

AGENDA
LARIMER COUNTY PLANNING COMMISSION
Wednesday, July 15, 2015/6:30 P.M./Commissioners' Hearing Room

- A. CALL TO ORDER
- B. PLEDGE OF ALLEGIANCE
- C. PUBLIC COMMENT ON THE COUNTY LAND USE CODE
- D. PUBLIC COMMENT REGARDING OTHER RELEVANT LAND USE MATTERS NOT ON THE AGENDA
- E. APPROVAL OF THE MINUTES FOR THE JUNE 17, 2015 MEETING.
- F. ELECTION OF OFFICIALS
- G. AMENDMENTS TO AGENDA
- H. CONSENT ITEMS: *Will not be discussed unless requested by Commissioners or members of the audience.

*1. HORSETOOTH FACILITY LOCATION AND EXTENT #15-Z1981

Staff Contact: Savanah Benedick **Page 1**

*2. BIG ELK MEADOWS WATER LOCATION AND EXTENT #15-Z1978

Staff Contact: Rob Helmick **Page 9**

*3. RAWHIDE SOLAR POWER AMENDED 1041 #15-Z1979

Staff Contact: Rob Helmick **Page 27**

*4. CHILSON 2ND AMENDED REZONING #15-Z1973

Staff Contact: Michael Whitley **Page 83**

*5. GALLEGOS RECYCLING REZONING #15-Z1976

Staff Contact: Michael Whitley **Page 113**

*6. GOMEZ REZONING

#15-Z1975

Staff Contact: Karin Madson

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*7. MORENG SUBDIVISION

#15-S3306

Staff Contact: Matt Lafferty

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I. REPORT FROM STAFF

J. ADJOURN

NEXT MEETINGS: Wednesday, August 12, 2015: BCC/Planning Commission worksession
Wednesday, August 19, 2015: Planning Commission hearing

*3. TITLE: RAWHIDE SOLAR POWER
PLANT 1041 PERMIT
AMENDMENT

REQUEST: Amended 1041 permit for the
construction of a new solar power plant
at the Platte River Power Authority
Rawhide power generating facility

LOCATION: 4-10-68; 2700 CR 82. North of
Wellington at the Rawhide Power Plant
site.

APPLICANT & PROPERTY OWNER: Platte River Power Authority
Chris Woods
2000 Horsetooth Road
Fort Collins CO 80525

STAFF CONTACTS: Robert Helmick, AICP, Planning
Clint Jones, Engineering
Doug Ryan, Health

FILE #: 15-Z1979

NOTICE GIVEN: Posting in the officially designated area
of the Larimer County Courthouse
Offices no less than twenty-four hours
in advance of the hearing.

SITE DATA:

Parcel Number(s)	8004000944 & 8004000947
Total Development Area:	185 Acres
Existing Land Use:	Pasture grazing
Proposed Land Use:	Utility/Solar Array
Existing Zoning:	O-Open
Adjacent Zoning:	
East:	O-Open
North:	O-Open
West:	O-Open
South:	O-Open

Adjacent Land Uses:	
East:	Agricultural
North:	Agricultural and Rail Road
West:	Power Plant
South:	Agricultural & 35 + acre residential
Services:	
Access:	CR 82
Water:	N/A
Sewer:	N/A
Fire Protection:	Wellington Fire Protection
No. Trips Generated by Use:	<10 ADT after construction

PROJECT DESCRIPTION/BACKGROUND:

The Platte River Power Authority received approval for an Activity of State Interest at the Rawhide Power Generating Station in December of 2014.

The siting and development of any solar energy power plant, including solar energy collectors, power generation facilities, facilities for storing and transforming energy and other appurtenant facilities, that together disturb an area greater than five acres, or any addition thereto that expands the disturbed area. This designation shall not include roof mounted solar systems located on existing permitted principal and accessory buildings.

That proposed facility was for installing photovoltaic solar panels on approximately 185 acres. The number and type of panels at that time were not specified but the approval was for a facility that will generate up to 30 MW of electrical power. That site is a part of the overall Rawhide Power Generating station, which currently includes a 250MW coal fired power plant and gas turbine generators. The power produced at the site will be integrated into the electrical system operations at the existing substation switchyard at the power plant site. This proposal does not change the premise of 30 MW but does, based on further engineering analysis, revise the location of the panels to be installed and defines a larger envelop of up to 268 acres, in which the panels on the 185 acres might be located.

The plant site itself is 4,560 acres and this part of the eastern edge of the plant site is characterized by rolling prairie with native grasses. The new sites for the solar arrays are partly within the area previously approved area but now is oriented in a north-south alignment still bounded on the north by the rail line serving the plant and extending south across Coal Creek and following road located below the dam on site. All facilities are still within the bounds of the plant site. This orientation avoids the crossing of Spottlewood Creek and areas with slope issues. This also avoids the issues associated with the proposal to vacate the portion of CR 9 that crosses the plant site.

Since the December approval by the Board of County Commissioners, the applicant, PRPA, has entered into a lease to a “developer”, Bison Solar LLC, who will operate the site. Bison Solar has retained Juwi Inc. to engineer, procure and construct the facility. This is due in part to take advantage of tax credits, which would not be available to PRPA because it is a public entity. It was subsequent to these arrangements that it was determined that there were engineering issues with the original site proposal. The need to amend the application is because of the significant change in location and the fact it was in an area that was not evaluated as a part of the original application.

REVIEW CRITERIA:

A 1041 permit application may be approved only when the applicant has satisfactorily demonstrated that the proposal, including all mitigation measures proposed by the applicant, complies with all of the applicable criteria set forth in this Section 14. If the proposal does not comply with all the applicable criteria, the permit shall be denied, unless the County Commissioners determine that reasonable conditions can be imposed on the permit, which will enable the permit to comply with the criteria.

If the County Commissioners determine at the public hearing that sufficient information has not been provided to allow it to determine if the applicable criteria have been met, the Board may continue the hearing until the specified additional information has been received. The Commissioners shall adopt a written decision on a 1041 permit application within 90 days after the completion of the permit hearing. The 1041 permit will be in the form of a findings and resolution signed by the Board of County Commissioners. The effective date shall be the date on which the findings and resolution is signed.

The applicant has revised the application material to reflect the new orientation and area, providing the necessary environmental and other analysis to support the request. Much of the prior evaluation is comparable to this amended application.

REVIEW CRITERIA FOR APPROVAL OF ALL 1041 PERMITS

1. *The proposal is consistent with the master plan and applicable intergovernmental agreements affecting land use and development.*

The area of the Rawhide Power Generating Station is outside of any GMA or other urban area and therefore is Rural in land use designation. The plant area is not the subject of any IGA or other agreement. The County approved the original plant rezoning and review in the late 1970's into the early 1980's. There have been numerous approvals since the original include four location extent reviews for the installation of the gas turbines at the site. The installation of needed and necessary public facilities is supported by the Master Plan. In this case, the installation is needed but will not require any significant addition of public facilities after construction.

2. *The applicant has presented reasonable siting and design alternatives or explained why no reasonable alternatives are available.*

In this case, the applicant has provided information regarding the selected alternative and two other sites. The other sites were evaluated and dismissed for a variety of site conflicts and infrastructure issues. The two sites evaluated were the Loveland Water treatment Facility along the Big Thompson River and a site at the Loveland-Fort Collins Airport. The selected site had fewer conflicts and cost issues.

3. *The proposal conforms with adopted county standards, review criteria and mitigation requirements concerning environmental impacts, including but not limited to those contained in Section 8 of this Code.*

8.1. Adequate Public Facilities:

8.1.1. Sewage disposal level of service standards:

The site will not be manned therefore no sewer facilities are necessary. During construction, portable toilets will be provided.

8.1.2. Domestic water level of service standards:

The site will not be manned therefore no domestic water facilities are necessary.

8.1.3. Drainage level of service standards:

The applicant's drainage analysis indicates no additional runoff from this site. The Team has historically been concerned with the potential for point drainage impact from runoff from panels. Based on the information provided and research the Development Services Team has conducted there does not appear to be any issue.

8.1.4. Fire protection and emergency medical service level of service standards:

The Wellington Fire District had no issues beyond insuring that this site was adequately identified and addressed for emergency purposes. Additionally, the power plant has its own on-site fire and safety crew who could respond quickly to any emergency.

8.1.5. Road capacity and level of service standard:

The applicant will need to address construction traffic impacts however; because the facility is unmanned, no traffic issues arise from the use itself.

8.2. Wetland Areas:

The applicant has identified wetland areas and has proposed to buffer them on the development plan. No other wetland issues have been identified with this proposal.

8.3. Hazard Areas:

The drainage, Coal Creek, in the area of the proposed facility could be subject to flash flooding. The applicants have avoided these areas in the plan. There are no other hazard areas identified on this site.

8.4. Wildlife:

The site is open and undeveloped and currently supports local wildlife. The applicants have noted that the entire site will be fenced with a 6-foot chain link fence with barbed wire at the top. They have suggested a wildlife friendly fence with a gap at the bottom, which the Team supports. No issues with wildlife use or compatibility were identified in our review.

8.11. Air Quality Standards:

The applicant will be required to obtain a State Air Quality Permit for the disturbed areas resulting from construction.

8.12. Water Quality Management Standards:

The disturbed area will require a water quality permit for construction impact.

8.16. Fences:

A 6-foot chain link fence with will surround the site barbed wired across the top, for security purposes. No wildlife impacts or migration issues were identified in the review, which would suggest the fencing proposed is inappropriate. The International Electrical Code requires the fencing.

4. *The proposal will not have a significant adverse affect on or will adequately mitigate significant adverse affects on the land on which the proposal is situated and on lands adjacent to the proposal.*

The area surrounding the site is Rural without significant development. The impacts to the site and surrounding properties will be minimal, some site grading is necessary and access roads will need to be developed. The construction will disrupt much of the site on a temporary basis during site development. The panels will allow the recovery of vegetative cover below them. The choice of panel type may present a different situation with respect to the timing of establishing a cover and avoiding invasive species, dust and erosion are all of concern. The previous application did generate concerns form a mineral owner regarding the potential impact to their ability to access or recover minerals form this site. This revision has a significantly smaller footprint in the area affected by the mineral owners and in the area to which the panels are being located the mineral are in PRPA ownership.

5. *The proposal will not adversely affect any sites and structures listed on the State or National Registers of Historic Places.*

There are no historic structures the on site or adjacent to it. The evaluation of the applicant does reveal certain potential historic or cultural resources, which may need to be protected or further evaluated as a part of any construction process.

6. *The proposal will not negatively impact public health and safety.*

The site is essentially inert once installed and will not introduce adverse influences to the site. Glare has been cited in the past as a concern with solar installations. In our experience, the proposed panels will absorb between 95-97% of the available light so that glare should not be an issue. Given the orientation of the panels and the location of the site, if glare were to exist, there should be no negative glare or influence on nearby properties. The panels and site development will not constitute any negative impact to public safety or health. Solar facilities of this scale cover large areas – in this case 185 acres. The previous application provides a visual analysis as does this request. It appears that the site will be more visible from nearby residential development and possibly CR 82. It is our evaluation that the impacts are minimal.

7. *The proposal will not be subject to significant risk from natural hazards including floods, wildfire or geologic hazards.*

Although Coal Creek exists on the site, the plans reflect avoidance of the drainage and any adverse influences it may have to access and development of the site. There are no other known hazards associated with this site.

8. *Adequate public facilities and services are available for the proposal or will be provided by the applicant, and the proposal will not have a significant adverse effect on the capability of local government to provide services or exceed the capacity of service delivery systems.*

This site is essentially, after development, passive. No services beyond access are necessary for the utilization of the site.

9. *The applicant will mitigate any construction impacts to county roads, bridges and related facilities. Construction access will be re-graded and re-vegetated to minimize environmental impacts.*

The application materials reflect a commitment from the applicant to do this.

10. *The benefits of the proposed development outweigh the losses of any natural resources or reduction of productivity of agricultural lands as a result of the proposed development.*

The site to be developed a site dominated by native vegetation. No analysis indicates any loss of natural resources. The pasture has been used in the past by the PRPA bison herd and this area will not be available for that purpose due to the conflicts between large livestock and glass. The benefits of the development of this site to a solar power site clearly outweigh any possible agricultural or natural resource values of the site.

11. *The proposal demonstrates a reasonable balance between the costs to the applicant to mitigate significant adverse affects and the benefits achieved by such mitigation.*

The Team has not identified any adverse impact with regard to the development of this site; the benefits associated with the development of the site to a solar power site can be measured as a net positive. This proposal is somewhat more visible to adjoining properties although to this point in the process no comments have been received.

12. *The recommendations of staff and referral agencies have been addressed to the satisfaction of the county commissioners.*

Referral agency comments have been addressed and no significant issues were identified in the review.

ADDITIONAL SPECIFIC REVIEW CRITERIA AND STANDARDS

A. Additional review criteria for power plants.

1. *Proposed transmission facilities have been identified and included as part of the power plant project.*

There are no new transmission facilities associated with the development of this site for solar power.

SUMMARY & CONCLUSIONS:

This amended proposal by the applicant for the solar photovoltaic power facility has not raised significant issues in the review. The site is currently an open pasture or previously disturbed area within the boundaries of the power plant property. By its nature, the use is inert and unmanned therefore having few long-term impacts to the surrounding area or the site itself. Revegetation /reclamation of disturbance to the site appears to be the principal concern with the proposal. At this time, although more than 40 neighbor referrals were sent out, no comment has been received.

DEVELOPMENT SERVICES TEAM FINDINGS:

The Development Services Team finds that the amended request for a solar power facility meets the criteria found in Section 14 of the Larimer County Land Use Code.

- In that construction impacts and site development impacts can and will be mitigated,
 - The site does not contain or disturb significant environment a resources,
 - No real alternatives were explored but in this case this was not necessary due to the existence of the use on site,
 - The available facilities are more than adequate for this site and use; and,
 - Is a reasonable balance between recourses and costs to the applicant and the environment?
-

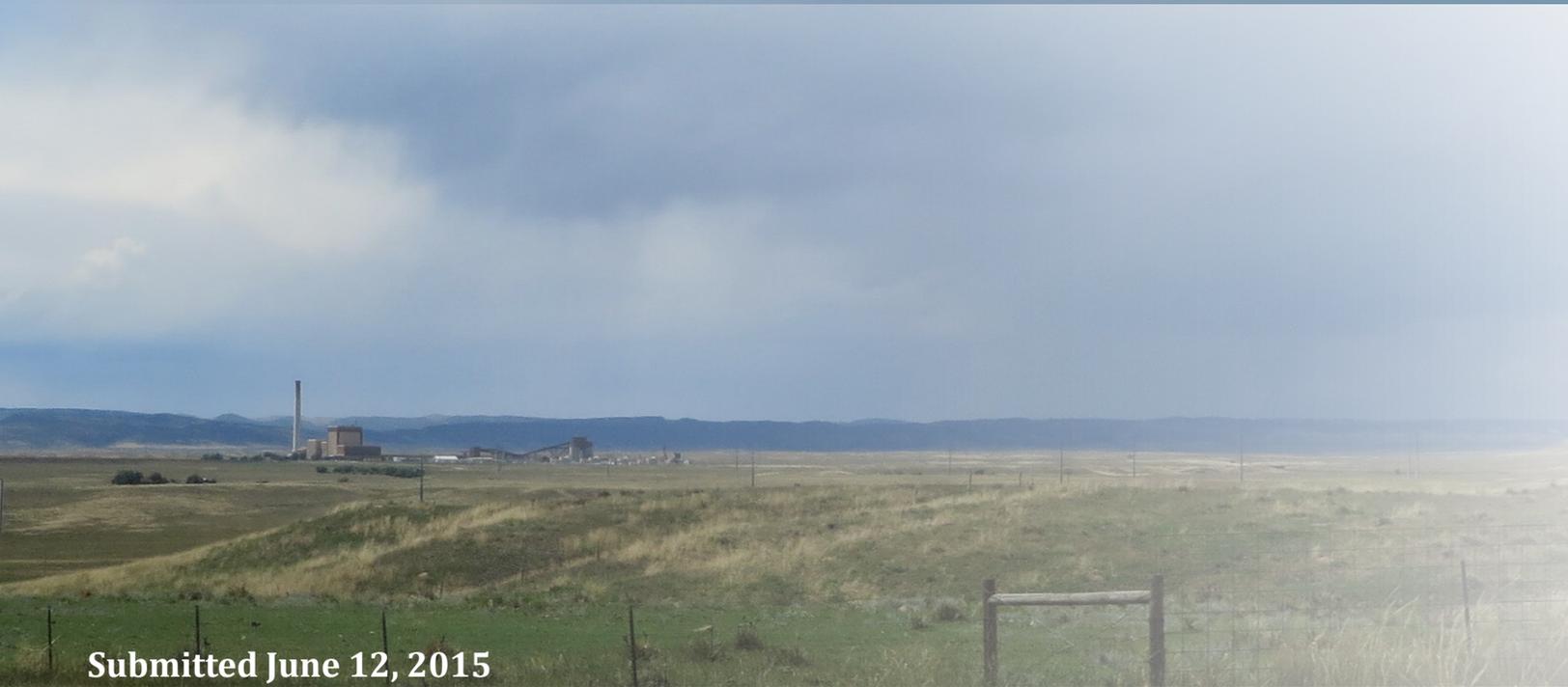
DEVELOPMENT SERVICES TEAM RECOMMENDATION:

The Development Services Team recommends the Larimer County Planning Commission recommend to the Board of County Commissioners Approval of the RAWHIDE SOLAR POWER PLANT 1041 PERMIT AMENDMENT, File # 15-Z1979, subject to the following condition(s):

1. The Development Construction and Building Permits shall be consistent with the approved plan and with the information contained in the RAWHIDE SOLAR POWER PLANT 1041 PERMIT AMENDMENT File # 15-Z1979 except as modified by the conditions of approval or agreement of the County and applicant. The applicant shall be subject to all other verbal or written representations and commitments of record for the RAWHIDE SOLAR POWER PLANT 1041 PERMIT AMENDMENT File # 15-Z1979.
2. Obtain all necessary state and local permits prior to construction, including air and water quality construction permits.
3. On site construction, activities will follow the recommendations of the consultant with respect to any cultural resources identified during construction.
4. Site fencing shall be consistent with the suggested wildlife friendly fencing proposed by the applicants.

Rawhide Energy Station Solar Facility

1041 Permit Amendment



Submitted June 12, 2015

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Appendix A Cultural Resource Letter Report

Appendix B Wetlands Delineation Report

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Revised 1041 Submittal for Rawhide Solar Facility (Bison Solar)

Introduction

Platte River Power Authority ("Platte River") has entered into a land lease and power purchase agreement with Bison Solar LLC for the development of the Rawhide Energy Station Solar Facility, also known as Bison Solar. Bison Solar LLC has retained juwi Inc., and its affiliates, to engineer, procure, and construct ("EPC") additional generation capacity at the Rawhide Energy Station site in northern Larimer County using solar photovoltaic panels and associated equipment. The project location and vicinity are shown on Map 1.

The 1041 Permit Map shows a revised conceptual layout of the proposed solar photovoltaic ("PV") plant, which will have a capacity of up to 30 MW (see Map 3). The proposed PV solar plant will be owned and operated by Bison Solar LLC on land owned by Platte River at the Rawhide Energy Station ("Rawhide"). The proposed Rawhide Energy Station Solar Facility will be partially adjacent to the existing coal-fired unit, five (5) natural gas combustion turbine units and an existing electric substation. The proposed facility will consist of PV modules mounted on racking systems and arranged in multiple blocks. Each block will include at least one pad-mounted inverter and transformer also known as a power station. The solar modules will be placed at least 1.5 feet off the ground. No overhead electrical lines are anticipated.

The revised Rawhide layout is the result of several months of site studies including the investigation of the site geotechnical engineering properties and overall site topography. These changes will lead to a more efficient land use and improve the overall constructability of the proposed solar facility.

Map 2 illustrates the new site arrangement and compares the project footprint that was identified in the September 30, 2014 1041 Permit Application with the revised project footprint that is currently being proposed. In the remainder of this submittal, the September 30, 2014 1041 Permit Application will be referred to as the Original 1041 Submittal.

Project description

Map 3 shows the revised project footprint along with a larger 'bubble' that allows for some adjustments as the project design is finalized. The greatest extent area shown totals approximately 268 acres, but the intent is that the actual project footprint will be limited to approximately 185 acres, which is essentially the same size as the footprint proposed in the Original 1041 Submittal.

Consistency with County Master Plan

Site Overview

Despite the changes to the project configuration, the overall setting remains very similar to that described in the Original 1041 Submittal. As shown in Map 2, some portions of the project layout remain within the original footprint, including the areas located immediately north and east of the substation. This portion of the project was addressed in the Original 1041 Submittal. Note also that a large portion

of the eastern most areas within the original footprint have been removed, including those areas in proximity to Spottlewood Creek.

Map 2 illustrates three additional areas where solar panels are proposed. All three of these areas are located south of the original project footprint. The majority of the new areas are located east of the dirt road that generally parallels the main entrance road to the power plant. This dirt road is referred to in the narrative below as the Lower Dam Road.

The two areas east of the lower dam road are very similar in character and are described as a combined site in the narrative that follows. The area west of the lower dam road however, has a different character. This area was heavily disturbed by construction activities during the development of the power plant. It does not contain any sensitive resources and will not be described further in this submittal.

Areas located east of the Lower Dam Road (“the site”) consist of gently rolling grassland at an elevation of approximately 5,650 feet. Historic site land use in these areas was primarily livestock grazing. The site is currently within the boundary of the Rawhide Energy Station and is occasionally grazed by a captive herd of buffalo that have occupied the site since the early 1980’s. The majority of the upland portion of the site is dominated by blue grama (*Bouteloua gracilis*) and buffalograss (*Buchloe dactyloide*) with an interspersed of western wheatgrass (*Pascopyrum smithii*). Other plant species include fringed sage (*Artemisia frigida*), prickly pear, and four-wing saltbush (*Atriplex canescens*).

Two drainages are located on and adjacent to the site, including a portion of Coal Creek and an unnamed tributary that emerges from Hamilton Reservoir. Both of these drainages support a wetland vegetation community, which is described further in *Section f. Environmental Resources and Hazards*. A no disturbance buffer of at least 50 feet has been defined along these drainages and no impacts to wetlands will result from the project.

Photos 1 and 2 show the character of the revised footprint areas east of the Lower Dam Road.

Urban and Rural Development. The proposed project remains consistent with all relevant policies, e.g. GM-1 and GM-2 as described in the Original 1041 Submittal.

Economic Development. The proposed project remains consistent with all relevant policies, e.g. GM-13 and GM-13-s1 as described in the Original 1041 Submittal. Those policies impacted by the project revisions and where additional information is now available are discussed further below:

GM-13-s1 County-sponsored economic development activities shall be supportive of existing businesses and retain existing employment, as well as fostering new employment opportunities which create a positive impact on the County.

Development of the solar facility at Rawhide supports a number of economic development objectives. Construction of the facility will support the hiring of approximately 100 people for temporary jobs during the 10-month construction period, many of which are expected to be local residents.



Photo 1. View to the southeast across the southern portion of the expanded footprint (“the site”). Several residences located along CR 82 are visible in background.



Photo 2. View to the north across the northern portion of expanded project footprint (“the site”).

Rural Land Use. The proposed project remains consistent with all relevant policies, e.g. LU-4, LU-9, LU-10, LU-10-s1, LU-10-s3, LU-11, LU-11-s1, LU-11-s2, LU-11-s3, LU-13 and LU-15 as described in the Original 1041 Submittal. Those policies impacted by the project revisions and where additional information is now available are discussed further below:

LU-11. Compatibility with adjacent land use shall be considered in the design of all new development. The Rawhide site contains a variety of structures and uses that have an industrial character, including a 500-foot stack and a series of large buildings that house the power plant equipment, some of which reach a height of 200-feet.

Visibility of the solar panels from the nearest public road (CR 82) varies substantially depending on topography. At some locations along CR 82 the panels are screened from view by minor undulations in the landscape while at other locations they would be fully visible. An approximately .5 mile stretch of CR 82 immediately south of the solar panels would have the highest level of visibility.

The solar sites are generally not visible from Interstate 25 (I-25) due to terrain screening, which is approximately 2.5 miles distant at the closest point.

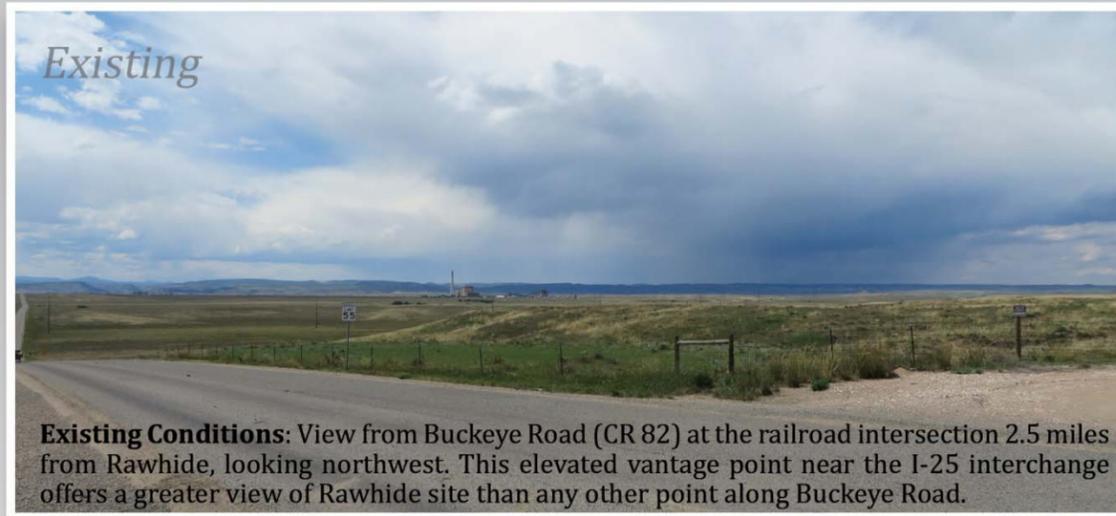
Several residences are located along CR 82 within a distance of 1 mile of the nearest solar panels. The two closest of these are located along CR 82 at a distance of approximately .4 mile to the south. The low-profile solar panels would be visible looking north from these residential properties, but the prevailing viewshed includes portions of the tall stack and other power plant facilities. Therefore, the visual contrast would be in context with other energy facilities.

An additional residence is located approximately .5 mile north of CR 82 and .5 mile east of the solar panels. The panels would be visible from this residence but the view towards them also includes the power plant facilities, which reduce the level of visual contrast.

Three additional residences are located within approximately one mile of the nearest solar panels and two other residences are located just over a mile. All of these residences are located along CR 82. Visibility to the solar panels is reduced at this distance and in some cases by intervening topography. Views from these residences towards the solar panels also take in the power plant facilities, which reduce the level of visual contrast.

Two existing conditions photographs and photo simulations showing the solar facility from a viewpoints along Buckeye Road (CR 82) are presented as Figures 1 and 2. Figure 1 was taken at the only overview vantagepoint on a bluff near I-25 and CR 82 and was also included in the Original 1041 Submittal. Figure 2 was taken across the road from one of the two closest residences, which are located approximately .4 mile away.

Public Facilities and Services. The proposed project remains consistent with all relevant policies, e.g. PF-1 as described in the Original 1041 Submittal.



Existing

Existing Conditions: View from Buckeye Road (CR 82) at the railroad intersection 2.5 miles from Rawhide, looking northwest. This elevated vantage point near the I-25 interchange offers a greater view of Rawhide site than any other point along Buckeye Road.

Photosimulation 1

Distance: The nearest solar panels are 1.88 miles away; the farthest solar panels are 2.0 miles away.

Date Taken: August 8, 2014

Time Taken: 3:57 p.m.

Longitude: 104,58.495 W

Latitude: 40,50.4698 N

Coordinate System: WGS 1984

Camera: Canon PowerShot SX280 HS

Lens: 25 mm



Aerial Rendering

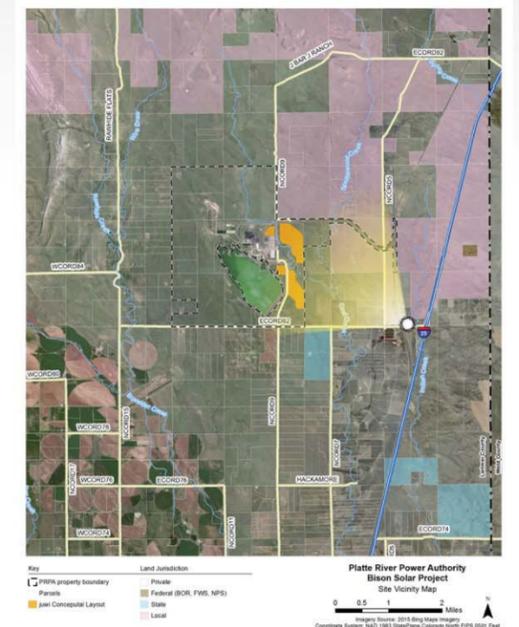
Layout showing proposed photovoltaic panels and power station locations and access roads. View looking west.



Proposed

Simulated Condition: The project appears as a thin grey-blue band to the left and right of the Rawhide Energy Station.

Photo Point Location





Existing

Existing Conditions: View from Buckeye Road (CR 82) at the property line (near 3547 Buckeye Road), looking north-northwest. This viewpoint offers the closest public view of the project.

Photosimulation 2

Distance: The nearest solar panels are .33 miles away; the farthest solar panels are 2.0 miles away.

Date Taken: June 4, 2014

Time Taken: 11:12 a.m.

Longitude: 105,00.5953 W

Latitude: 40,50.482 N

Coordinate System: WGS 1984

Camera: Canon PowerShot SX280 HS

Lens: 4 mm



Aerial Rendering

Layout showing proposed photovoltaic panels and power station locations and access roads. View looking north-northwest.



Proposed

Simulated Condition: The project appears as rectilinear rows of grey-blue panels to the right of the Rawhide Energy Station.

Photo Point Location



Transportation. The proposed project remains consistent with all relevant policies, e.g. TR-2 as described in the Original 1041 Submittal. Those policies impacted by the project revisions and where additional information is now available are discussed further below:

TR-2 New development shall occur only where existing transportation facilities are adequate or where necessary improvements will be made as part of the development project.

Adequate transportation facilities exist to serve the needs of the proposed project. Construction access for materials and workforce would be from existing roads. It is expected that I-25 and Buckeye Road (CR 82) would be the most common route to the facility.

Total traffic volume during the 10-month construction period is estimated at about 110 vehicles a day with peak AM/PM hourly traffic volume of about 100 vehicles. Ten (10) truck deliveries per day are expected throughout construction. Weekday average daily traffic (“ADT”) counts on CR 82 near the I-25 Interchange is 425 vehicles (2011), and 550 vehicles west of County Road 9 (2011). This temporary increase in traffic is not expected to result in traffic problems on any existing roads and no road improvements are proposed. Work and delivery schedules may be shifted to reduce the number of additional vehicles during times of peak traffic, if necessary.

During the operation phase, the unmanned facility will generate no more than two trips per week for routine and periodic maintenance utilizing lightweight trucks and cars. Commuting patterns are not expected to change for existing employees or for deliveries of supplies to the site. No long-term traffic effects would result.

Environmental Resources and Hazards. The proposed project remains consistent with all relevant policies, e.g. ER-1, ER-1-s1, ER-3, ER-13, ER-14, ER-15, ER-17, and ER-2 as described in the Original 1041 Submittal. Those policies impacted by the project revisions and where additional information is now available are discussed further below:

Available County mapping was reviewed, which indicated that no wildfire hazards or geologic hazards and topography occur at the proposed solar facility site. The site does not contain any slopes greater than 30%. The site is gently rolling with little topographic relief. No evidence of unstable slopes or other geologic hazards are present.

Other environmental resources identified in the environmental checklist are discussed in the remainder of this section.

Cultural Resources and Geologic Features. As discussed in the Original 1041 Submittal, two cultural sites that may be eligible for inclusion in the Colorado Register of Historic Places (CRHP) and the National Register of Historic Places (NRHP) were identified. Both sites were located within the original project footprint. One of these sites (5LR13325) is an historic trash scatter. This site is not located within the revised project footprint and no disturbance to this site will result from the project.

The second site (5LR13326) is an historic homestead site. The dimensions of this site are 263 feet by 171 feet and it consists of 8 features and a sparse artifact scatter, including wire nails, iron scraps, glass fragments, and other materials. The homestead site remains within the planned project footprint. For this reason, further investigations of this site were conducted in 2014 and a report documenting these investigations was completed in June of 2015. This report was prepared by Logan Simpson and is entitled *“Phase I Data Recovery Excavations at 5LR13326 within the Rawhide Energy Station, Larimer County, Colorado”*. It is available for review upon request. A summary of key findings from the report is provided below.

Mechanical excavations within 5LR13326 did not identify any new subsurface features between the previously reported surface features. Hand and mechanical excavations within the features indicate most are shallowly buried and contain few artifacts, the majority of which are in postabandonment contexts. The density of artifacts within features is very low to moderate; surface artifact density between features is low to moderate. The paucity of surface artifacts, the shallow depth of features with few artifacts, the use of a raised floor at the habitation structure, and modern intrusions demonstrate that 5LR13326 has limited potential for additional excavations. Therefore, Logan Simpson recommends that 5LR13326 is not eligible for listing in the NRHP or CRHP and no additional work is necessary.

Although unlikely, if construction activity does encounter subsurface archaeological resources at this site, the construction work in the vicinity of the discovery would stop until an archaeologist has an opportunity to examine the find and evaluate its significance.

Several additional sites were identified on the Rawhide Energy Station that are located outside of the original project footprint and therefore were not discussed in the Original 1041 Submittal. These sites are shown in Map 4. All but one of these sites (5LR527) is located well outside of the revised project footprint and will not be disturbed by project construction or operations. Site 5LR527 is an open lithic scatter recorded during the 1977 Rawhide Energy Station survey (Lutz 1977). A possible 3-meter-diameter tee-pee ring was recorded during the 1977 survey, in addition to several lithic artifacts. The surface artifacts were collected at the time of the first recording. The site was given an assessment of Field Needs Data in regards to NRHP eligibility. The site is located near Coal Creek just south of the transmission line that conducts power generated at the Rawhide Energy Station.

Due to its proximity to the revised project footprint, a site visit was undertaken by permitted Colorado archaeologist Travis R. Bugg on May 12, 2015. The purpose of this visit was to establish the boundary of 5LR527 so that impacts to the site could be avoided. The possible tee-pee ring was relocated and the surrounding area was walked with transects radiating from the tee-pee ring to determine if the site boundary had changed. A rock alignment measuring 5 meters long, oriented northeast to southwest,

was discovered 55 meters southwest of the tee-pee ring. The identification of the rock alignment extended the original site boundary 10 meters to the south. The results of this site visit are presented in Appendix 1.

As a result of these investigations, a 25-foot buffer was defined around the boundary of the re-mapped site and no disturbance will occur within this buffer area.

ER-3 Larimer County shall endeavor to protect all identified wetland areas of the County, in recognition of their importance in maintaining water quality, wildlife habitat, flood protection and other critical environmental functions.

Wetlands were delineated in the project vicinity through a field survey completed in May of 2015. The results of the survey are depicted in Map 7, which shows the extent of waters of the US in relation to the revised project footprint. Photos 3 and 4 show examples of the wetlands that occur along Coal Creek. A summary of the wetland delineation effort is attached as Appendix 2

As shown in Map 7, the project layout largely avoids disturbance to waters of the US and their associated wetlands. The one exception results from the crossing of a channelized portion of Coal Creek by a buried electric cable. Temporary disturbance resulting from construction of the electric cable would amount to less than one tenth of an acre, which is below the threshold required for a permit under the terms of Nationwide Permit (NWP) Number 12 for Utility Line Activities. Even so, any disturbance to the channel will be repaired and the site returned to a condition similar to that currently present.

No disturbance to other wetlands would occur and a 50-foot wide, no disturbance buffer will be maintained. The two-track road that bisects the Coal Creek wetlands south of the power line will not be improved or utilized for project construction or operations.

ER-4 Larimer County shall endeavor to protect all areas identified as highest priority on the Important Wildlife Habitat Map, which is adopted by reference as part of the Master Plan.

Available county mapping was reviewed, which indicates that the site does not contain many of the habitats identified in the Important Wildlife Habitat map, including mule deer winter concentration areas, elk severe winter range, bighorn sheep lambing areas, and mule deer and elk migration corridors. Pronghorn winter concentration area, winter range, and overall range is present at the Rawhide site. Duck winter range is located adjacent to Spottewood Creek and may also occur along portions of Coal Creek. Larimer County's important wildlife habitat mapping, which was extended to the south in order to include the revised project footprint, is presented in Map 6 through Map 9. Habitat for several avian species, which focuses on Hamilton Reservoir, occurs in the project vicinity.

Rare and Endangered Plants and Animals. The County Master Plan requires consideration of rare and endangered plants and animals. The Colorado Natural Heritage Program (CNHP) data base was reviewed



Photo 3. View of wetland area along Coal Creek



Photo 4. View of wetland area along Lower Coal Creek near eastern site boundary.

and no species at risk or habitats were identified. The site is located within the boundaries of the Rawhide Flats Macro Site, which covers a majority of northeastern Larimer County from I-25 West to the foothills and from Wellington to the Wyoming border.

A review of the rare vegetation data from Larimer County, in Map 7, shows water through portions of the site. Cottonwoods, willows, and other riparian vegetation are found in limited occurrences along Coal and Spottlewood Creeks.

The project area provides potential habitat for Ute ladies' tresses orchid (*Spiranthes diluvialis*) and Colorado butterfly plant (*Gaura neomexicana ssp. Coloradensis*). These are the two federally listed plant species with the potential to occur in Larimer County. This potential habitat is limited to the riparian areas along Coal Creek. No disturbances will occur to those portions of Coal Creek.

A prior field survey conducted in September of 2014 concluded that the segment of Coal Creek just upstream of the expansion site as well as Spottlewood Creek did not include the thick riparian vegetation needed to support the federally listed species Preble's meadow jumping mouse (*Zapus hudsonius preblei*). This assessment also applies to the lower portions of Coal Creek through the site. In any event, no disturbance to these potential habitat areas will result from the project.

The 2014 site survey also documented the occurrence of northern leopard frogs (*Rana pipiens*), a Colorado state species of concern, along Spottlewood Creek. A possibility exists that this species also occurs along the lower portion of Coal Creek.

No indications of black-tailed prairie dog (*Cynomys ludovicianus*) occupation were observed. Also, no burrowing owls (*Athene cuniculari*) were observed at the time of the field visit.

Sparsely vegetated and short grass prairie provide potential nesting habitat for mountain plover (*Charadrius montanus*), a Colorado state species of concern.

Recent and Present Uses

The information presented in the Original 1041 Submittal remains accurate. However, it should be noted that the revised project layout no longer requires vacation of the CR 15 right-of-way ("ROW") or adjustments to the layout in order to preserve the ROW.

Potential Impacts

The information presented in the Original 1041 Submittal remains accurate with the exception of the items noted below:

As previously discussed under *Compatibility with adjacent land use shall be considered in the design of all new development*, some of the panels are now closer to CR 82 and several residences in the project vicinity, most of which are located along CR 82. As a result, the project will be more visible from these viewpoints than was described in the Original 1041 Submittal. However, the solar facility is located on an industrial site and views towards the solar facility are influenced by the 500-foot stack, large

buildings, and other elements of the Rawhide facilities. Therefore, the proposed use remains compatible with adjacent land use.

The color of solar PV modules varies slightly between vendor and cell technology. The most prominent technologies are dark blue in color, with white backing. These technologies generally have an aluminum frame. Panels are designed to absorb light and in direct sunlight put off less glare than a body of water.

Existing and Proposed Utilities

The information presented in the Original 1041 Submittal remains accurate – some minor changes are stated below:

The solar PV plant will not consume any fuel and will not produce any emissions. The electrical output will be connected to the existing substation, which will require the addition of two (2) 34.5 kV substation breakers, an additional transformer and a connection through buried cables.

The system will generate energy only during daylight hours and when adequate solar irradiance is available.

Sewage Disposal

The proposed solar PV plant will not require any sewage disposal system. Sewage disposal during construction will be contractor provided onsite portable toilets with routine offsite disposal and maintenance.

Site Access

Construction access for materials and workforce would be from existing roads. It is expected that I-25 and Buckeye Road (County Road 82) would be the most common route to the facility.

Traffic volume during the 10-month construction period is estimated at about 110 vehicles a day with peak AM/PM hourly traffic volume of about 100 vehicles. Weekday ADT counts on County Road 82 near the I-25 Interchange is 425 vehicles (2011), and 550 vehicles west of County Road 9 (2011). This temporary increase in traffic is not expected to result in traffic problems on any existing roads and no road improvements are proposed.

During the operation phase, the unmanned facility will generate no more than two trips per week for routine and periodic maintenance utilizing lightweight trucks and cars. Commuting patterns are not expected to change for existing employees or for deliveries of supplies to the site. No long term traffic effects would result.

Site Grading

Some areas may require grading cut and fill of up to 10 feet in order to reduce the site slope gradient to 6% or less to accommodate the installation of the solar PV array systems. Areas that are relatively flat will only require some leveling to eliminate any minor undulations on the ground surface.

Project Development Schedule

Some of the events shown in the Original 1041 Submittal have already occurred. A revised project schedule showing future milestones is provided below:

- 3/01/16 – Estimated groundbreaking date
- 5/2/16 – Estimated solar panel installation start date
- 12/01/16 – Estimated construction completion/commercial online date

At this point we do not foresee any other permit requirements aside from the 1041 Permit amendment and those related to construction activities.

Construction Schedule

Construction of the facility is proposed to begin in Q1 of 2016 and expected to be completed by Q4 of 2016.

Employees

During the approximately 10-month construction phase of the project, it is anticipated about 100 people will be working on the project site. Construction work is anticipated to be done Monday through Friday on either eight- or ten-hour days and only done on Saturdays when needed to regain the construction schedule. No evening or night work is anticipated.

During the operation phase, this will be an unmanned facility. Approximately 102 people are currently employed at the Rawhide site. No long term traffic effects would result.

Public Input

Platte River held a neighborhood meeting on the project in November 2014. In addition, Larimer County held a series of public hearings on the project, beginning in November 2014 (Planning Commission) and two hearings before the Board of County Commissioners in December 2014 and January 2015.

Legal Description

PARCEL ONE: Rawhide Energy Station

The Northeast $\frac{1}{4}$ of Section 5, Township 10 North, Range 68 West of the 6th P.M.

PARCEL TWO: Rawhide Energy Station

The Northwest $\frac{1}{4}$ of Section 4, Township 10 North, Range 68 West of the 6th P.M.

PARCEL THREE: Rawhide Energy Station

The Southwest $\frac{1}{4}$ of Section 4, Township 10 North, Range 68 West of the 6th P.M.

PARCEL FOUR: Rawhide Energy Station

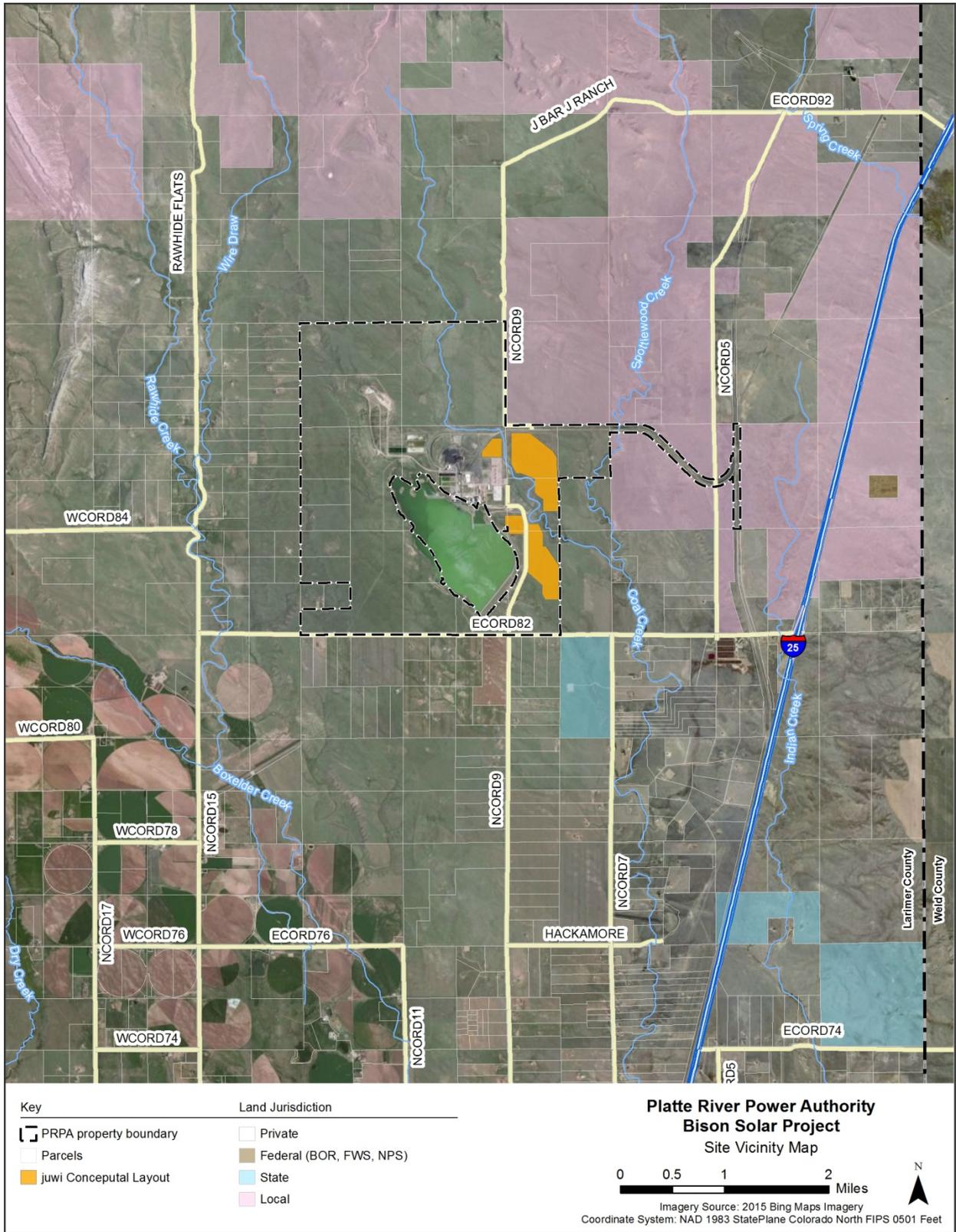
The Northwest $\frac{1}{4}$ of Section 9, Township 10 North, Range 68 West of the 6th P.M.

PARCEL FIVE: Rawhide Energy Station

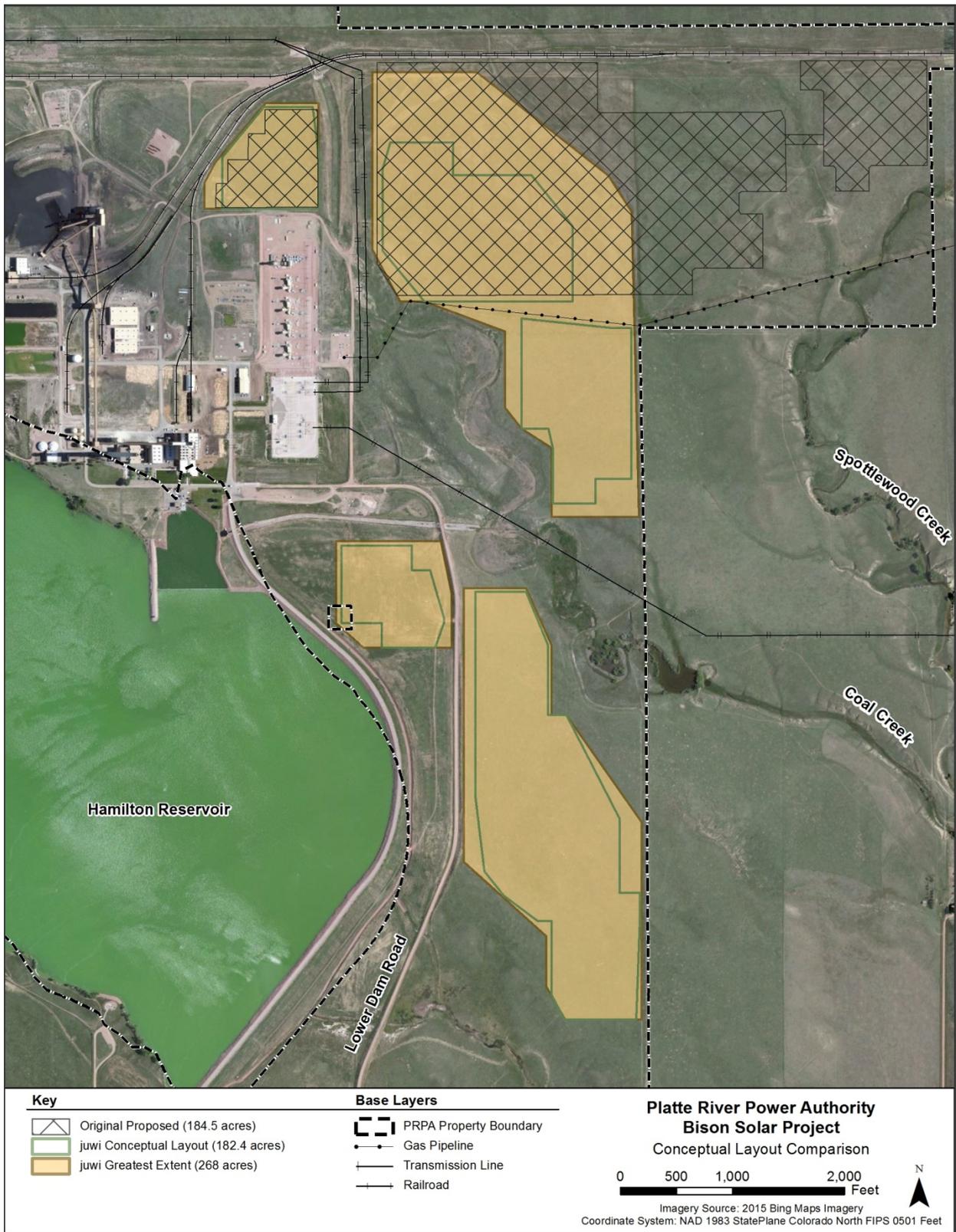
The Southwest $\frac{1}{4}$ of Section 9, Township 10 North, Range 68 West of the 6th P.M.

Site and Inventory Maps

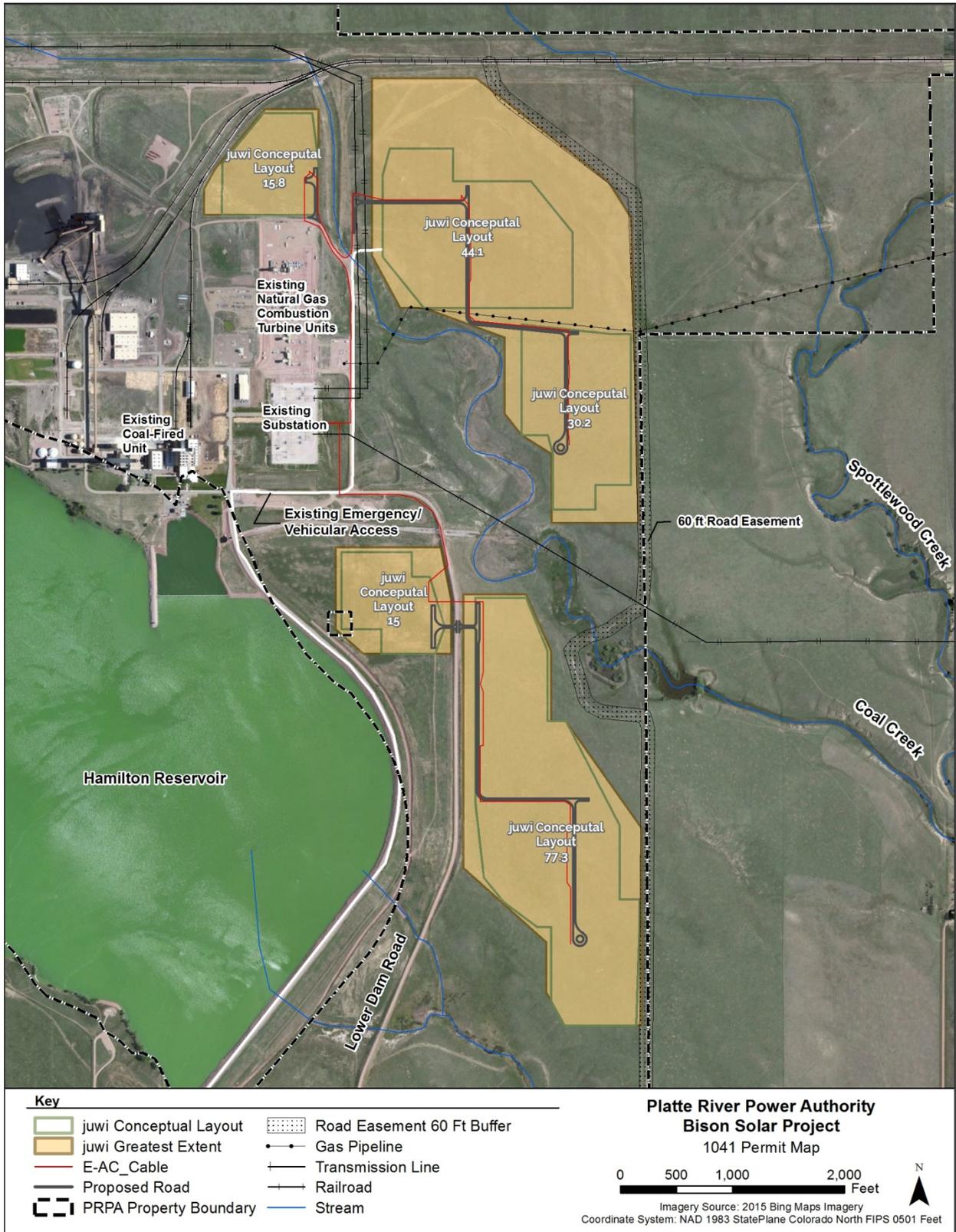
Map 1 Site Vicinity Map



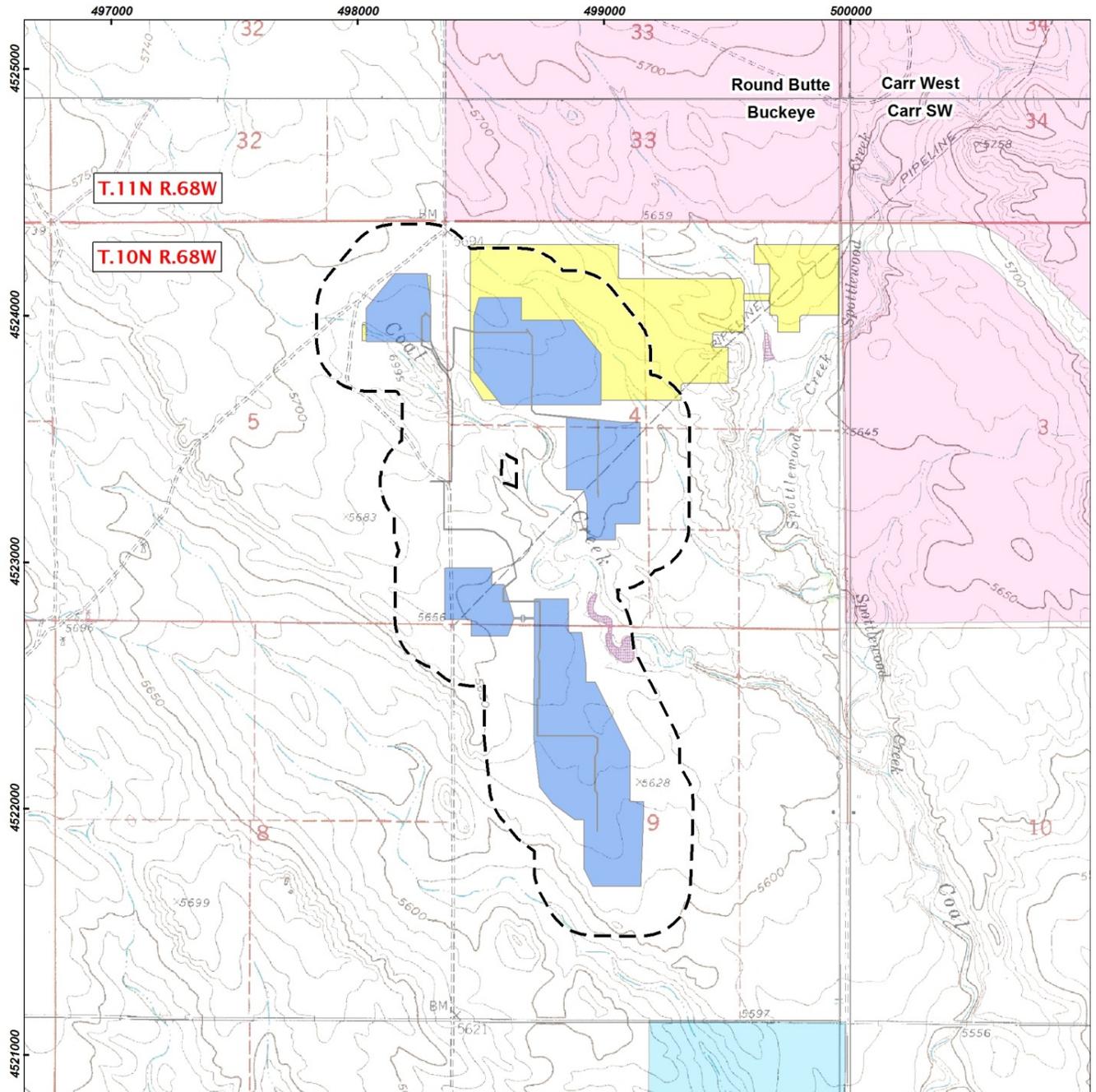
Map 2 Comparison of September 30, 2014 1041 Permit Application Project Footprint with Current Project Footprint



Map 3 1041 Permit Map showing Revised Project Footprint 'Bubble' area for Project Layout Refinement



Map 4 Study Area for Identification of Previously Recorded Cultural Sites



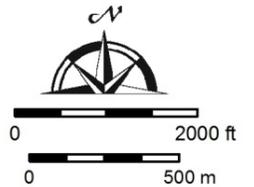
Source: USGS 7.5' Quadrangles:
 Buckeye (1978), Round Butte (1975),
 Carr West (1975), and Carr SW (1975);
 Larimer County, Colorado
 Land Jurisdiction provided by Colorado
 State University COMaP (2011)
 NAD 1983, UTM Zone 13

Key

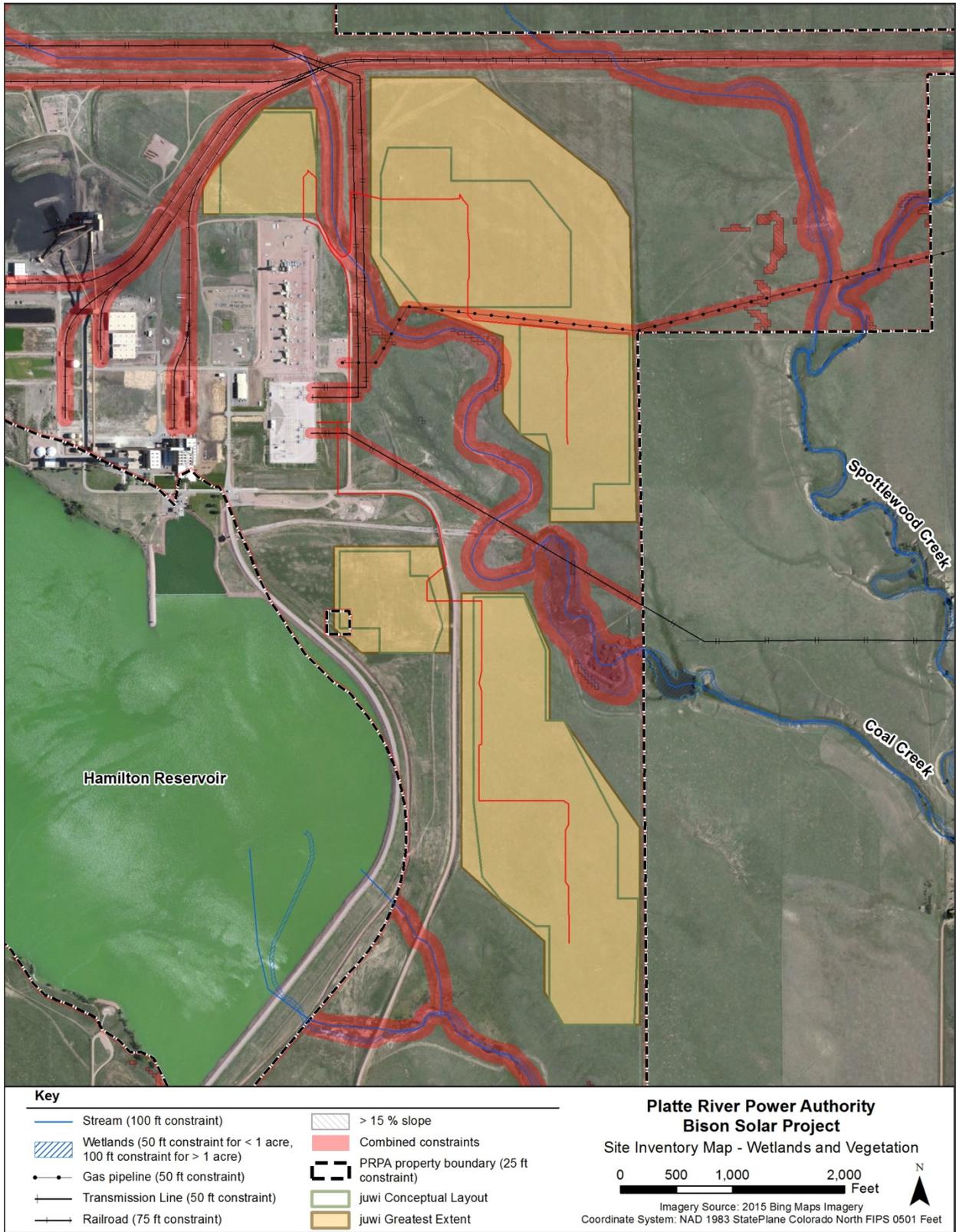
- Study area
- Proposed juwi Footprint 185.5 Acres
- Proposed Original Footprint 184.5 Acres

Land Jurisdiction

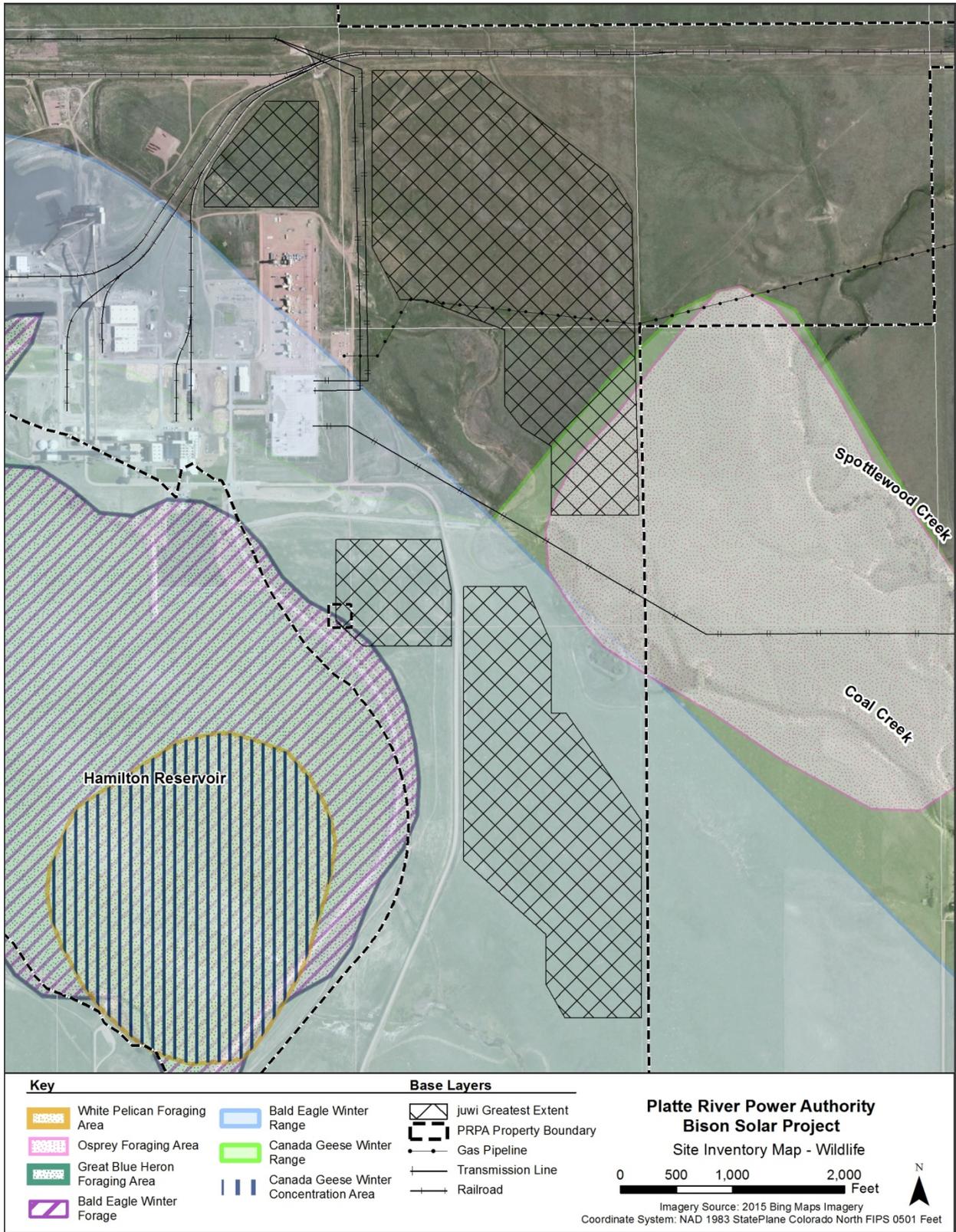
- Private
- State
- City of Fort Collins



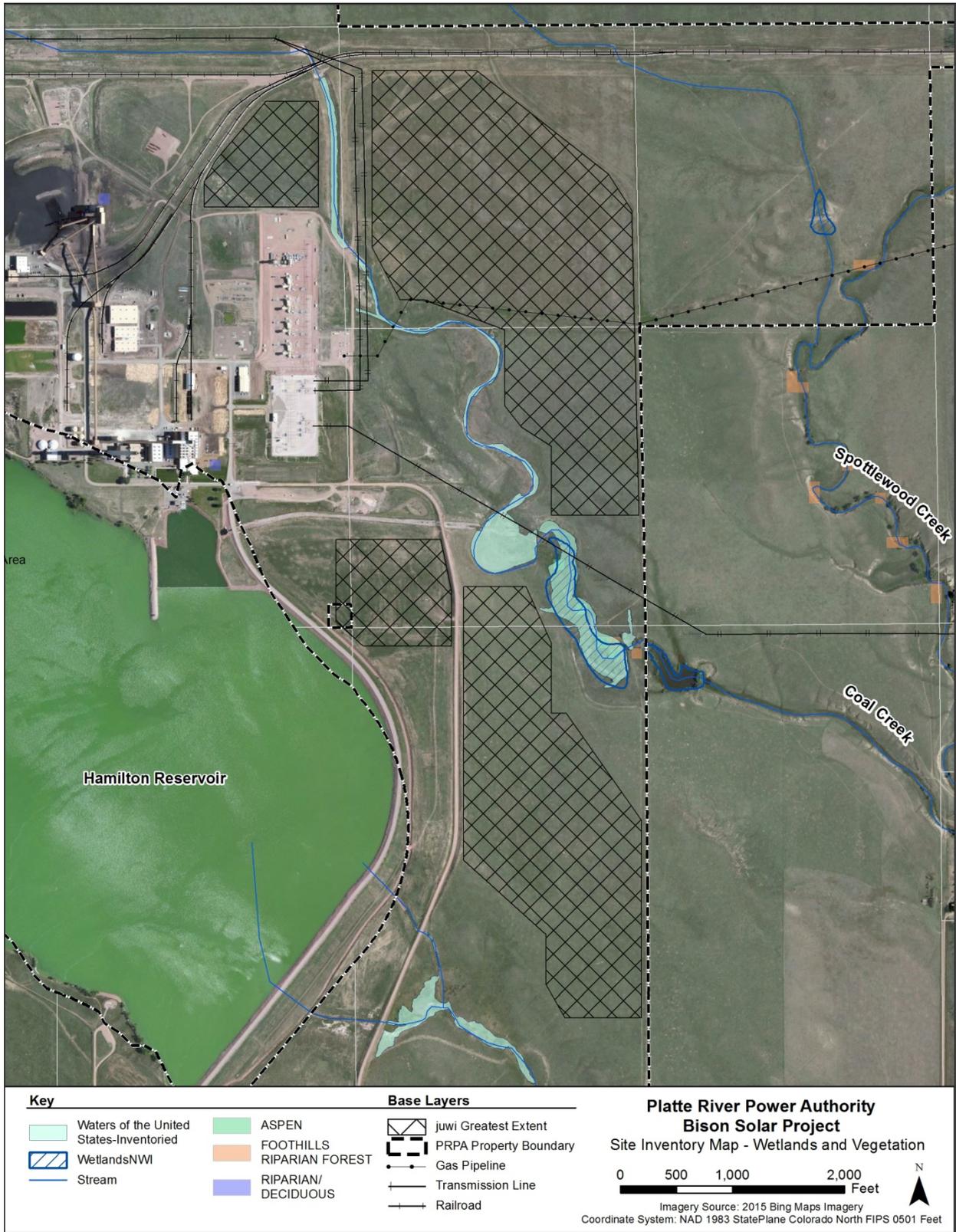
Map 5 Solar Facility Siting Constraints Map



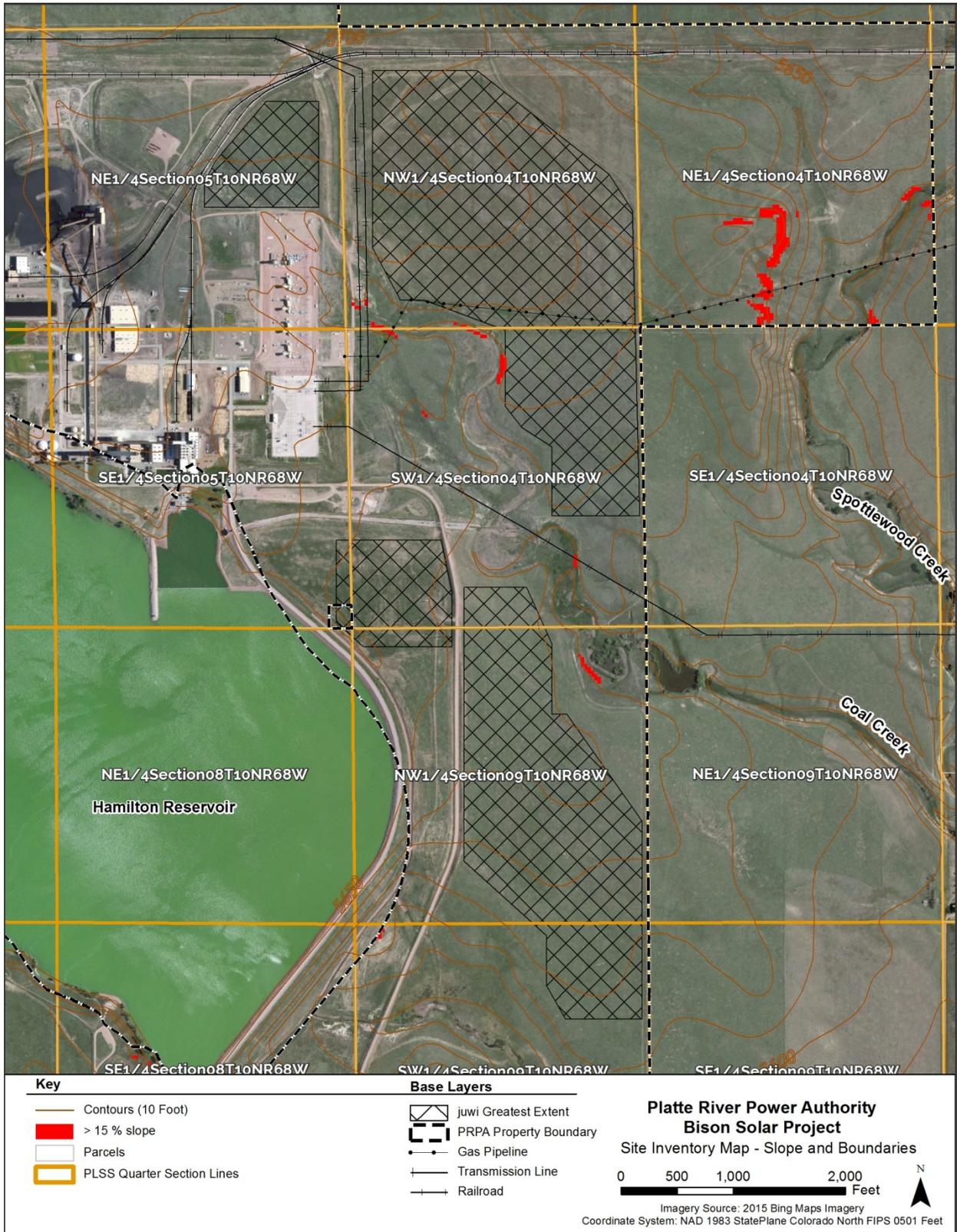
Map 6 Site Inventory Map- Wildlife



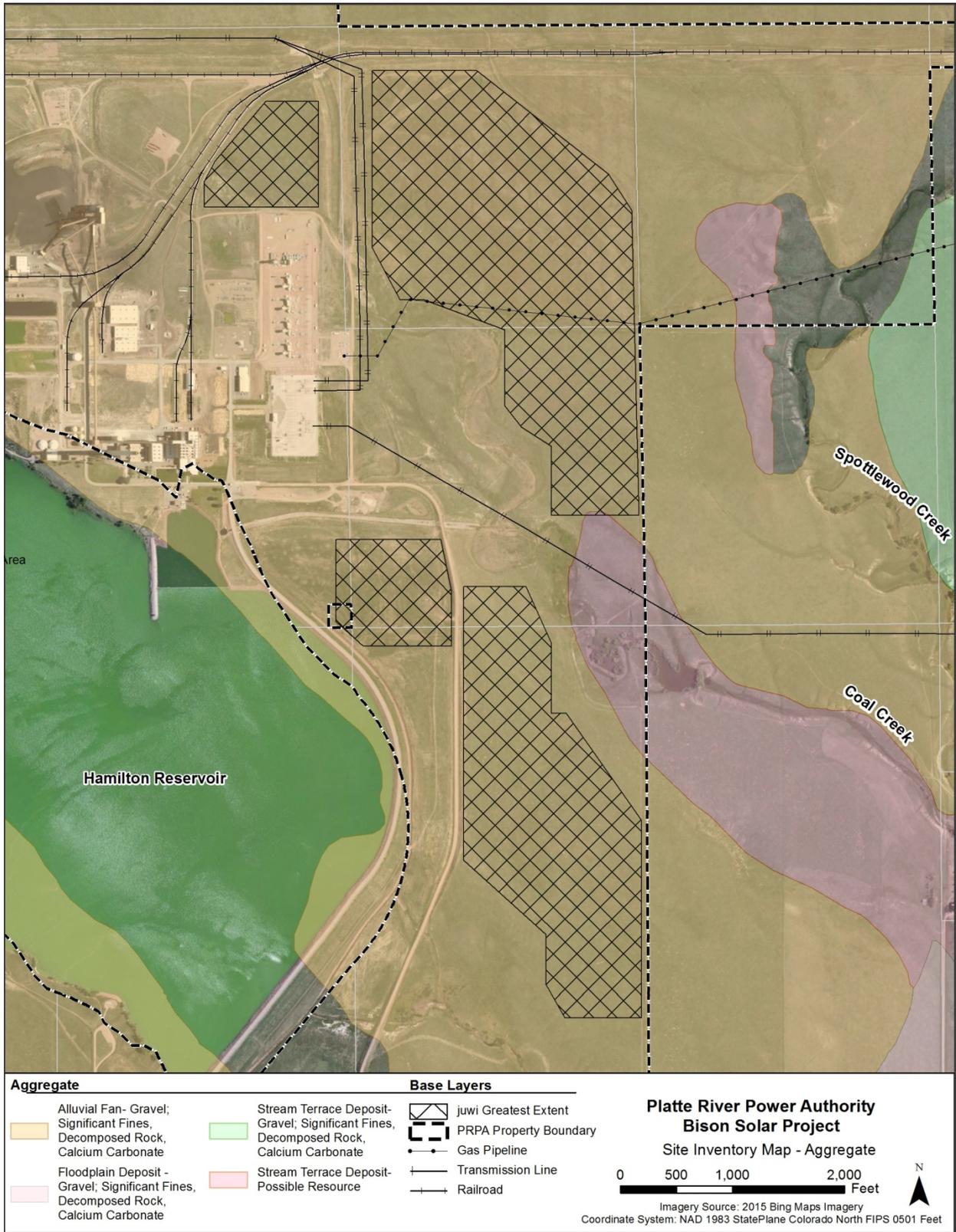
Map 7 Site Inventory Map- Wetlands and Vegetation



Map 8 Site Inventory Map- Slope and Boundaries



Map 9 Site Inventory Map- Aggregate



Appendices

Appendix A Cultural Resource Letter Report



June 4, 2015

Sarah Davis
Project Planner
juwi Solar
1710 29th Street, Suite 1068
Boulder, Colorado 80301

The purpose of this letter report is to outline the previously recorded cultural resources and prior investigations conducted within a one-eighth-mile buffer of the proposed Bison Solar Project footprint. Special attention will be paid to the condition and extent of 5LR.527, a previously recorded archaeological site located within the footprint of the aforementioned Bison Solar Project. A 1041 Permit was previously drafted by Logan Simpson, Inc. (Logan Simpson) and submitted for the Rawhide Energy Station Solar Project, for the Platte River Power Authority (PRPA). juwi Solar was selected to design and build the solar panel arrays for the project. The project name and solar array footprint has been subsequently altered. This letter report serves to support the amendment of the 1041 permit to reflect the recent design changes.

The proposed footprint of the solar panel arrays (including 2.88 miles of connecting electrical line) encompasses a total of 185.5 acres of the private PRPA Rawhide property in Larimer County, Colorado (Figure 1). The Bison Solar Project intersects the following sections (Figure 2):

Township 10 North - Range 68 West, Sections 4, 5 and 9

A study area comprised of a one-eighth-mile buffer was applied to the Bison Solar Project footprint. The total acreage of the study area is 676.5 acres of private PRPA land, and intersects the following sections (Figure 3):

Township 10 North - Range 68 West, Sections 4, 5, 8 and 9

Logan Simpson conducted a file search for the original PRPA Rawhide Solar Project through the Colorado Historical Society/Office of Archaeology and Historical Preservation (OAHP) Compass online database on August 6, 2014. This database provides records of all archaeological investigations that have been conducted and all cultural resources (prehistoric and historic archaeological sites) that have been recorded previously in the project area. Included are records of National Register of Historic Places (NRHP) properties. Additionally, OAHP provided cultural resources data extending to a one-mile buffer around the original proposed project area. Logan Simpson also reviewed historic General Land Office (GLO) records and historic USGS topographic maps to determine if vestiges of trails, transportation routes, homesteads, or other cultural resources may be present in the project area.

The Class I results show that the entirety of the Bison Solar Project footprint (185.5 acres), with the exception of two small slivers (totaling 3.7 acres) has been previously inventoried for cultural resources. Prior investigations include two linear surveys, two block surveys, and a data recovery project; they are summarized in Table 1 and shown on Figure 3.

There are 6 previously recorded sites within a one-eighth-mile buffer (known as the Study area) of the proposed footprint. They include 5LR.523, 5LR.525, 5LR.526, 5LR.527, 5LR.563, and 5LR.13326. They are summarized in Table 2 and shown on Figure 3.

Two of the sites intersect the current proposed juwi solar footprint: 5LR.527 and 5LR.13326. 5LR.13326 is a historic homestead site that was discovered during the 2014 cultural survey of the original proposed Rawhide Solar Facility (Bugg 2014), and was the subject of a data recovery effort later that same year (Hackbarth 2014). The site was assessed as Field Not Eligible once the data recovery was complete; it was recommended that no further work be done to the site. Site 5LR.527 is an open lithic scatter recorded during the 1977 Rawhide Energy Station survey (Lutz 1977). A possible 3-meter-diameter tee-pee ring (Feature 1, Figure 4) was recorded during the 1977 survey, in addition to several lithic artifacts. The surface artifacts were collected at the time of the first recording. The site was given an assessment of Field Needs Data in regards to NRHP eligibility. The site is located on the eastern edge of the southern-most solar panel array area, close to Coal creek (Figure 3).

A project site visit was undertaken by permitted Colorado archaeologist Travis R. Bugg on May 12, 2015. The purpose of this visit was to establish the boundary of 5LR.527 so that juwi could avoid impacts to the site. The possible tee-pee ring was relocated and the surrounding area was walked with transects radiating from the tee-pee ring to determine if the site boundary had changed. A rock alignment (Feature 2, Figure 5) measuring 5 meters long, oriented northeast to southwest, was discovered 55 meters southwest of Feature 1. The identification of Feature 2 extended the original site boundary 10 meters to the south (Figure 6).

In addition to the 6 previously recorded sites, three USGS map features of note appear on the 1909 USGS Livermore topographical map (Figure 7). The features are black squares, indicative of structures. Indeed, Structure 1 corresponds with the location of 5LR13326. Structure 2 is situated along the reservoir road that leads to the Rawhide Energy station and is outside of the solar footprint. Finally, Structure 3 is located at the northern edge of the southernmost panel array footprint. This area was inspected during the May 12th site visit; nothing was noted at the location.

As a matter of best practice cultural resources management, efforts should be taken to avoid NRHP-eligible or potentially eligible archaeological sites. For the purposes siting the solar facility, it is recommended to avoid site 5LR.527, as it is potentially eligible for listing in the NRHP and intersects the current proposed project area. We recommend a qualified archaeologist be employed to flag a 25 ft buffer around the revised boundary to demarcate it from ground disturbing activities.

In absence of a Section 106 of the NHPA-nexus, decision to perform a Class III inventory is the land owner's prerogative. However, in order to determine the existence of other significant archaeological sites in the project area, a Class III intensive inventory is recommended. Please contact me if you have any questions about this letter report.

Sincerely,

A handwritten signature in black ink, appearing to read "Travis Bugg".

Travis R. Bugg
Archaeologist/GIS Analyst
Logan Simpson, Inc.
123 N. College Ave., Ste. 206
Fort Collins, CO 80524
(970) 449-4100
tbugg@logansimpson.com

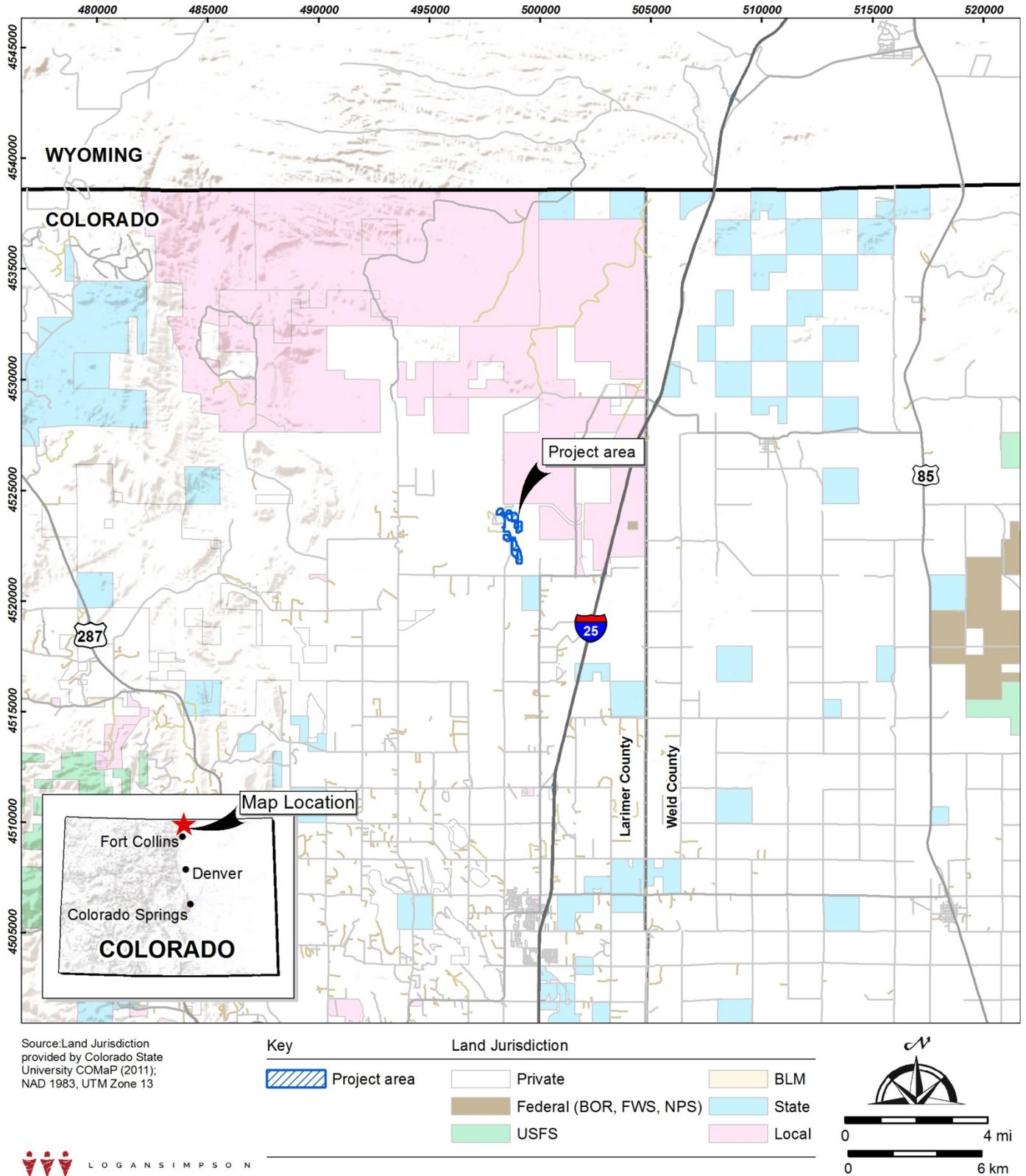


Figure 1. Location of project area.

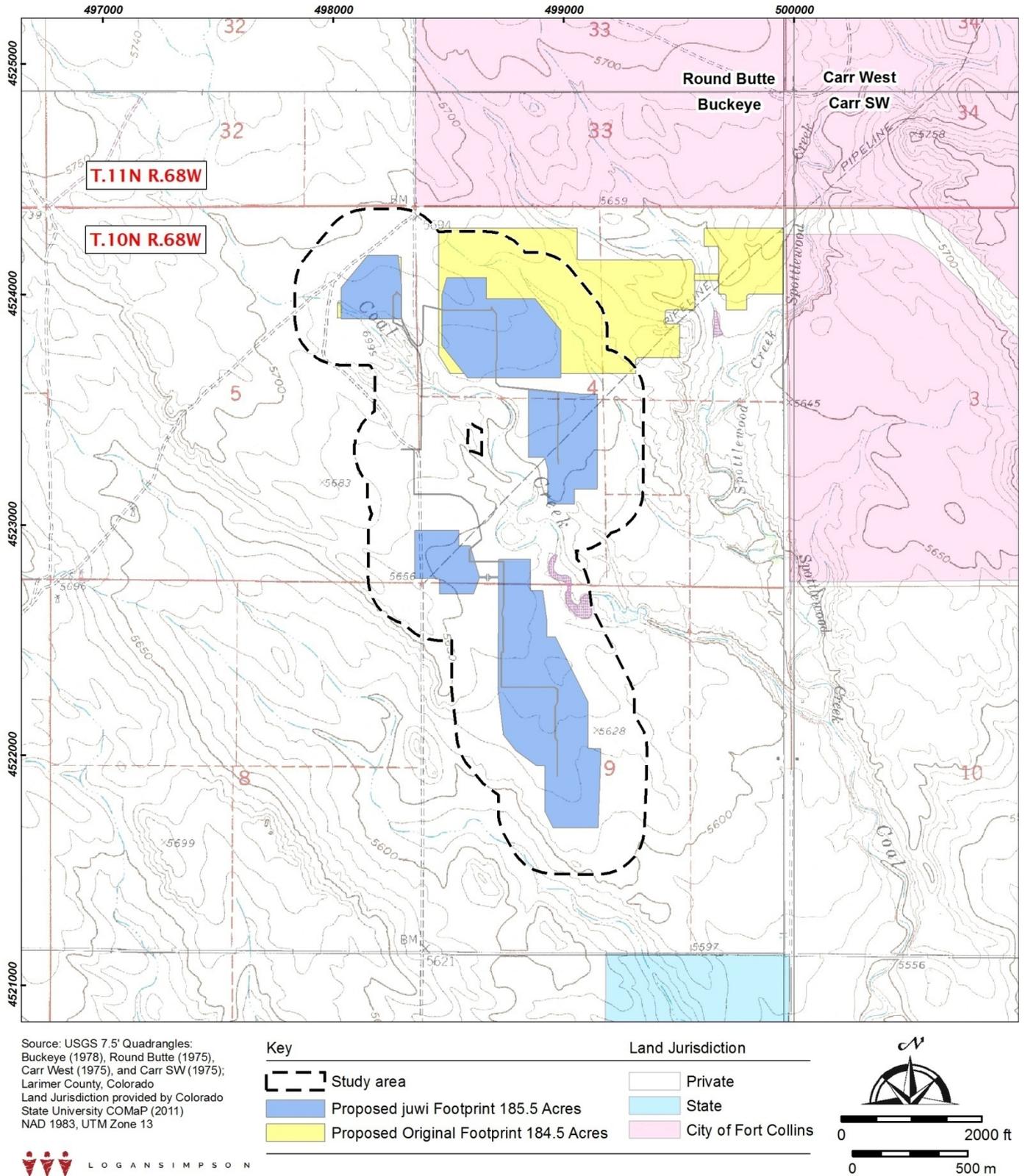
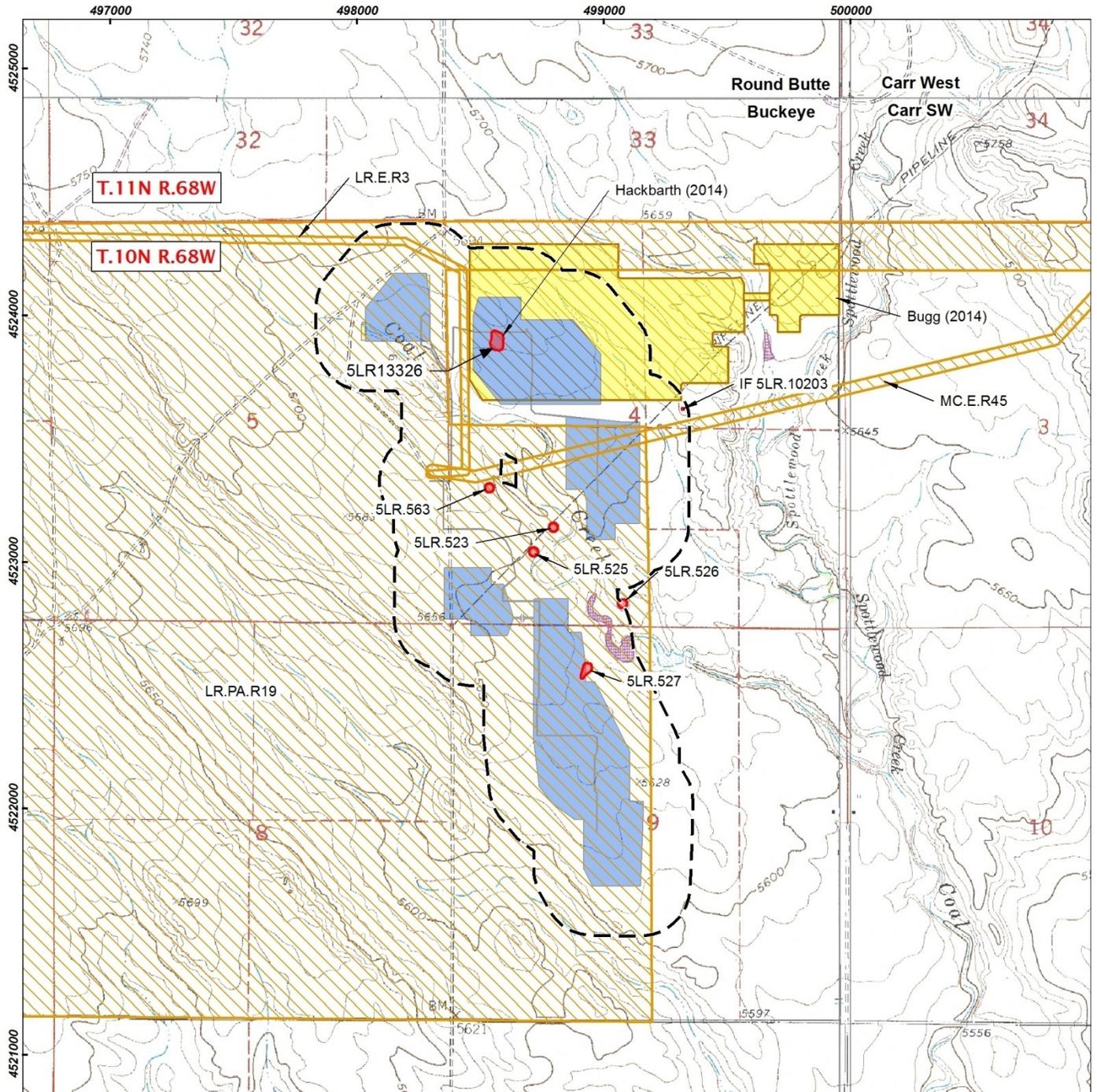


Figure 2. 1:24,000 scale map of project area and Class I study area with land jurisdiction.



Source: USGS 7.5' Quadrangles: Buckeye (1978), Round Butte (1975), Carr West (1975), and Carr SW (1975); Larimer County, Colorado NAD 1983, UTM Zone 13

Key

- Proposed juwi Footprint 185.5 Acres
- Proposed Original Footprint 184.5 Acres
- Previous survey
- Previously recorded site

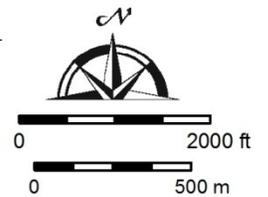


Figure 3. 1:24,000 scale map showing previously recorded sites and previous projects within the Class I study area.



Figure 4. View of 5LR.527, Feature 1, facing southeast.



Figure 5. View of 5LR.527, Feature 2, facing northeast.

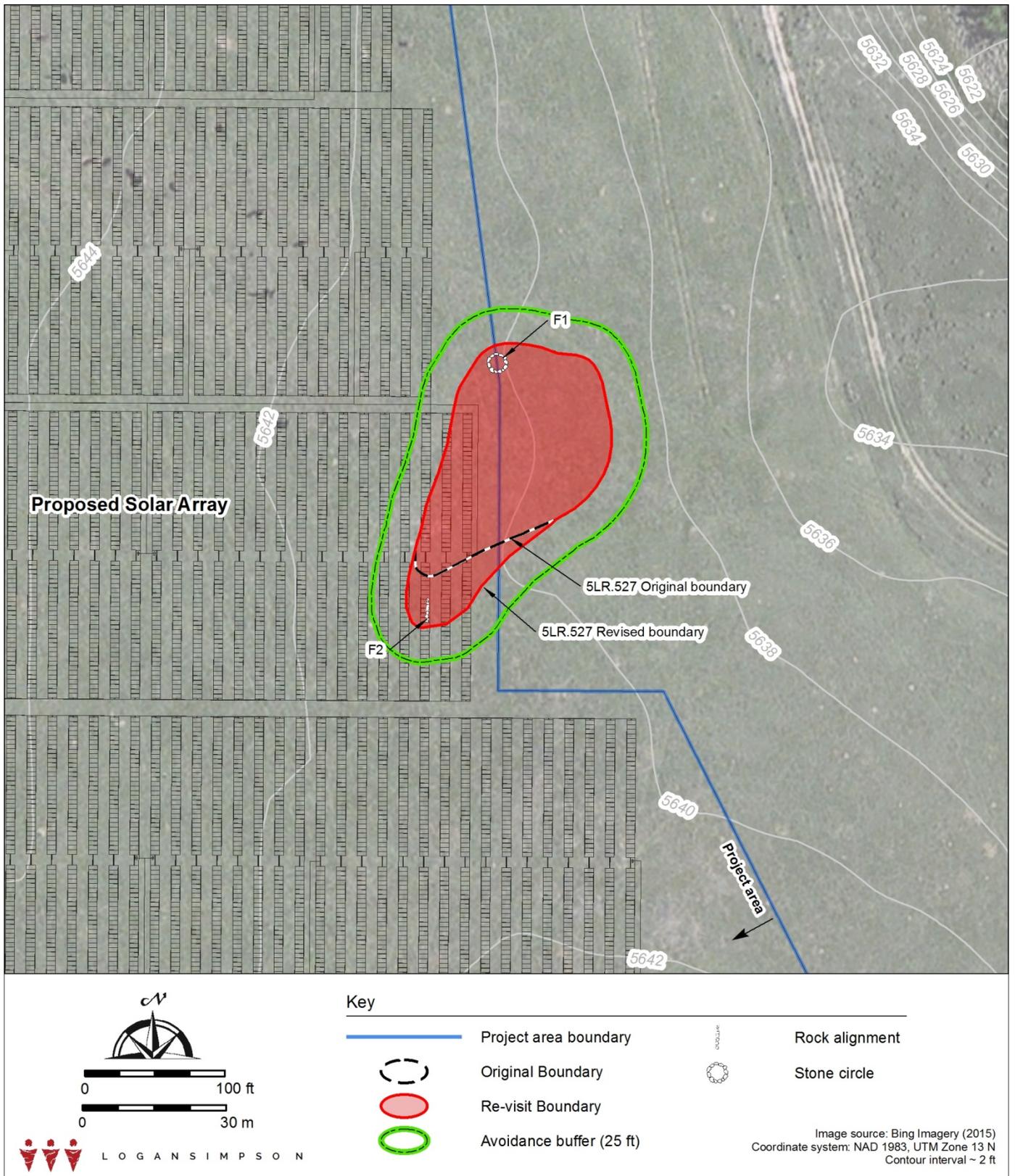
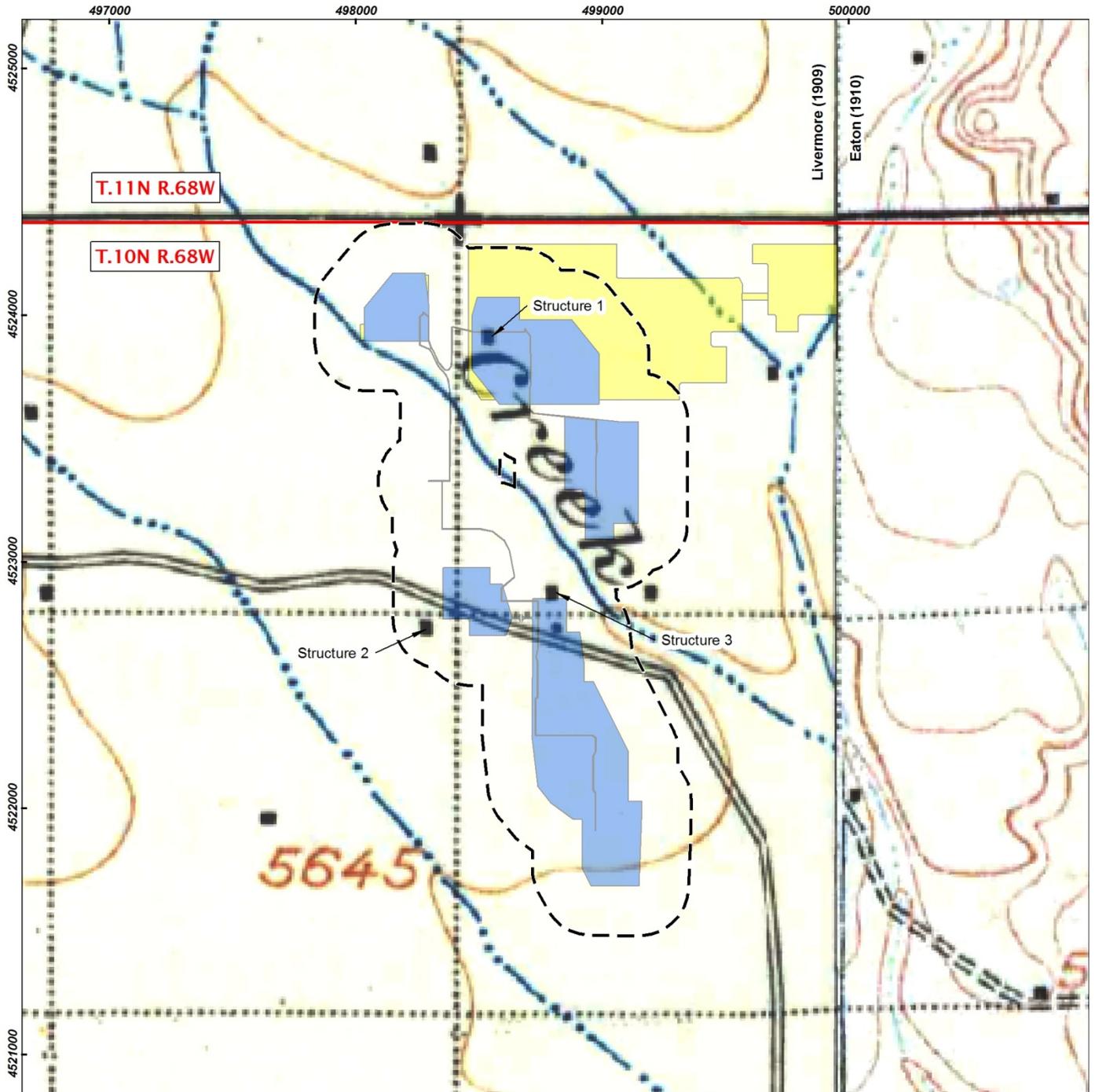


Figure 6. Site 5LR.527 revised boundary and avoidance buffer.



Source: USGS 1:125,000 Quadrangle Map Series:
Livermore (1909), Eaton (1910)
Larimer County, Colorado
NAD 1983, UTM Zone 13

Key

- Study area
- Proposed juwi Footprint 185.5 Acres
- Proposed Original Footprint 184.5 Acres

0 2000 ft
0 500 m



Figure 7. 1:24,000 scale map showing 1909 USGS map features within the Class I study area.

Table 1 - Class I File Search Data: Previously conducted surveys within one-eighth mile of the Bison Solar Project location.

OAHP Survey ID and Year	Project Name	Project Type	Investigation Type
LR.E.R3 2001	Platte River Power Authority Timberline Substation and Richards Lake Substation To Rawhide Generation Plant Segments of the Western Area Power Administration Flatiron-Poudre Transmission Line Class III Cultural Resource Inventory Larimer County, Colorado	Class III	Linear
LR.PA.R19 1977	Rawhide Energy Project: An Archaeological - Historical Survey for the Platte River Power Authority, Larimer County, Colorado	Class III	Block
MC.E.R45 2001	Platte River Power Authority Routing Study For The Rockport To Rawhide Natural Gas Pipeline, Class III Cultural Resource Inventory Weld and Larimer Counties, Colorado (Greystone 846-10)	Class III	Linear
Bugg 2014	A Cultural Resources Survey of 179 Acres of Private Land Located Near the Rawhide Energy Station, Larimer County, Colorado	Class III	Block
Hackbarth 2014	Phase I Data Recovery Excavations at 5LR13326 within the Rawhide Energy Station, Larimer County, Colorado	Class III	Data Recovery

Table 2 - Class I File Search Data: Previously recorded sites and map features of interest within one-eighth mile of the Bison Solar Project location.

Site Number/ Name	Site Age	Site Type	NRHP Eligibility*	USGS 7.5' Quadrangle	Township	Range	Section(s)
5LR.523	Prehistoric	Open camp	FND	Buckeye	10N	68W	4
5LR.525	Prehistoric	Open camp	FND	Buckeye	10N	68W	4
5LR.526	Prehistoric	Open camp	FND	Buckeye	10N	68W	4
5LR.527	Prehistoric	Open lithic scatter	FND	Buckeye	10N	68W	9
5LR.563	Prehistoric	Open camp	FND	Buckeye	10N	68W	4
IF 5LR.10203	Prehistoric	Isolated find	FNE	Buckeye	10N	68W	4
5LR.13326	Historic	Homestead	FNE	Buckeye	10N	68W	4
1909 USGS Structure 1	Historic	Unknown structure	N/A	Buckeye	10N	68W	4
1909 USGS Structure 2	Historic	Unknown structure	N/A	Buckeye	10N	68W	8
1909 USGS Structure 3	Historic	Unknown structure	N/A	Buckeye	10N	68W	4

FND = Field Needs Data, FNE = Field Not Eligible

Appendix B Wetlands Delineation Report

LAARTZ ENVIRONMENTAL SERVICES, LLC.
6310 ROOKERY ROAD
FORT COLLINS, COLORADO 80528
(970) 214-6065

May 14, 2015

Mr. Tom Keith
Logan Simpson Design
123 North College Avenue, Suite 206
Fort Collins, CO 80524

Re: Wetland and other Waters of the U.S. Delineation for the *Rawhide Solar Project*

Dear Mr. Keith:

Laartz Environmental Services, LLC. (Laartz Environmental) completed the wetlands and other Waters of the U.S. (WOUS) delineation on May 11, 2015 for the Rawhide Solar Project (Proposed Project) located in Larimer County, Colorado. The Proposed Project Area is situated in Sections 4 and 9, Township 10 North, Range 68 West and approximately 18 miles north of Fort Collins, Colorado.

The objective of the Proposed Project is to construct and install solar panels east of the Rawhide facilities. The objective of the delineation and assessment is to map wetlands and other WOUS within the Proposed Project Area to assist the client in planning for minimization of impacts to WOUS while adhering to U.S. Army Corps of Engineers (USACE) regulations.

This report summarizes the results of the surveys including mapped wetlands and other WOUS boundaries within the Project Area. The following attachments are included for your records and review.

- Attachment A: Wetlands and other Waters of the U.S. Delineation Map
- Attachment B: Representative Photographs
- Attachment C: USACE Wetland Determination Data Forms

Field Delineation Methodology

The wetlands and other WOUS delineations were conducted in accordance with the *USACE 1987 Wetland Delineation Manual* as amended by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (2010 Version 2.0)*. The routine method was chosen for delineating the project wetlands due to the approximate size of the wetlands within the proposed project boundaries, as well as the relative homogeneity with respect to vegetation, soils, and hydrologic regime. Using the three-parameter approach, via test hole characteristics, the wetland/upland boundaries were defined and mapped. Sample point locations were selected to represent typical wetland and upland conditions in the Proposed Project Area. The delineated boundaries and sample locations were mapped (Attachment A), photographed (Attachment B), and recorded on USACE Wetland Determination Data Forms (Appendix C).

At each sample point, percent total cover of dominant plant species was estimated. Species were then classed as OBL (obligate wetland species), FACW (facultative wetland species), FAC (facultative species), FACU (facultative upland species) or UPL (upland species). Wetland and non-wetland areas were distinguished by the presence/absence of dominant hydrophytic vegetation (FAC, FACW, OBL), recorded and observed hydrology, and hydric soils. Wetland hydrology indicators include geomorphic position, presence of standing water and/or saturated soil profile conditions, drainage patterns, watermarks, sediment deposits, and oxidized root channels in the upper 12 inches of the soil profile. Potential hydric soils indicators include the presence of a histic epipedon, thick dark surface, redox features, gleying, depleted profile conditions, an aquic soil moisture regime, high organic matter content and/or a stripped matrix in sandy soils.

Soils

Soil map units were identified with a Custom Soil Survey Map developed for the Proposed Project Area (U.S. Department of Agriculture, <http://websoilsurvey.nrcs.usda.gov/app/>). According to the survey, the Proposed Project Area soils consist of three dominate soil map units; Altvan Loam, Bainville-Keith Complex, and Larimer-Stoneham Complex.

The Altvan Loam classification consists of well-drained, mixed alluvium soils that occur on terraces, fans and benches. The surface layer (0-7 inches) is mainly loam, following by an alluvium mix of clay loam, loam, sandy clay loam, fine sandy loam, silt loam, gravelly sand, and gravelly coarse sand (7-60 inches). Depth to the water table is typically greater than 80 inches.

The Bainville-Keith Complex occurs on benches and consists of well-drained soils derived from weathered shale and siltstone. The surface layer (0-5 inches) is silt loam, followed by silt loam and clay loam (5-24 inches) with weathered bedrock below. Depth to the water table is typically greater than 80 inches.

The Larimer-Stoneham Complex occurs on terraces, fans and benches and consists of well-drained soils formed from alluvium. The surface layer (0-7 inches) consists of fine sandy loam, followed by loam (7-22 inches), gravelly sandy clay loam, gravelly loam, sandy clay loam, and very gravelly sand (22-30 inches). Depth to water table is typically greater than 80 inches.

Several soil cores were sampled during the delineation process using a 2-inch wide 3-foot long screw auger to a depth of 12 inches. For detailed soil sampling purposes, soil pits were excavated with a sharpshooter spade to a depth of 12 to 18 inches. Upland soils (Sample Point U1) were slightly lighter in color (10YR 3/2 and 3/3) throughout the profile than wetlands soils with a texture of sandy clay loam and gravelly sand. Wetland soils (Sample Point W1) were darker in color (10 YR 3/2, Gley1 3/10Y) and contained a texture of silty clay to clay loam. The soils sampled at W1 and U1 were characteristic of the Bainville-Keith Complex described previously. Wetland soils were distinguished from uplands soils by the presence of the following hydric soil indicators recorded during pit excavation and several soil cores including hydrogen sulfide odor (A4), thick dark surface (A12), 1 cm muck (A9), depleted below dark surface (A11) and loamy gleyed matrix (F2). Refer to the USACE Wetland Determination Data Forms in Attachment C for detail.

Hydrology

The Proposed Project is situated within the South Platte River Watershed (HUC 10190007). Hydrology is sourced by on-site creeks, the Rawhide facility stormwater runoff, and Hamilton Reservoir. The northernmost creek, Coal Creek, is an ephemeral vegetated dry wash that was dry at the time of sampling with the exception of wetlands downstream that formed from two-track roads and weirs controlling flow. In addition to the defined bed and bank, the following Ordinary High Water Mark (OHWM) indicators were present throughout the majority of Coal Creek; mud cracks, scour, benches, changes in particle size, surface rounding, and drift in the form of vegetative debris. The southern creek on the property, an unnamed Spottlewood Creek tributary, receives the majority of its hydrology from Hamilton Reservoir. This creek was flowing at the time of sampling with a wide wetland fringe. Wetland hydrology within both creeks was characterized by the following hydrology indicators; surface water (A1), a high water table (A2), salt crust (B11), hydrogen sulfide odor (C1), oxidized rhizospheres on living roots (C3), saturation visible on aerial imagery (C9), and geomorphic position (D2).

Vegetation

Project Area wetlands are characterized by a Palustrine Persistent Emergent (PEM1) wetland fringe extending out from a Riverine Intermittent Vegetated Streambed (R4SB7) classification as described in detail in Cowardin's 1979 *Classification of Wetlands and Deepwater Habitats of the United States*. The PEM1 wetlands include hydrophytic vegetation that dominates up to a subtle elevation rise and OHWM used to delineate the upland/wetland boundary. Several dominant wetland species were distinguished. Broadleaf cattail (*Typha latifolia*) and common 3-square bulrush (*Schoenoplectus americanus*) dominated closer to the center; and inland saltgrass (*Distichlis spicata*), baltic rush (*Juncus balticus*), and reed canarygrass (*Phalaris arundinacea*) dominated in drier areas, and many times, bordered the uplands.

Percent of dominant species that rated OBL, FACW, or FAC at the wetlands sample point within the OHWM was 100%, fulfilling the hydrophytic vegetation component required for wetland indicators.

Table 1 lists prevailing plant species identified during the surveys and their wetland “indicator status” as listed for the Great Plains Region in Colorado by the USFWS. Representative photographs of data points, vegetation, and topography for the Proposed Project are included in Attachment B.

Table 1 Prevailing Vegetation Observed within the Proposed Project Area

Scientific Name	Common Name	Colorado Great Plains Indicator*
<i>HERBACEOUS PLANTS</i>		
<i>Achillea millefolium</i>	Common yarrow	FACU
<i>Agropyron cristatum</i>	Crested wheatgrass	UPL
<i>Andropogon gerardii</i>	Big bluestem	FACU
<i>Artemisia frigida</i>	Prairie sagewort	UPL
<i>Asclepias speciosa</i>	Showy milkweed	FAC
<i>Bouteloua curtipendula</i>	Sideoats grama	UPL
<i>Bouteloua gracilis</i>	Blue grama	UPL
<i>Bromus inermis</i>	Smooth brome	UPL
<i>Bromus tectorum</i>	Cheatgrass	UPL
<i>Cirsium arvensis</i>	Canada thistle	FACU
<i>Conyza canadensis</i>	Canadian horseweed	UPL
<i>Distichlis spicata</i>	Inland saltgrass	FACW
<i>Eleocharis palustris</i>	Common spikerush	OBL
<i>Elymus lanceolatus</i>	Streambank wheatgrass	FACU
<i>Equisetum arvense</i>	Field horsetail	FAC
<i>Equisetum hyemale</i>	Scouringrush horsetail	FACW
<i>Glycyrrhiza lepidota</i>	American licorice	FACU
<i>Grindelia squarrosa</i>	Curlycup gumweed	UPL
<i>Juncus balticus</i>	Baltic rush	FACW
<i>Kochia scoparia</i>	Kochia	NL
<i>Lactuca serriola</i>	Prickly lettuce	FAC
<i>Mellilotus officinalis</i>	Common sweet clover	FACU
<i>Pascopyrum smithii</i>	Western wheatgrass	FACU
<i>Phalaris arundinacea</i>	Reed canarygrass	FACW
<i>Polygonum lapathifolium</i>	Curlytop knotweed	OBL
<i>Rumex crispus</i>	Curly dock	FAC
<i>Schedonorus arundinaceus</i>	Tall fescue	UPL
<i>Schizachyrium scoparium</i>	Little bluestem	FACU
<i>Schoenoplectus americanus</i>	Common 3-square bulrush	OBL
<i>Schoenoplectus tabernaemontani</i>	Softstem bulrush	OBL
<i>Stipa comata</i>	Needle and thread	UPL
<i>Thinopyrum intermedium</i>	Intermediate wheatgrass	UPL
<i>Typha latifolia</i>	Broadleaf cattail	OBL
<i>TREES AND SHRUBS</i>		
<i>Elaeagnus angustifolia</i>	Russian olive	FACU
<i>Salix amygdaloides</i>	Peachleaf willow	FACW
<i>Salix exigua</i>	Sandbar willow	FACW
<i>Populus deltoides</i>	Plains cottonwood	FAC

*OBL (Obligate Wetland) – Almost always occurs in wetlands, rarely in uplands.

FACW (Facultative Wetland) – Usually occurs in wetlands but occasionally found in uplands.

FAC (Facultative) – Commonly occurs in wetlands or uplands.

FACU (Facultative Upland) – Occasionally occurs in wetlands but usually occurs in uplands.

UPL (Obligate Upland) – Rarely occurs in wetlands, almost always in uplands.

Jurisdictional Considerations

The Proposed Project Area wetlands and other Waters of the U.S. boundaries were mapped using a Garmin GPS unit and subsequently mapped (Wetland Delineation Map, Attachment A). A subtle elevation and vegetation change from upland to hydrophytic, as well as several previously reported OHWM indicators characterized the wetland delineation line. EDM delineated boundaries for two creeks as depicted on the wetland delineation map. Coal Creek is a mostly vegetated ephemeral dry wash at the northern end with wetlands forming to the south. The unnamed tributary to Spottlewood Creek was flowing at the time of sampling and contained dense wetland vegetation. Both creeks are connected to the Cache la Poudre River, which flows into the South Platte River.

USACE Implications

The Proposed Project may involve the trenching or boring of a utility cable beneath the substrate of Coal Creek. In addition, the 2-track road bisecting Coal Creek to the south may need re-enforcement for construction traffic. Both of these construction activities would be permitted under a Nationwide Permit (NWP) No. 12 for Utility Line Activities. Under this permit, unlimited temporary impacts are allowed with the assurance the wetlands and streams would be restored to pre-construction grade, elevation and vegetative cover per the NWP definitions and general conditions. Permanent fill material up to 1/10th of an acre is allowed before USACE notification is required. Fill material greater than 1/10th of an acre would require mitigation and a pre-construction notification to the USACE. The USACE then has 45 days to respond with authorization. These are a few of the potential scenarios. If permanent fill material is likely to occur within these drainages, Laartz Environmental would be happy to review total impacts and advise on USACE requirements.

Please review the attached map, photographs and data sheets at your convenience and if you require further information or have any questions regarding this review, please contact me at 970-214-6065.

Sincerely,

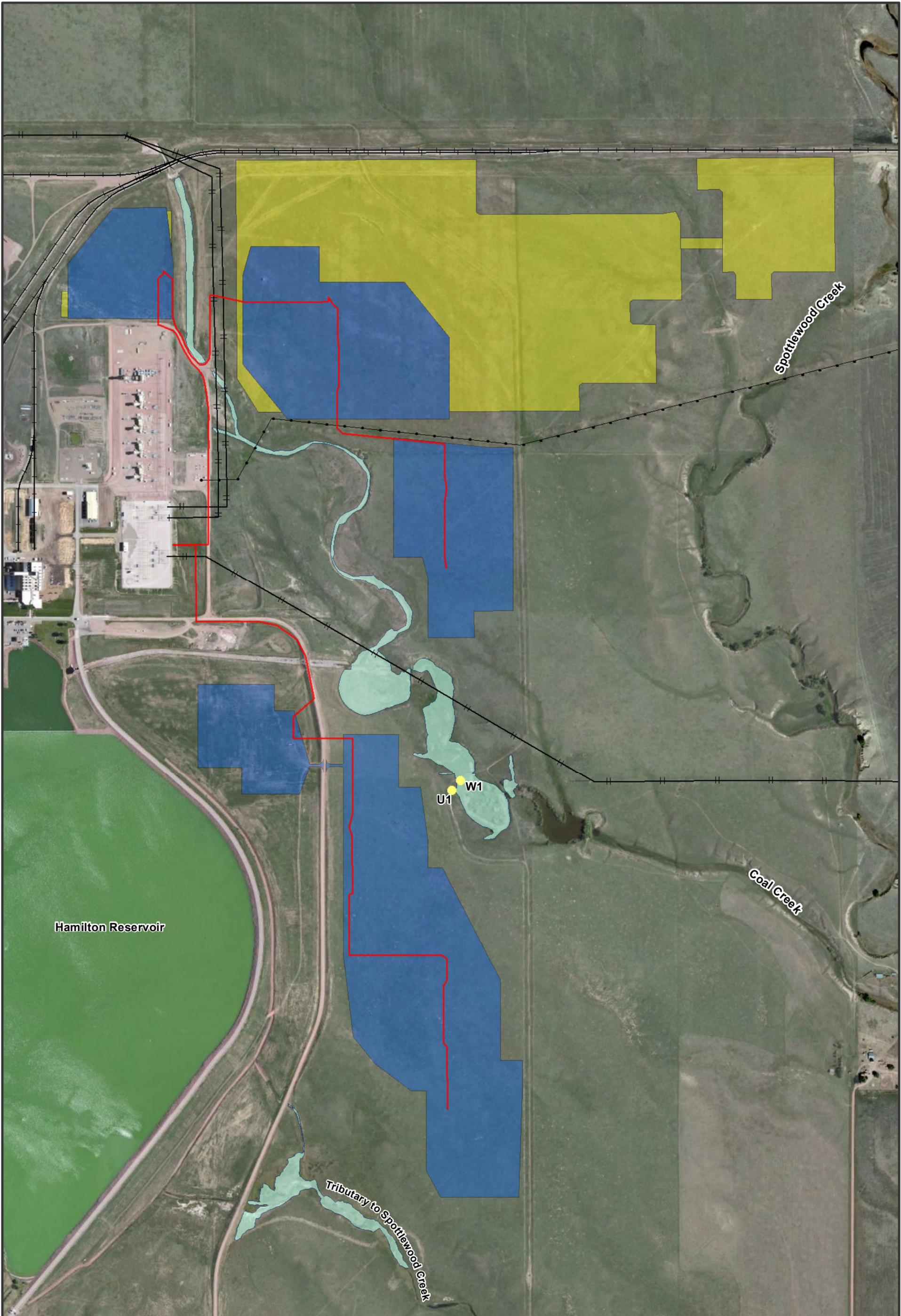
A handwritten signature in black ink, appearing to read 'A. J. Laartz', with a stylized flourish at the end.

Amy J. Laartz
Principal, Laartz Environmental Services, LLC.

Attachments

Attachment A

**Wetlands and other Waters of the U.S.
Delineation Map**



**Platte River Power Authority
Bison Solar Project**
Proposed Solar Panel Locations
Waters of the United States

Key	
	Proposed juwi Footprint 182.0 Acres
	Proposed Original Footprint 184.5 Acres
	Sample Point
	Waters of the United States



Imagery Source: 2015 Bing Maps Imagery
Coordinate System: NAD 1983 StatePlane Colorado North FIPS 0501 Feet



Attachment B

Representative Photographs



Photo 1. Coal Creek, View Facing Northwest toward Rawhide.



Photo 2. Coal Creek, View Facing Northwest toward Rawhide, OHHM Indicators.



Photo 3. Coal Creek, View Facing Northwest toward Rawhide, OHHM Indicators.



Photo 4. Spottlewood Creek Tributary, View Facing Southeast.



Photo 5. Coal Creek, View Facing North toward Potential Cable Crossing.



Photo 6. Sample Point W1, Soils and Vegetation.



Photo 7. Sample Point W1, View Facing Southeast toward Open Water.



Photo 8. Sample Point U1, Soils and Vegetation.



Photo 9. Sample Point U1, View Facing Southeast toward W1 and Open Water.

Attachment C

USACE Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rawhide Solar Project City/County: Larimer County Sampling Date: 5/11/15
 Applicant/Owner: Rawhide Energy Station State: CO Sampling Point: U1
 Investigator(s): Amy Laartz Section, Township, Range: S4 & 9; T10 N; R68W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): slope Slope (%): 1%
 Subregion (LRR): LRR-G Lat: 40.852242 N Long: 105.015625 W Datum: NAD 83
 Soil Map Unit Name: N/A NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
_____ = Total Cover				
Herb Stratum (Plot size: <u>30'</u>)				
1. <u><i>Pascopyrum smithii</i></u>	50	Y	FACU	
2. <u><i>Elymus lanceolatus</i></u>	30	Y	FACU	
3. <u><i>Melilotus officinalis</i></u>	10	N	FACU	
4. <u><i>Cirsium arvensis</i></u>	2	N	FACU	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
92 = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>2</u>				
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rawhide Solar Project City/County: Larimer County Sampling Date: 5/11/15
 Applicant/Owner: Rawhide Energy Station State: CO Sampling Point: W1
 Investigator(s): Amy Laartz Section, Township, Range: S4 & 9; T10 N; R68W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): slope Slope (%): 1%
 Subregion (LRR): LRR-G Lat: 40.852242 N Long: 105.015625 W Datum: NAD 83
 Soil Map Unit Name: N/A NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. <i>Juncus balticus</i>	80	Y	FACW	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <i>Cirsium arvensis</i>	10	N	FACU	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

SOIL

Sampling Point: W1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/2						Clay loam	
8-15	GLE Y 1 3/10						Clay loam	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Dark Surface (S7) (LRR G)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1)			<input type="checkbox"/> High Plains Depressions (F16)		
<input type="checkbox"/> Stratified Layers (A5) (LRR F)			<input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2)			(LRR H outside of MLRA 72 & 73)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)			<input type="checkbox"/> Depleted Matrix (F3)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Redox Depressions (F8)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)			<input type="checkbox"/> High Plains Depressions (F16)					
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)			(MLRA 72 & 73 of LRR H)					
Restrictive Layer (if present):								
Type: _____								
Depth (inches): _____								
						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input checked="" type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	(where tilled)	
<input type="checkbox"/> Drift Deposits (B3)	(where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)	
Field Observations:			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>7</u>	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>1</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			



DEPARTMENT OF HEALTH AND ENVIRONMENT

1525 Blue Spruce Drive
Fort Collins, Colorado 80524-2004
General Health (970) 498-6700
Environmental Health (970) 498-6775
Fax (970) 498-6772

To: Rob Helmick
Larimer County Planning Department

From: Doug Ryan *Doug Ryan*

Date: June 25, 2015

Subject: Rawhide Solar Power Plant Amended 1041

The Rawhide Solar Plant amendment is a 1041 permit review for a 30 MW solar power plant at the Platte River Power Authority (PRPA) Rawhide Energy Station. The proposal amends the previous 1041 permit that was authorized in 2015. The project as proposed modifies the footprint of the project. The technical issues associated with the construction and operations are very similar however.

The Larimer County Land Use Code contains general criteria for 1041 permits in Section 14.10. I have reviewed the information provided in the application as it relates to issues of public health concern, and have the following comments.

Air and Water Quality. The application description notes that the scope of work for the project will include managing construction related impacts through the use of erosion control measures and seeding and restoration. State stormwater construction permits are required for projects such as this that involve land disturbance of more than one acre of land. Those permits require the preparation of a Stormwater Management Plan to identify and control potential water quality impacts during the construction phase. The application indicates that a stormwater construction permit will be obtained for the project.

State level fugitive dust permits are required for construction projects that involve clearing more than 25 acres, or for soil disturbance lasting for more than six months. Those permits require the preparation of a fugitive dust control plan to minimize dust emissions during construction.

Revegetation. Revegetation will be performed for disturbed area. Vegetation will be reestablished by seeding with a drought-tolerant native seed mix. Noxious weeds will be monitored and controlled on an ongoing basis. We concur with this overall process.

Hazardous Materials. Information provided by the National Photovoltaic Assistance Center, part of the Brookhaven National Laboratory, indicates that while certain hazardous materials are used in the manufacture of photovoltaic cells, the operation of the cells does not produce any emissions. The actual photovoltaic material layers are stable and solid, and are encapsulated between layers of glass or plastic. Beyond the issue of components used in the cells, photovoltaic generation of

electricity is of course known as a clean energy source that avoids the air emissions associated with fuel burning.

Noise. The original 1041 application noted that the large setbacks between the construction project and any residences will prevent noise issues. We concur with that assessment.

Prairie Dogs. The application indicates that active prairie dog burrows are not present on the proposed solar array sites. If a more detailed survey determines that prairie dogs are in the area slated for the construction, appropriate precautions should be taken to protect workers from exposure to prairie dog fleas and the potential transmission of the plague bacteria. Our office is available to consult with the applicant about this issue if needed.

Conclusion. Potential impacts related to stormwater runoff and fugitive dust during the construction and operation are seen as the main public health issues to consider for this type of project. Based on my review of the application materials, I would conclude that the proposal can comply with the review criteria in the Land Use Code that pertain to those issues.

Thank you for the opportunity to comment. I can be reached at (970) 498-6777 if there are questions about any of these issues.

cc: Christopher Wood, PRPA