have been as many as nine nesting pairs in 1994 and 1995, and as few as four pairs in 2000. However, these sites have not been able to sustain a stable population of piping plovers and have not contributed significantly to the species population (DOI 2002). Nesting habitat in Colorado is on sandy lakeshore beaches, sandbars within riverbeds or even sandy wetland pastures. An important aspect of this habitat is that of sparse vegetation. Piping plovers also forage in shallow waters where small fishes and invertebrates are present. The primary areas of potential use by the piping plover in the proposed Project area are the sandbars in and along the South Platte River.

Given the primary nesting locations for piping plover in Colorado have been associated with reservoirs on the Arkansas River it is doubtful that this species would nest in the South Platte River near the proposed Project area. Surveys conducted by CIG in 2006 indicated that no suitable nesting sites were present at the proposed crossing points of the South Platte River. Given the mobility of the species, and the relatively restricted area in which construction would occur, it is unlikely that the proposed South Platte River pipeline crossing would result in an adverse impact to piping plovers potentially foraging along the river corridor. As well, it is unlikely that added short term turbidity to the water column as the result of construction would adversely reduce foraging potential. Therefore, the proposed Project is not likely to adversely affect the piping plover.

Whooping Crane (*Grus americana*) Endangered

The whooping crane is a federal endangered species. It is considered a casual migrant in eastern Colorado, where it is usually seen around farm ponds during spring and fall migrations. Wild populations of whooping cranes utilize the Texas Gulf coast, including Aransas National Wildlife Refuge, Texas, and Bosque del Apache NWR, New Mexico, and migration and staging areas through northeastern Montana, the western half of North Dakota, central South Dakota, Nebraska, Oklahoma, and east-central Texas, and the non-migratory population in Florida. There are five areas of Critical Habitat designated for the whooping crane, located in Idaho, Kansas, Nebraska, Oklahoma, and Texas, primarily on federal and state wildlife management lands. These areas provide roosting, resting, and foraging habitat to the whoopers

as they migrate between their breeding and wintering grounds. A Rocky Mountain population consisting of a male and two female adult cranes winter in the middle Rio Grande Valley of New Mexico at Casa Colorado State Game Refuge and Bosque Del Apache NWR from November–February. They then migrate north in February– March to south-central Colorado where they spend 4 to 6 weeks in the San Luis Valley (DOI 1997).

Whooping cranes generally arrive at their Canadian breeding grounds during late April and conduct their southward migration from the breeding grounds from mid September to mid October. They are normally on their wintering grounds in the southern United States by mid November. They use a variety of habitats during migration including croplands for feeding and large palustrine wetlands for roosting. They also are known to roost in riverine habitat, most notably the Platte River, Middle Loup River, and Niobrara River in Nebraska; Cimarron River in Oklahoma; and the Red River in Texas. Cranes also roost on submerged sandbars in wide unobstructed channels that are isolated from human disturbance.

Should migrant whooping cranes be identified within eyesight of construction activities, CIG indicated it would cease work until the crane vacates the area. CIG would report any occurrence to the USFWS. Given its mobility, and the fact that any bird occurring in the proposed Project area would be a migrant, the proposed Project *is not likely to adversely affect* the whooping crane.

Bald Eagle (*Haliaeetus leucocephalus*) Threatened

The bald eagle is a federal threatened species; however, the USFWS announced its intent to remove it from the List of Endangered and Threatened Wildlife in the lower 48 States on June 28, 2007, because the available data indicate that this species has recovered (DOI 1999).

The breeding bald eagle population has increased substantially over the last 30 years, with roughly one-third of the breeding sites found east of the Continental Divide within the South Platte River watershed. Other breeding concentrations include the Yampa River upstream of Craig, the White River in the vicinity of Meeker, the Colorado River upstream of Kremmling, and La Plata and Montezuma Counties (CDOW 2007c).

Bald eagles generally nest in tall trees near large lakes, rivers, reservoirs, and coastal areas. Perches include, stout-limbed trees, snags, broken-topped trees, or rocks near water that provide access to hunting areas. Bald eagles have benefited from an increase in forest vegetation along the Platte River, particularly in areas where the forest borders open river channel. They are primarily dependent on fish and waterfowl as a food source while they are in the Platte River Valley. A transitional habitat of 50% trees and 50% open river channel is more valuable to bald eagles than a channel almost entirely covered by mature forest trees (Robson and Banta 1995).

Colorado is a very popular wintering area for bald eagles. The annual midwinter count shows a stable population of up to 800 eagles. The San Luis Valley in the southern part of the state is one of their favorite places because of its supply of fish and waterfowl from open water as well as its high population of rodents and rabbits (CDOW 2007b). In winter, they may also occur locally in semi deserts and grasslands, especially near prairie dog towns (CDOW 2007b).

According to CIG's survey information, no designated critical habitat or known bald eagle nest sites occur within the proposed Project area. Winter roost surveys conducted by CIG in December 2006 within 0.5 miles upstream and downstream of the proposed South Platte River crossings did not reveal any roost sites. Noise from construction activities may alter roosting and/or predatory behavior in the immediate vicinity of the proposed river crossings; however, the construction is rather short duration and would not result in a long term displacement. The proposed corridor is relatively narrow and would impact a limited number of potential roost and/or nest trees. Given the extent of riparian forest type up and downstream of the proposed crossing point the proposed corridor would not result in an adverse long term alteration of potential suitable bald eagle habitat along the river. Birds foraging nearby may be displaced during construction; however, it is unlikely this displacement would result in overt stress to this highly mobile species. Therefore, we have determined that the proposed Project is not likely to adversely affect the bald eagle.

The CDOW commented that, although no bald eagle roosting activity was detected along the South Platte River in December 2006, winter roost locations along the river may change from year to year. The CDOW also commented that new nesting sites may appear beginning in January each year. We do not believe construction is likely to adversely affect the birds during the non-nesting period when they are highly mobile, but do concur that that precautions should be taken to ensure no new nest sites have been established before construction. Therefore, we are recommending that CIG conduct surveys for bald eagles at the two crossings of the South Platte River if construction would occur between April 1 and August 15 to determine if active nests are present within the construction work area or within 0.5 mile of proposed surface disturbance activities. Surveys should be conducted between April 1 and August 15 in the same year as construction in these areas. In the event that an active nest is found, CIG would coordinate with the USFWS and CDOW to develop and implement, if necessary, site-specific mitigation measures prior to construction within 0.5 mile of the find.

Eskimo Curlew (*Numenius borealis*) Endangered

The Eskimo curlew is a federal endangered species. It migrates north from South America in late February or March, through the central plains of North America in late March to mid May and on to its nesting grounds in the Alaskan and Canadian Arctic. The species favors burned-over prairies and marshes during migration. This species has not been recorded in Colorado near the proposed Project area since 1882. The Eskimo curlew is not expected to occur in the proposed Project vicinity during construction of the proposed Project and, therefore, the proposed Project is not likely to adversely affect this species.

Least Tern (interior population) (*Sterna antillarum*) Endangered

The least tern is a federal endangered species. It is an uncommon summer resident on southeastern plains in the Arkansas River Valley of Colorado. Migrants or non breeding individuals occur as casual summer visitors on northeastern plains (Janos 1985b; in USFWS 2007). The least tern currently only nests on reservoirs in the vicinity of the Arkansas River, between Las Animas and Lamar in the southeastern part of the state (USFWS 2007). There are less than 50 breeding pairs in Colorado. The preferred nesting habitat is on sandy or pebbly beaches, well above the water line, around lakes and

reservoirs or on sandy soil sandbars in river channels. The least tern forages in shallow waters where small fish constitute the principal food source.

The very restricted nesting distribution of this species in Colorado suggests that it is very unlikely that this species would nest in the vicinity of the proposed Project. Surveys conducted by CIG in 2006 indicated that no suitable nesting sites were present at the proposed crossing points of the South Platte River. Given the mobility of the species, and the relatively restricted area in which construction would occur, it is unlikely that the proposed river crossings would result in an adverse impact to any least terns potentially foraging along the river corridor. As well, it is unlikely that any added short term turbidity to the water column as the result of construction would adversely reduce foraging potential. Therefore, we have determined that the proposed Project *is not likely to adversely affect* the least tern.

Mexican Spotted Owl (*Strix occidentalis lucida*) Threatened

The Mexican spotted owl is a federal threatened species. It is one of three subspecies of spotted owls in the United States and has the largest range, extending from the southern Rocky Mountains in Colorado and the Colorado Plateau in southern Utah, southward through Arizona and New Mexico (DOI 1993). There have been 13 valid nesting occurrences in Colorado and current records total 2 pairs and 10 single birds.

Johnson (1997) indicates that breeding habitat in Colorado consists of deep, sheer-walled sandstone or rocky canyons from about 6,000 to 9,400 feet in elevation. Johnsgard (1988) describes habitat in eastern Utah and southwestern Colorado as moist and cool canyon bottoms of canyon-mesa topography, where perhaps shady microclimatic conditions prevent possible heat stress in other wise relatively hot environments. The proposed Project area does not support suitable habitat for the Mexican spotted owl. Therefore, the proposed Project would have *no effect* on the Mexican spotted owl.

3.2.3 Fish

Pallid Sturgeon (*Scaphirhynchus albus*) Endangered

The pallid sturgeon is a federal endangered species. The historic range of the pallid sturgeon, as described by Bailey and Cross (1954; in USFWS 1993), encompassed the middle and lower Mississippi River, Missouri River, and the lower reaches of the Platte, Kansas, and Yellowstone Rivers. The pallid sturgeon is adapted to habitat conditions that existed in these large rivers before human activity changed the river's natural, free-flowing, warmwater, and turbid characteristics. Based on the historic and currently recognized distribution of this species it is unlikely that it occurs in the South Platte River near the proposed Project area. Therefore, we have determined that the proposed Project *is not likely to adversely affect* the pallid sturgeon.

3.2.4 Insects

American Burying Beetle (*Nicrophorus americanus*) Endangered

The American burying beetle is a federal endangered species. It currently occurs in six states including, Nebraska, Rhode Island, Oklahoma, South Dakota, Kansas, and Arkansas (UNSM 2007). The

westernmost North American record for the American burying beetle is near North Platte, Nebraska. In Nebraska, habitats that harbor this species include grassland prairie, forest edge, and scrubland (Nebraska Parks and Game Commission 1995). This beetle seems to be largely restricted to areas most undisturbed by human influence. Numerous factors have led to the decline of this species but the foremost factors seem to be the fragmentation of the landscape and the various negative repercussions that coincide with it. Although there is potentially available habitat in the some of the natural short grass prairie and sand sagebrush shrubland types within the proposed Project area, based on current understanding of the distribution of this beetle it is highly unlikely that it occurs there. Therefore, the proposed Project *is not likely to adversely affect* the American burying beetle.

3.2.5 Plants

Colorado Butterfly Plant (*Gaura neomeximcana* ssp. *Coloradensis*) Threatened

The Colorado butterfly plant is a federal threatened species. It grows in the wet meadow zone associated with high plains riparian habitat, on mesic soils that occur on a gradient between the saturated soils along streams and the dry soils of surrounding mixed-grass or shortgrass prairie (Grunau, *et al.* 2004). The plant appears to have definite moisture requirements, and may require shallow subsurface water (MOU 1992; in Grunau, *et al.* 2004). Most populations occur on level or gently sloping sites that are close to streams, springs, and seeps. Colonies may be found on stream banks or in old, dry streambeds near the existing channel (Marriott 1987, Fertig 1994, 1998a, 2000; in Grunau, *et al.* 2004) at elevation ranging from 5,000 to 6,400 feet (Fertig 1998a; in Grunau, *et al.* 2004). Populations are best developed in unshaded areas with sparse vegetation (Fertig 1994; in Grunau, *et al.* 2004). Plants are not typically found in areas dominated by woody vegetation such as willow, or in areas of dense vegetation except at the margins of such habitat (Fertig 1994, 2000, Heidel 2004a; in Grunau, *et al.* 2004).

Colorado butterfly plant is restricted to 23 occurrences over about 1,700 acres of habitat (Jennings, *et al.* 1997; Fertig 1998b; in Grunau, *et al.* 2004) in Laramie and Platte Counties, Wyoming; western Kimball County, Nebraska; and Weld and Boulder Counties in Colorado (the Boulder County population is introduced). Historic native populations from Larimer, Douglas, and Boulder Counties in Colorado have been extirpated (Marriott 1987, O’Kane 1988, Fertig 1994, Spackman, *et al.* 1997; in Grunau *et al.* 2004). One known population of this species occurs less than one mile north of the Cheyenne Compressor Station (Line No. 250A at MP 0.0) in Weld County, Colorado.

Surveys of all potential habitats in 2006 did not reveal the presence of this species. The Lone Tree Creek (Line 250A at MP 12.8) stream crossing site is considered to have the best available habitat for the Colorado butterfly plant; however, no plants were discovered. CIG would conduct an additional survey of this site in July or August of 2007. CIG stated that if the Colorado butterfly plant is identified within the construction corridor, they would locate the species via GPS, and fence and/or avoid the area if possible during construction. If avoidance is impossible, CIG would then remove the plants in a sod plug using a large track hoe to remove the largest plug possible. The plug would then be watered as necessary to facilitate survival of the plants. Following construction, the plug would be returned to the preconstruction location. This technique was successfully implemented during the Medicine Bow Lateral Loop Natural Gas Pipeline Project in Wyoming (Grant *et al.* 2003).

Based on 2006 botanical survey results it is doubtful the Colorado butterfly plant occurs within the proposed construction corridor. Based on the unlikely occurrence of this species within the construction corridor and by implementing the mitigation measures above if the species is found within the construction corridor, we have determined the proposed Project is not likely to adversely affect the Colorado butterfly plant.

Western Prairie Fringed Orchid (*Platanthera praeclara*) Threatened

The western prairie fringed orchid is a federal threatened species. The western prairie fringed orchid distribution extends westward from the Mississippi River to the Sandhills of Nebraska. This orchid has not been recorded in Colorado. Its principal habitat is the moist tall grass prairie community. No western fringed orchids were observed during surveys along the proposed pipeline routes. The proposed pipeline routes do not cross the preferred habitat of this orchid, thus it is very unlikely that this species would occur in the proposed Project area. Therefore, we have determined the proposed Project is not likely to adversely affect the Western prairie fringed orchid.

Ute Ladies'-tresses (*Spiranthes diluvialis*) Threatened

Ute ladies'-tresses is a federal threatened species. At the time the species was listed in 1992, a total of 10 populations with about 10,000 plants were known from Colorado, Nevada, and Utah. Since 1992, the number of extant populations has increased to over 50 and its known range has expanded to Idaho, Montana, Nebraska, Washington, and Wyoming. Survey work and monitoring studies suggest that the global population may be over 83,000 individuals.

Prior to 1992, the extant populations of Ute ladies'-tresses in Colorado were known from Jefferson and Boulder Counties along Clear, Boulder, and South Boulder creeks within the Clear and St. Vrain watersheds. Historical (and presumed extirpated) occurrences were also known from Weld and El Paso Counties (Fertig, *et al.* 1994) in the Middle South Platte, Cherry Creek, and Fountain watersheds. Since 1992, additional populations have been recorded from St. Vrain and Left Hand creeks in Boulder County (St. Vrain watershed), Claymore Lake near Fort Collins in Larimer County (Cache La Poudre watershed), and along the Green River from Browns Park through Lodore Canyon in Moffatt County (Upper Green-Flaming Gorge Reservoir watershed) (Fertig, *et al.* 1994).

Ute ladies'-tresses occurs in moist meadows associated with perennial stream terraces, floodplains, oxbows, seasonally flooded river terraces, sub irrigated or spring-fed abandoned stream channels and valleys, and lakeshores at elevations between 720 - 7000 feet. In addition, 26 populations have been discovered along irrigation canals, berms, levees, irrigated meadows, excavated gravel pits, roadside barrow pits, reservoirs, and other human modified wetlands (Fertig, *et al.* 1994). Ute ladies'-tresses populations may persist for a short time in the grassy understory of woody riparian shrublands, but do not appear to thrive under these conditions (Fertig, *et al.* 1994).

Botanical surveys conducted in 2006 in all potential habitats along the proposed pipeline routes did not reveal the presence of the Ute ladies'-tresses. All locations surveyed were considered to be of low quality due to hydrology and/or disturbance. Habitat at the proposed South Platte River crossings were disturbed and heavily invaded by noxious weeds. CIG stated that if the Ute ladies'-tress is identified within the construction corridor; they would use similar mitigation as described for the Colorado butterfly

plant above. Based on the unlikely occurrence of this species within the construction corridor and by implementing the mitigation measures above if the species is found within the construction corridor, we have determined the proposed Project *is not likely to adversely affect* the Ute ladies'-tress.

4.0 CONCLUSION

CIG, acting as the FERC's non-federal representatives for purposes of complying with Section 7 of the ESA, consulted with the USFWS regarding the presence of federal-listed or proposed listed species in the proposed Project area. Based on these consultations, 13 federal-listed species were determined to potentially occur in the general vicinity of the proposed Project and 6 species (including critical habitat for one species) were identified in Nebraska as having potential to be impacted by water withdrawals from the South Platte River. The FERC has determined that the proposed Project would not affect or is not likely to adversely affect the 13 federal-listed species in the vicinity of the Project, but may adversely affect the 6 species (including critical habitat for one species) in Nebraska.

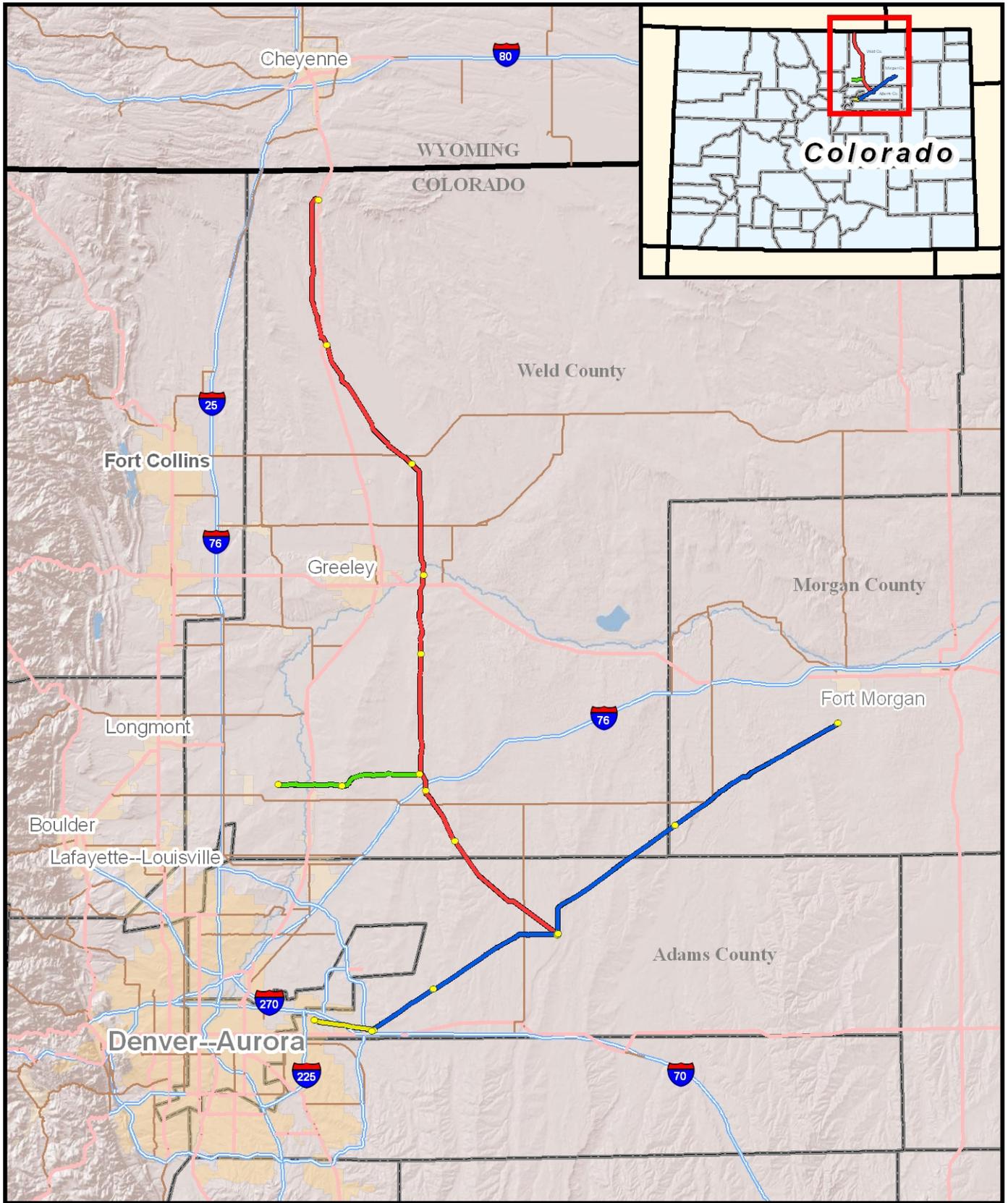
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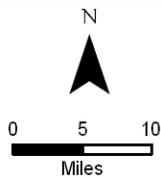
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APPENDIX A
PROJECT OVERVIEW MAP

BIOLOGICAL ASSESSMENT
HIGH PLAINS EXPANSION PROJECT



Prepared By:
merjent



- Proposed Facilities**
- 250A Pipeline
 - 251A Pipeline
 - 252A Pipeline
 - 253A Pipeline
 - Aboveground Facility Site

Project Overview Map

High Plains Expansion Project