



August 29, 2014

Via Electronic Filing

The Honorable Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

**Subject: Peabody Trout Creek Reservoir Project (FERC Project No. P-14446)
Interim Study Plan Progress Report**

Dear Ms. Bose:

Pursuant to 18 Code of Federal Regulations Section 5.15(b) and as outlined in the May 17, 2013 Revised Study Plan, Peabody Trout Creek Reservoir LLC (PTCR) herein files with the Federal Energy Regulatory Commission (Commission) the third Integrated Licensing Process Interim Study Plan Progress Report for the Peabody Trout Creek Reservoir Project (Project).

The studies listed below have been or will be conducted in accordance with the proposed methodologies listed in the May 17, 2013 Revised Study Plan, which was approved (as filed) by the Commission's Study Plan Determination, issued June 11, 2013. This Interim Study Plan Progress Report describes the activities performed following receipt of the Commission's Study Plan Determination in support of licensing the Project.

The 2014 study season has been proceeding well and progress is being made on the remaining studies. To recap, a summary of the 2013 and 2014 studies completed to date is provided below, along with a summary of the progress this year on the remaining studies.

2013 Studies Completed

The following four resource studies were initiated and the associated study reports completed in 2013.

Geotechnical Investigation (Section 3.1 of the Revised Study Plan)

Survey work for the Geotechnical Investigation began in September 2013, and the Geotechnical Investigation Study Report was completed in February 2014. This report was included in the June 11, 2014 filing of the PTCR Initial Study Report.



Ms. Bose
Federal Energy Regulatory Commission
August 29, 2014
Page 2

Review and Analysis of the Results from Groundwater Monitoring Wells (Section 3.4 of the Revised Study Plan)

Data were downloaded from each of the dataloggers on May 17, 2012; October 2, 2012; and October 23, 2013, and subsequently reviewed and analyzed. The data were recorded and reported in the Review and Analysis of the Results from Groundwater Monitoring Wells Study Report in January 2014. This report was included in the June 11, 2014 filing of the PTCR Initial Study Report. Note that data collection began in 2011 and will continue per the U.S. Army Corps of Engineers (Corps) requirements for up to 10 years, with annual reporting.

2014 Studies Completed

The following four resource studies were initiated and the associated study reports completed in 2013, with revisions and finalization of each report occurring in 2014.

Recreation Use Study (Section 3.18 of the Revised Study Plan)

The Recreation Use Study was executed during September and October 2013, and the Recreation Use Study Report was initially completed in November 2013. This report was subsequently updated to include the 2014 Colorado Statewide Comprehensive Outdoor Recreation Plan (SCORP) data. The final report was included in the June 11, 2014 filing of the PTCR Initial Study Report.

Class III Intensive Pedestrian Cultural Resources Survey (Section 3.19 of the Revised Study Plan)

The Class III Intensive Pedestrian Cultural Resources Survey was executed during September, October, and November 2013, and the associated study report was drafted in December 2013. The Class III Intensive Pedestrian Cultural Resources Survey Study Report was then released to the PTCR Cultural Resources Working Group and the Colorado State Historic Preservation Officer (SHPO) for a 30-day review and comment period. During the review and comment period, the Commission sought SHPO concurrence with its determinations of eligibility and effect noted in the study report. On January 27, 2014, the SHPO provided comments on the study report and requested additional testing (and an implementation plan for such testing) of Sites 5RT3247 and 5RT3248. The SHPO also provided miscellaneous other comments on the study report. The only other party to provide comments on the Class III Intensive Pedestrian Cultural Resources Survey Study Report was the Bureau of Land Management, Little Snake Field Office. In response to those comments and requests, the Draft Class III Intensive Pedestrian Cultural Resources Survey Study Report was revised and additional testing, evaluation, and reporting was performed. Subsequent to that work, in a letter dated June 18, 2014, the SHPO provided concurrence with the Commission's findings of eligibility and effect and the report was updated and finalized to reflect that concurrence.



Ms. Bose
Federal Energy Regulatory Commission
August 29, 2014
Page 3

In summary, an intensive pedestrian cultural resources inventory of approximately 599 acres in the Area of Potential Effects (APE) for direct Project effects, and a reconnaissance of the larger APE for indirect Project effects, resulted in the recordation of 10 cultural resources, including an isolated prehistoric flake, two prehistoric open camps, a coal mine, a loafing shed, a barn, a mining warehouse, a residence, and two ranching complexes. The prehistoric isolated find and six of the historic sites were determined not eligible for listing in the National Register of Historic Places (NRHP). Expanded evaluative testing at one of the prehistoric sites, 5RT3247, affirmed that it contains significant buried cultural materials. Therefore, it was determined eligible for listing in the NRHP under Criterion D. Expanded evaluative testing at the second prehistoric site, 5RT3248, recovered no buried cultural materials. Therefore, it was determined not eligible for listing in the NRHP. The historic bank barn at one of the historic ranch complexes was determined eligible for listing in the NRHP, even though the rest of the site was determined not eligible for listing in the NRHP. The Commission further found that the Project would not adversely affect these historic properties because they lie outside the APE for direct Project effects and the indirect Project effects are negligible. The SHPO concurred with these revised findings of eligibility and effect on June 18, 2014.

The Class III Intensive Pedestrian Cultural Resources Survey Study Report was finalized in July 2014 and was e-filed with the Commission and distributed to the Cultural Resources Working Group for the Project (*a limited circulation due to the privileged/confidential nature of the report*).

Studies Anticipated to be Completed in 2014

The following studies are anticipated to be completed and reported on in 2014.

Whirling Disease Study (Section 3.12 of the Revised Study Plan)

Task 1 of the Whirling Disease Study, Detecting Whirling Disease, as described in PTCR's May 2013 Revised Study Plan, was completed in 2013 and half of the Whirling Disease Study Report was prepared to report on these findings. This task included conducting a sampling of trout, as well as tubifex worms, within the vicinity of the proposed reservoir and in reaches of Trout Creek upstream of the reservoir. Colorado Parks and Wildlife (CPW) was consulted regarding the collection protocol. Trout of the target size/age were not found in the reaches of stream near the proposed reservoir, likely due to warm water temperatures. Worms were collected and analyzed by a private laboratory utilizing techniques that are consistent with past analysis by CPW. Those worms were free of Whirling Disease.

Task 2 of the Whirling Disease Study, Probability of Infectivity, as described in PTCR's May 2013 Revised Study Plan, will be executed later this year. Task 2 includes assessing the probability of whirling disease infectivity arising from the proposed Project relative to the sedimentation analysis. The evaluation for this task will take into account the level of the



Ms. Bose
Federal Energy Regulatory Commission
August 29, 2014
Page 4

parasite in fish and worms, the lineages of worm present, and the present and proposed habitat suitability for supporting the worms in Trout Creek and the proposed reservoir. The Whirling Disease Study and the associated study report are anticipated to be completed in 2014 if the results of the reservoir water quality modeling are available this year.

Noxious Weed Survey (Section 3.13 of the Revised Study Plan)

The Noxious Weed Survey Study was completely deferred to 2014 due to availability of resource personnel within PTCR's Environmental Department. The Noxious Weed Survey will be executed later this year and the associated study report is anticipated to be completed in 2014.

Downstream Riparian, Wetlands, and Littoral Habitat Study (Section 3.15 of the Revised Study Plan)

The majority of the Downstream Riparian, Wetlands, and Littoral Habitat Study was completed in 2013 and the majority of the associated report was drafted. Once hydrologic modeling information is available for the downstream reach of Trout Creek in 2014, the potential indirect effects of the Project, considering the change in stream stage (feet) and frequency of flooding, will be qualitatively assessed. The drafted report will then be updated to include the results of the assessment of hydrologic effects. The Downstream Riparian, Wetlands, and Littoral Habitat Study and the associated study report are anticipated to be completed in 2014, assuming hydrology data is available.

Studies Anticipated to be Completed in 2015

The following studies are anticipated to be completed and reported on in 2015.

Existing Channel Conditions and Sediment Supply Study (Section 3.2 of the Revised Study Plan)

The assessment of existing channel conditions and basin sediment supply was initiated in September 2013, and a literature review of background sediment loading in Trout Creek was completed. A soil analysis was conducted on the Trout Creek watershed, including all tributaries, using the Web Soil Survey Program developed by the U.S. Department of Agriculture's Natural Resources Conservation Service. Stream and basin characteristics were defined and classified based on aerial mapping for the full length of Trout Creek using Google Earth. The Rosgen stream classification system was selected for this initial assessment. It is a widely used framework that defines eight Level I stream types on the basis of geomorphic characteristics including single thread or multiple channel condition, channel slope, sinuosity, width/depth ratio, and entrenchment ratio.



Ms. Bose
Federal Energy Regulatory Commission
August 29, 2014
Page 5

Stream typing for this study was completed as a desktop study using available aerial imagery. A true Level I classification requires defining a stream's entrenchment ratio and its width/depth ratio, which cannot be accurately determined from aerial images. Given the limitations of defining stream types purely from aerial imagery, the parameters that were considered for this assessment were stream sinuosity, slope, and single versus multiple thread streams. For this reason, the stream types that are defined for this study report should be considered indicators of the stream type only and may not meet all criteria for assigned stream type. More detailed information on stream types will be derived as part of the separate Channel Morphology Study (described below).

In 2013, land use trends were reviewed and analyzed and channel bankfull widths were also estimated for five sections of the stream to provide an indication of current stream conditions. Each section evaluated consisted of a one-mile stretch of Trout Creek with 10 cross-sections spaced at approximately 500-foot intervals along the length of the section.

This study effort considers the amount of both suspended and bedload sediment believed to be in Trout Creek as part of the process of estimating potential impacts caused by the proposed dam. The issue of sediment-transport capacity versus sediment supply as it relates to the proposed dam and its potential impact on the stream is being considered as part of the separate Channel Morphology Study (described below).

Also in 2013, available studies from the U.S. Geological Survey were reviewed to assess the amount of suspended sediment expected in Trout Creek. Given that detailed information on sediment supply is available from within the Trout Creek watershed, the relationship between suspended sediment and flow taken from Foidel Creek was used to estimate existing suspended-sediment levels throughout Trout Creek. To estimate bedload in the stream, measured bedload and suspended-sediment load values from other drainages tributary to the Yampa River were observed.

Although the majority of the Existing Channel Conditions and Sediment Supply Study Report is drafted, it cannot be completed until flow estimates for Trout Creek are available. Sediment load is related to stream flow. Flow estimates at locations along Trout Creek can therefore be used as the basis for estimating suspended and bedload sediment at various locations along Trout Creek, both with and without the proposed dam. Flow estimates, annual sediment volume estimates, sediment inflow to the reservoir, and sediment downstream of the proposed dam still require analysis and reporting in 2015. Modeling and reporting work for this study are anticipated to be completed in 2015.

Channel Morphology (Section 3.3 of the Revised Study Plan)

The Channel Morphology Study was initiated in September 2013. Detailed measurements of water depth and velocity of representative cross-sections to describe current channel morphology



Ms. Bose
Federal Energy Regulatory Commission
August 29, 2014
Page 6

and assist in predictions of the system's response to the proposed dam were collected. Gradations of channel substrate material was determined as part of the field assessment effort. A sampling frame and gravelometer were utilized to develop typical gradations at representative stream locations both upstream and downstream of the proposed dam. Channel armoring was assessed and bulk sampling of surface and subsurface channel material was performed. Suspended sediment and bedload sampling was performed at various flow rates during the spring of 2014. Samples were collected and flows were measured to help correlate flow and sediment load. Samples were sent to a laboratory for evaluation and will be used to refine the initial estimates of sediment loading discussed above.

Various other portions of the sediment transport analysis were completed in 2013. The Corps' Hydrologic Engineering Center River Analysis System (HEC-RAS) model was set up and the U.S. Forest Service's Bedload Assessment in Gravel-bedded Streams (BAGS) model (which is used to define Phase 2 sediment) was also set up. However, no real model runs were performed as actual flow data are required and will not be available until later in 2014 or in early 2015.

Once actual flow data is available, bedload transport will be modeled based on pre-Project hydrology and hydrology with the proposed dam. Detailed physical characteristics of the stream obtained as part of the 2013 field investigations, 2014 sediment load sampling, as well as expected daily flow conditions with and without the dam will be utilized for detailed bedload modeling. Modeling will be completed for representative stream locations downstream of the proposed dam. Annual transport capacity, effective discharge, and flows required to initiate Phase 2 sediment transport will be estimated for pre- and post-Project conditions.

In addition to the bedload assessment, a sediment transport model will also be completed in 2015 for the reach downstream of the proposed dam. The detailed downstream model will evaluate likely bed downcutting and bank erosion resulting from the proposed dam's impact on sediment supply. This model will first be validated by using existing condition flows and then be used as a tool to estimate channel response using proposed flows and limited sediment influx

All field work for this study has been completed. The channel morphology analyses and the associated study report are anticipated to be completed in 2015.

Hydrology and Stream Flow Assessment (Section 3.5 of the Revised Study Plan)

A Project site visit was coordinated with the aquatic and sediment survey teams in September 2013 to prepare for this study. PTCR continues to review and summarize flow data collected to date at the Trout Creek gaging station, and verification of the TZA methodology will be initiated in the fall of 2014 after several additional months of flow data are collected at the Trout Creek gaging station. This task will require diversion data for several structures on Trout Creek. PTCR contacted the Water Commissioner on Trout Creek on April 18, 2014 via email (see Attachment A) regarding the availability of that data. The Water Commissioner has not yet



Ms. Bose
Federal Energy Regulatory Commission
August 29, 2014
Page 7

responded to that request. PTCR will continue to attempt to contact the Water Commissioner regarding the availability of diversion data. PTCR contacted Mark McCluskey with CDM on April 22, 2014 via email regarding information on changes that were made to the Colorado Decision Support System (CDSS) Yampa River Model for the Project and Methods Study. The updated model input files that were finalized for the Projects and Methods Study were received from CDM on April 22, 2014. PTCR is in the process of reviewing the changes that were made by CDM to confirm this version of the model is appropriate for this study. PTCR contacted Kevin McBride with the Upper Yampa Water Conservancy District (UYWCD) on July 8, 2014 to discuss the UYWCD's plans to use the CDSS Yampa River Model that was revised by CDM. Mr. McBride explained that the UYWCD hired Joe Messina to make some additional changes to the model to evaluate some of its proposed projects. An email to David Merritt and Jody Glennon, URS (PTCR's environmental consultant for the Project) on July 8, 2014 summarizes that phone conversation and is included in Attachment A. PTCR emailed Joe Messina on July 22, 2014 and then called Joe Messina on July 28, 2014 to discuss the changes he is making to the CDSS Yampa River Model. Mr. Messina explained he is adding a minimum flow release from Stagecoach Reservoir for environmental purposes during the winter. Mr. Messina is also making sure the operating rules that control releases from Stagecoach Reservoir for the Colorado Water Trust and that control hydropower operations for Tri-State are turned off. Those changes should be included in the version of the model that is used for modeling the proposed Project. The remaining changes being made to the model are for future projects the UYWCD would like evaluated and are not pertinent to the PTCR Project. Mr. Messina indicated that he envisions completing the changes related to the environmental flow releases from Stagecoach Reservoir in the fall of 2014, at which point he will provide the updated model input files to PTCR. Email correspondence with Dave Merritt and Jody Glennon, URS, on July 28, 2014, and with Joe Messina on July 22, 2014 is included in Attachment A.

PTCR requested and received several water court decrees which pertain to Peabody's water rights for Trout Creek Reservoir. PTCR anticipates reviewing these documents this fall and meeting with its hydrology subcontractor to determine whether changes to the CDSS Yampa River Model are warranted. If changes are needed to the model they will likely be made in the first quarter of 2015.

In anticipation of modeling the proposed Trout Creek Reservoir, PTCR has been coordinating with all of its resource specialists involved in flow-dependent studies and analyses to determine the preferred format for the hydrologic output from the Yampa Model. Hydrologic output from the Yampa Model will likely be provided in a daily format for the study period from 1950 to 2005 at the locations requested by the resource specialists.

This study and the associated study report are anticipated to be completed in 2015 as its dependent on the availability of diversion data required to complete the Hydrology and Streamflow Assessment Study (described above).



Ms. Bose
Federal Energy Regulatory Commission
August 29, 2014
Page 8

Hydrologic Effects Analysis of the Proposed Trout Creek Reservoir and Related Diversions on Flows in the Yampa River (Section 3.6 of the Revised Study Plan)

The Hydrologic Effects Analysis of the Proposed Trout Creek Reservoir and Related Diversions on Flows in the Yampa River Study was completely deferred to 2014 due to a delay in the collection of 2013 stream hydrology data. This study and the associated study report are anticipated to be completed in 2015, since this study requires the diversion data that is required to complete the Hydrology and Streamflow Assessment Study (described above).

Ongoing Temperature and Dissolved Oxygen Monitoring of Trout Creek (Section 3.7 of the Revised Study Plan)

This study is intended to better identify the temperature and dissolved oxygen regime of Trout Creek in the vicinity of the proposed reservoir, as well as the relationships between these parameters and flow to assist in the development of the reservoir water quality model (to simulate water quality within and below the reservoir). A recording temperature and dissolved oxygen monitor was installed at the existing Orton site and is being operated from April through November, weather permitting. The objectives of this installation and monitoring are to extend the existing data set at this site, which has been operated intermittently since 1995.

Additionally, new stream gages were installed on Foidel Creek, Middle Creek, and Trout Creek above the proposed reservoir, and Trout Creek below Middle Creek, and a recording temperature sensor will be installed soon. Data is being retrieved at monthly intervals. Dissolved oxygen measurements are being taken at the same site on a weekly basis utilizing a Yellow Springs Instruments Dissolved Oxygen/Temperature Probe.

The Ongoing Temperature and Dissolved Oxygen Monitoring of Trout Creek Study is anticipated to be continued in 2014, and the associated study report is expected to be issued in early 2015.

Stream and Reservoir Water Quality Modeling (Section 3.8 of the Revised Study Plan)

The Stream and Reservoir Water Quality Modeling Study was completely deferred to 2014 due to a delay in the collection of 2013 stream hydrology data. Data compilation and analysis is currently underway. A list of data required to establish the hydrodynamic and water quality model was prepared and circulated amongst team members. Based on that list, water quality and streamflow data is being received and data gaps are being addressed. Meteorological data are being retrieved from online sources and other data components like geographic data are being assembled to set up a preliminary model.

Much of this study is dependent on the results of other studies that are in process. It is also dependent on clarification of design and operational scenarios and key alternatives. It is anticipated that the majority of the data compilation and analysis, model selection and



Ms. Bose
Federal Energy Regulatory Commission
August 29, 2014
Page 9

application, calibration of the model, and application of the model for management consideration tasks will be completed at the end of 2014. The remainder of the study tasks and the preparation of the Stream and Reservoir Water Quality Modeling Study Report are anticipated to be completed in early 2015.

Flow/Habitat Effects Evaluation on Existing Fishery Resources in Trout Creek and the Yampa River (Section 3.9 of the Revised Study Plan)

Field activities for 2013 for the Flow/Habitat Effects Evaluation on Existing Fishery Resources in Trout Creek and the Yampa River Study included benthic macroinvertebrate sampling at three sites in lower Trout Creek in the fall. The data from the analysis of those samples indicated the presence of very abundant and diverse communities of invertebrates, similar to data collected in 2011 at sites upstream near the proposed reservoir location. Colorado Macroinvertebrate Multimetric Index (MMI) scores for the data from the 2013 sites indicated some were attaining the aquatic life use threshold while some were not.

Field activities completed to date in 2014 include a spring site visit to establish Physical Habitat Simulation (PHABSIM) fish habitat modeling transects to better represent the habitat along lower Trout Creek that is somewhat different from the habitat at the existing PHABSIM transects near the proposed reservoir site. High flow data were collected at the new transects in April and mid-flow data were collected in July of 2014. High flow data were also collected at the existing PHABSIM transects established in 2011 near the reservoir site to complete the data collection at those transects.

Data will be collected at the new PHABSIM transects in lower Trout Creek during the fall of 2014. PHABSIM habitat modeling will be used to assess the impacts of the Project. The results of the habitat modeling and the results of the other aquatic and related studies (i.e., those pertaining to reservoir modeling, water quality, hydrology, etc.) will be used to develop and complete this study. Data analysis, coordination with other resource specialists and agencies, and impact evaluation of the field data collected and preparation of the Flow/Habitat Effects Evaluation on Existing Fishery Resources in Trout Creek and the Yampa River Study Report are anticipated to be completed in early 2015.

Fish Species and Longitudinal Habitat Utilization Study (Section 3.10 of the Revised Study Plan)

The Fish Species and Longitudinal Habitat Utilization Study was mostly deferred to 2014 as access to the lower sections of Trout Creek was not obtained until late in the 2013 field season. Only a portion of the field survey work was accomplished in 2013. Fish sampling at four sites in the lower portion of Trout Creek was completed once in late October and once in mid-November to evaluate the use of Trout Creek by spawning fish. The results suggest that brown trout and mountain whitefish may spawn in the fall in Trout Creek. The sampling also resulted in the



Ms. Bose
Federal Energy Regulatory Commission
August 29, 2014
Page 10

collection of several other non-native species in lower Trout Creek that have not previously been found at sites upstream. In both the fall of 2013 and spring of 2014, several potential barriers to upstream migration were examined at different flow levels. It appears that at moderate to high flows, there are no complete barriers to upstream migrating fish in lower Trout Creek.

Both qualitative and quantitative fish population sampling at multiple sites in the lower portion of Trout Creek is expected to continue in the fall of 2014. Spring-snowmelt runoff high flows started very early in April 2014, prior to the usual upstream migration of spring-spawning species, precluding the team's ability to safely sample for these species. Sampling after runoff flows receded occurred once in early July at three sites in the lower portion of the stream and resulted in the collection of the species commonly found in previous samples. PTCR did not find any species that may have migrated upstream from the Yampa River to spawn, although sampling may have been too late to encounter spring-spawning species.

Data analysis and impact evaluation of the field data collected and preparation of the Fish Species and Longitudinal Habitat Utilization Study Report are anticipated to be completed in early 2015.

Fish Entrainment Study (Section 3.11 of the Revised Study Plan)

This study was postponed to 2015 to allow the other resource studies pertaining to hydrology, channel morphology, stream and reservoir water quality, and aquatic biological resources to progress; the results of those studies will be utilized in the execution of the fish entrainment assessment.

The Fish Entrainment Study is anticipated to be executed in its entirety in 2015 with the associated Fish Entrainment Study Report anticipated in mid to late 2015.

Wildlife, Migratory Bird, and Raptor Surveys (Section 3.14 of the Revised Study Plan)

The Wildlife, Migratory Bird, and Raptor Surveys Study was completely deferred to 2014 due to 2013 field access being delayed as a result of PTCR's land acquisitions in the Project area taking longer than expected, and the survey windows for the amphibian and birds closing prior to receipt of the 2013 Notice to Proceed. The data gathering and field work associated with the northern leopard frog breeding survey, migratory bird survey, and migratory raptor survey has been completed. Northern leopard frog surveys were conducted on May 6, 7, 27, and 28, 2014 and on June 27 and 28, 2014. Adult northern leopard frogs were observed in many of the wetlands during the late May and June surveys. Tadpoles were observed in several of the wetland areas during the June survey.

Migratory bird surveys following the Colorado Breeding Bird Atlas (COBBA) survey protocol were conducted May 27 and 28, 2014 and June 27 and 28, 2014. Fifty-five total bird species were observed on the Project site. According to COBBA, 54 of those species are known to breed



Ms. Bose
Federal Energy Regulatory Commission
August 29, 2014
Page 11

in the area and one species (Lapland longspur [*Calcarius lapponicus*]) is likely a migrant. Breeding behavior was noted for each individual bird observed, and breeding codes were recorded by species as indicators of breeding behavior progressed from species observed to possible breeding, probable breeding, and confirmed breeding. For example, a singing male is an indication of possible breeding; nest building indicates probable breeding; and feeding young confirms breeding. Using this protocol, ERO identified 27 confirmed breeding species and six probable breeders on the Project site. The June survey confirmed breeding in most species identified as probable breeders during the first survey (i.e., May survey). Several species, including American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), great blue heron (*Ardea herodias*), and sandhill crane (*Grus canadensis*) were observed in pairs or mixed flocks and probably breed in the general area of the Project, but not on the Project site. Other species, particularly several swallow species and hummingbirds, likely breed on the Project site, but it is difficult to determine breeding status based on behavior.

Surveys for active raptor nests were conducted May 6, 7, 27, and 28, 2014. One active red-tailed nest was documented in the Project area.

Consultation with CPW will be initiated to discuss Project effects and appropriate mitigation for northern leopard frogs and migratory birds, including raptors. Data analysis of the data gathered and fieldwork performed in the spring of 2014 are anticipated to occur in early 2015, with the Wildlife, Migratory Bird, and Raptor Surveys Study Report anticipated to be completed in mid-2015.

Wetland Delineation for Entire Project (Section 3.16 of the Revised Study Plan)

PTCR previously delineated wetlands for the 2011 study area (as determined at that time). In 2013, the wetland study area was expanded to match the cultural resources APE for direct effects. The Wetland Delineation for Entire Project Study was completely deferred to 2014 due to 2013 field access being delayed as a result of PTCR's land acquisitions in the Project area taking longer than expected.

Wetland delineations and functional assessments were conducted August 4 through 7, 2014. The results of the field surveys are being processed. A site visit to review the wetland boundaries will be scheduled with the Corps, the timing of which will be determined by the schedule of a Corps' representative. The Wetland Delineation for Entire Project Study Report is anticipated to be completed in mid-2015.

Transportation System Assessment (Section 3.17 of the Revised Study Plan)

The Transportation System Assessment Study has been completely deferred to 2015 following PTCR's 2014 financial resource prioritization. The Transportation System Assessment and the associated study report are anticipated to be completed in 2015.



Ms. Bose
Federal Energy Regulatory Commission
August 29, 2014
Page 12

Resource Management Plans

As stated in the May 17, 2013 Revised Study Plan, various resource management plans will be filed with PTCR's Preliminary License Application (which is currently scheduled to be filed with the Commission in March 2016). The resource study plan progress detailed above will aid in the development of the Construction Stormwater Management Plan, Fishery Management Plan, Reclamation Management Plan, Noxious Weed Management Plan, Conceptual Wetlands Mitigation Plan, Recreation Management Plan, and Shoreline Management Plan.

Based on the results of the Class III Intensive Pedestrian Cultural Resources Survey Study, a Historic Properties Management Plan (HPMP) will not be required for this Project.

Summary

To date, there have been no significant study variances from the Revised Study Plan that was approved (as filed) by the Commission's Study Plan Determination issued June 11, 2013. However, there have been fieldwork schedule delays that impacted the study team's ability to access the field prior to September 2013, and the study team was not able to capture 2013 peak flow data. The fieldwork schedule delays were a result of land acquisition negotiations, which took longer than expected to complete. As a result, key access coordination with the private landowners in the Project area was delayed. However, the land acquisition will limit future private landowner access issues. Additionally, it took longer than expected to install stream gauges and to begin capturing monitoring data. However, these delays simply extend the initial field season into the spring of 2015, with ample opportunity for the majority of the resource studies to progress and be completed in 2014/2015.

If you have questions regarding this Interim Study Plan Progress Report or if I can provide additional information, please contact me at (314)342-3484 or byansen@peabodyenergy.com. Thank you.

Sincerely,

A handwritten signature in black ink that reads "Brian Yansen". The signature is written in a cursive style with a long horizontal flourish at the end.

Brian Yansen
Director, Real Estate Development
Peabody Trout Creek Reservoir LLC

cc: Attached Distribution List

Enclosure: Attachment A, Hydrology Correspondence

**Peabody Trout Creek Reservoir Project (FERC Project No. P-14446)
Interim Study Plan Progress Report Distribution List**

Matt Rice
Colorado Director
American Rivers
1536 Wynkoop Street, Office B500
Denver, CO 80202

Bud Werner Memorial Library
1289 Lincoln Avenue
Steamboat Springs, CO 80487

Wendy Reynolds
Field Manager
Bureau of Land Management (BLM),
Little Snake Field Office
455 Emerson Street
Craig, CO 81625

Kim Ryan
Archaeologist
Bureau of Land Management (BLM),
Little Snake Field Office
455 Emerson Street
Craig, CO 81625

Emily Spencer
Ecologist
Bureau of Land Management (BLM),
Little Snake Field Office
455 Emerson Street
Craig, CO 81625

Janice Prairie-Chief Boswell
Governor
Cheyenne & Arapaho Tribes of Oklahoma
P.O. Box 38
Concho, OK 73022

Tyler Gibbs
Director
City of Steamboat Springs
Dept. of Planning and Community
Development
P.O. Box 775088
Steamboat Springs, CO 80477

Ernest House, Jr.
Executive Secretary
Colorado Commission of Indian Affairs
130 State Capitol
Denver, CO 80203

Andrew Poirot
Colorado Dept. of Public Health and
Environment
Division of Water Quality
410 South Lincoln Avenue, Suite A5
Steamboat Springs, CO 80487

John Hranac
Water Quality Assessor
Colorado Dept. of Public Health and
Environment
Water Quality Control Division
4300 Cherry Creek Drive South
Denver, CO 80246

Sarah Wheeler
Colorado Department of Public Health and
Environment
Water Quality Control Division
4300 Cherry Creek Drive South
Denver, CO 80246

Erin Light
Division Engineer, Region 6
Colorado Division of Water Resources
P.O. Box 773450
Steamboat Springs, CO 80477

Becky Long
Water Caucus
Colorado Environmental Coalition
1536 Wynkoop Street, #5C
Denver, CO 80202

Bill Atkinson
Aquatic Biologist
Colorado Parks and Wildlife (CPW)
925 Weiss Drive
Steamboat Springs, CO 80477

Taylor Elm
Land Use Specialist, NW Region
Colorado Parks and Wildlife (CPW)
0088 Wildlife Way
Glenwood Springs, CO 81601

Danielle Domson
Colorado Parks and Wildlife (CPW)
925 Weiss Drive
Steamboat Springs, CO 80477

Jim Haskins
Colorado Parks and Wildlife (CPW)
925 Weiss Drive
Steamboat Springs, CO 80477

Liza Rossi
Colorado Parks and Wildlife (CPW)
925 Weiss Drive
Steamboat Springs, CO 80477

Ron D. Velarde
Northwest Regional Manager
Colorado Parks and Wildlife (CPW)
P.O. Box 775777
Steamboat Springs, CO 80477

John Gamble
Colorado Trout Unlimited
1536 Wynkoop Street, Suite 302
Denver, CO 80202

Michelle Garrison
Staff
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

James Eklund
Director
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

Ted Kowalski
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, CO 80203

William Chace
Riverkeeper
Creek Ranch
P.O. Box 772301
Steamboat Springs, CO 80477

Kent Sandstedt
Manager
Creek Ranch
CR Summit, 33255 Creek Summit Lane
Steamboat Springs, CO 80487

Gerald Audisirk
President
Creek Ranch Owners Association
P.O. Box 775416
Steamboat Springs, CO 80477

Cedric Black Eagle
Chairman
Crow Nation
P.O. Box 159
Crow Agency, MT 59022

Karl F. Kumli, III, Esq.
Dietze and Davis, P.C.
2060 Broadway, Suite 400
Boulder, CO 80302

Mike LaJeunesse
Chairman
Eastern Shoshone Tribe (Wind River
Reservation)
P.O. Box 538
Fort Washakie, WY 82514

Jennifer Adams
Federal Energy Regulatory Commission
(FERC), Office of Energy Projects
888 First Street, NE
Washington, DC 20426

Matt Buhyoff
Aquatic Biologist
Federal Energy Regulatory Commission
(FERC), Office of Energy Projects
888 First Street, NE
Washington, DC 20426

Joe Hassell, Environmental Engineer
Federal Energy Regulatory Commission
(FERC), Office of Energy Projects
888 First Street, NE
Washington, DC 20426

Shana Murray
Small Hydropower Coordinator
Federal Energy Regulatory Commission
(FERC), Office of Energy Projects
888 First Street, NE
Washington, DC 20426

Timothy J. Welch, Chief
West Branch, Division of Hydropower
Licensing
Federal Energy Regulatory Commission
(FERC), Office of Energy Projects
888 First Street, NE
Washington, DC 20426

Frank Winchell
Federal Energy Regulatory Commission
(FERC), Office of Energy Projects
888 First Street, NE
Washington, DC 20426

c/o Peter Vandercar
Friends of the Yampa
P.O. Box 774703
Steamboat Springs, CO 80477

Ed Nichols
State Historic Preservation Officer
History Colorado
1200 Broadway
Denver, CO 80203

Mark Tobias
Section 106 Compliance Officer
History Colorado
1200 Broadway
Denver, CO 80203

Bill Caile
Counsel
Holland & Hart LLP
555 17th Street, Suite 3200
Denver, CO 80202

Sandi Snodgrass
Partner
Holland & Hart LLP
555 17th Street, Suite 3200
Denver, CO 80202

Daniel Huber
Long Cove Club
5 Rose Bank Lane
Hilton Head Island, SC 29928

Mike Ludlow
Ludlows' Mountainview Ranch LLC
34115 Routt County Road 33
Steamboat Springs, CO 80487

Lori Jazwick
District Conservationist
Natural Resources Conservation Services
(NRCS), Steamboat Springs Field Office
1475 Pine Grove Road, Suite 201A
Steamboat Springs, CO 80487

Darrell O'Neal, Sr.
Chairman
Northern Arapaho Tribe
P.O. Box 396
Fort Washakie, WY 82514

John Robinson
President
Northern Cheyenne Tribe
P.O. Box 128
Lame Deer, MT 59043

Oak Creek Public Library
227 Dodge Avenue
Oak Creek, CO 80467

Jackie Brown
Routt County Conservation District
1475 Pine Grove Road, Suite 201A
Steamboat Springs, CO 80487

Michael Zopf
Director
Routt County Department of
Environmental Health
P.O. Box 770087
Steamboat Springs, CO 80477

Dee Bolton
Routt County Historic Preservation Board
P.O. Box 773598
Steamboat Springs, CO 80477

Rebecca Bessey
Routt County Planning Department
P.O. Box 773749
Steamboat Springs, CO 80477

Chad L. Phillips
Planning Director
Routt County Planning Department
P.O. Box 773749
Steamboat Springs, CO 80477

Janet Hruby
Director
Routt County Road & Bridge
P.O. Box 773598
Steamboat Springs, CO 80477

Jimmy Newton, Jr.
Chairman
Southern Ute Indian Tribe
356 Ouray Drive
Ignacio, CO 81137

Alexis Casale Eiland
Preservation Planner
Steamboat Springs Historic Preservation
Advisory Commission
137 10th Street, P.O. Box 775088
Steamboat Springs, CO 80477-5088

Tim Sullivan
State Director
The Nature Conservancy in Colorado
2424 Spruce Street
Boulder, CO 80302

Geoff Blakeslee
Manager
The Nature Conservancy's Carpenter
Ranch
P.O. Box 955
Hayden, CO 81639

Karl W. Myers
Transmission Siting & Environmental
Planning Manager
Tri-State Generation & Transmission
Association, Inc.
1100 West 116th Avenue
Westminster, CO 80234

Rick Thompson
Senior Manager, Transmission Land
Rights and Permitting
Tri-State Generation & Transmission
Association, Inc.
1100 West 116th Avenue
Westminster, CO 80234

Brian Hodge
Project Coordinator, Yampa & White
River Basins
Trout Unlimited
P.O. Box 771233
Steamboat Springs, CO 80477

Kate Miller
Western Water and Energy Counsel
Trout Unlimited
1326 Fifth Avenue, Suite 450
Seattle, WA 98101

Jerry M. Nettleton
Manager Environmental Affairs
Twentymile Coal, LLC
29515 RCR27
Oak Creek, CO 80467

Bruce E. Kroeker
TZA Water Engineers, Inc.
12596 West Bayaud Avenue, Suite 330
Lakewood, CO 80228

Andy Rossi
District Engineer
Upper Yampa Water Conservancy District
3310 Clear Water Trail, P.O. Box 775529
Steamboat Springs, CO 80477

Susan Bachini Nall, Chief
U.S. Army Corps of Engineers (USACE)
Colorado West Regulatory Branch
IDENTIFICATION NUMBER
SPK-2010-01434
400 Rood Avenue, Room 224
Grand Junction, CO 81501

Ed Parisian
Regional Director
U.S. Bureau of Indian Affairs
Rocky Mountain Regional Office
2021 4th Avenue North
Billings, MT 59101

Bill Walker
Regional Director
U.S. Bureau of Indian Affairs
Southwest Regional Office
1001 Indian School Road, NW
Albuquerque, NM 87104

Larry Walkoviak
Regional Director
U.S. Bureau of Reclamation, Regional
Office
125 South State Street, Room 6107
Salt Lake City, UT 84138

Ed Warner
Acting Area Manager
U.S. Bureau of Reclamation
Western Colorado Area Office
2764 Compass Drive
Grand Junction, CO 81506

Robert F. Stewart
Regional Environmental Officer
U.S. Department of the Interior, Office of
the Secretary, Office of Environmental
Policy and Compliance
Denver Federal Center, Building 67,
Room 118, P.O. Box 25007 (D-108)
Denver, CO 80225

U.S. Environmental Protection Agency
(EPA)
1595 Wynkoop Street
Denver, CO 80202

Billy Bunch
U.S. Environmental Protection Agency
(EPA) Region 8, 8EPR-N
1595 Wynkoop Street
Denver, CO 80202

Maggie Pierce
U.S. Environmental Protection Agency
(EPA) Region 8, 8EPR-N
1595 Wynkoop Street
Denver, CO 80202

Melanie Wasco
Lead NEPA Reviewer
U.S. Environmental Protection Agency
(EPA), Region 8, 8EPR-N
1595 Wynkoop Street
Denver, CO 80202

Sarah Fowler
U.S. Environmental Protection Agency
(EPA), Region 8, 8EPR-N, Aquatic
Resource Protection and Accountability
Unit
1595 Wynkoop Street
Denver, CO 80202

Karen Hamilton, Chief
U.S. Environmental Protection Agency
(EPA), Region 8, 8EPR-N, Aquatic
Resource Protection and Accountability
Unit, Office of Ecosystems Protection
and Remediation
1595 Wynkoop Street
Denver, CO 80202

Philip S. Strobel
U.S. Environmental Protection Agency
(EPA), Region 8, 8EPR-N, NEPA
Compliance and Review Program,
Office of Ecosystems Protection and
Remediation
1595 Wynkoop Street
Denver, CO 80202

U.S. Fish and Wildlife Service (USFWS)
Ecological Services
445 West Gunnison Avenue, # 240
Grand Junction, CO 81501

Susan Linner
Colorado Field Supervisor
U.S. Fish and Wildlife Service (USFWS),
Ecological Services
P.O. Box 25486, Denver Federal Center
(MS 65412)
Denver, CO 80225

Andrew Todd
U.S. Geological Survey
1595 Wynkoop Street
Denver, CO 80202

Kevin McBride
Manager
Upper Yampa Water Conservancy District
3310 Clear Water Trail
P.O. Box 775529
Steamboat Springs, CO 80477

Project File
c/o Jody Glennon
URS Corporation
8181 East Tufts Avenue
Denver, CO 80237

Jody Glennon
Environmental Planner
URS Corporation
8181 East Tufts Avenue
Denver, CO 80237

David Merritt
Project Manager
URS Corporation
804 Colorado Avenue, Suite 201
Glenwood Springs, CO 81601

Irene Cuch
Chairwoman
Ute Indian Tribe (Uintah & Ouray
Reservation)
P.O. Box 190
Ft. Duchesne, UT 84026

Gary Hayes
Chairman
Ute Mountain Ute Tribe
P.O. Box JJ
Towaoc, CO 81334-0248

Robert G. Weiss, Esq.
Weiss and Van Scoyk LLP
600 South Lincoln Avenue, Suite 202
Steamboat Springs, CO 80487

West Routt Library
201 East Jefferson Street
Hayden, CO 81639

Brian Pederson
Realty Specialist
Western Area Power Administration
P.O. Box 3700, 5555 East Crossroads
Boulevard
Loveland, CO 80539

Carey Ashton
Realty Officer
Western Area Power Administration
Rocky Mountain Region A7400.LV
P.O. Box 3700, 5555 East Crossroads
Boulevard
Loveland, CO 80539

Bradley Warren
Regional Manager
Western Area Power Administration
Rocky Mountain Region J0000.LV
P.O. Box 3700, 5555 East Crossroads
Boulevard
Loveland, CO 80539

Robert K. Harris
Western Resource Advocates
2260 Baseline Road, Suite 200
Boulder, CO 80302

Fred Eggleston
Western Slope Area Manager
Xcel Energy
2538 Blichman Avenue
Grand Junction, CO 81505

Scott Warner
President
Yampa Valley Fly Fishers Chapter of
Trout Unlimited
1448 Robert E. Lee Lane
Steamboat Springs, CO 80487

Thomas R. Sharp
Chairman
Yampa-White River Basin Roundtable
P.O. Box 774968
Steamboat Springs, CO 80477

Angela Fortune
6032 South Brook Valley Way
Centennial, CO 80121

Theresa Friederich-Takasugi
Co-Trustee for the Friederich Family Trust
4571 New Hampshire Street
San Diego, CA 92116

Daniel Huber
c/o John Huber
650 Briar Lane
Northfield, IL 60093

Daniel Huber
c/o Daniel Huber Jr.
800 Bryant Avenue
Winnetka, IL 60093

Barbara Kerley, Fredrickson
33425 County Road 33
Oak Creek, CO 80467

Bill McCawley
1814 Hunters Court
Steamboat Springs, CO 80487
Paul and Sue Orton
35100 Routt County Road 179
P.O. Box 880856
Steamboat Springs, CO 80488

Casey Clapsaddle
Hydrologist
Rivers Unlimited, Inc.
P.O. Box 775685
Steamboat Springs, CO 80477

Attachment A
Hydrology Correspondence

Glennon, Jody

From: Heather Thompson <Heather@erccolorado.net>
Sent: Friday, April 18, 2014 10:12 AM
To: Romig, Brian
Cc: Merritt, David; Glennon, Jody
Subject: RE: Questions about flow conditions on Trout Ck in Dist. 57

Hi Brian,

I contacted you 2 years ago about some work I'm doing for Peabody Coal on their conditional storage right on Trout Ck (see below). They are continuing work on that project and have been collecting flow data at that the location where their right is decreed for about 1/2 year now and will continue to collect data through this upcoming runoff season. I'll be using that data to check the flow estimation method that is used to estimate flow in the Trout Creek basin in the State's CDSS Yampa River model. That method relates the baseflow in the Trout Ck basin to the baseflow at the Elk Ck Gage, 09241000. To check whether the methodology is reasonable I'll also need diversion records for structures upstream of the Elk River gage (09241000) and above the conditional right on Trout Ck. For example, on Trout Ck that would be:

- Rich Ditch
- Last Chance Ditch
- Male Moore Co Ditch
- David M Chapman Ditch
- Orno Ditch
- Koll Ditch
- Homestead Ditch
- Trout Creek Ditch 2 and 3

There are also several other small diversions but the ones I listed above are the major one.

When would the diversion data for this summer (2014) be available? How quickly does that get coded in Hydrobase? Is there any chance I would be able to get diversion data submitted by the water users when they provided it to you or do I need to wait until the State makes diversion data available to the public once the State's Hydrobase is updated through WY 2014, which I'm guessing won't be available until 2015. This will help me know what kind of schedule I'm up against based on when this diversion data will be available.

Thanks,
Heather

From: Romig, Brian [<mailto:Brian.Romig@state.co.us>]
Sent: Wednesday, March 21, 2012 9:27 AM
To: Heather Thompson
Cc: Schaffner, Andy
Subject: RE: Questions about flow conditions on Trout Ck in Dist. 57

Heather,

Unfortunately, I have not even been on the creeks in this area for a year yet. I'm still trying to find my way around. I can do this research for you, but I'm currently swamped right now with records, spreadsheets, databases, court case stuff, etc. I can do the research in April and provide maps and line diagrams etc to help you and can meet with you as well if need be. I can also give you a list of all the water rights above your current conditional right, however, I won't be

able to get to it until mid-April. I have cc'd in the previous water commissioner of the area and she might be able to answer some of your questions without research. Hopefully, mid-April will work for you.

Thanks,
Brian

From: Heather Thompson [<mailto:Heather@erccolorado.net>]
Sent: Wednesday, March 14, 2012 2:02 PM
To: Romig, Brian
Subject: Questions about flow conditions on Trout Ck in Dist. 57

Hi Brian,

I was hoping I could get some info from you regarding flow conditions on Trout Ck. The phone number I have didn't go to your voice mail so I thought I'd try email. I'm working for Peabody Energy doing an analysis of their conditional water right for a reservoir site on Trout Ck right upstream of Fish Ck. There aren't any current or historical USGS gages on Trout Ck but I was able to find two gages with decent periods of record on Foidel Ck and on Middle Creek. Those two creeks are roughly the same drainage basin as the Trout Ck mainstem basin above the confluence of Fish Ck. I thought I might be able to use that gage data to estimate flow conditions on the mainstem of Trout Ck but wanted to get your opinion on that.

If I use the Foidel Ck gage I need to know if there are any diversions on Foidel Ck. The only diversions I'm seeing on Middle Ck are for the Middle Ck Ditch, Lieske Ditch and Last Chance Ext. Are there any other diversions on Middle Ck? For Trout Ck has there ever been a call and if so, what structure typically calls? It looks like all the diversions from Trout Ck are above the confluence of Fish Ck, is that correct? Fish Ck seems like a pretty substantial inflow to Trout Ck. Do the flows get pretty low above that confluence due to all the diversions off of Trout Ck above that confluence?

If it's quicker to give me a call back than an email response that works great. My phone number is (303) 679-4820 ext. 103. I work with Environmental Resource Consultants.

Thanks,
Heather Thompson

Glennon, Jody

From: McCluskey, Mark <McCluskeyMJ@cdmsmith.com>
Sent: Tuesday, April 22, 2014 1:18 PM
To: Heather Thompson
Subject: RE: Yampa Model Files

Heather,

Thanks for your email. We have completed the modeling and are in the process of finalizing the Projects and Methods report. We are awaiting final comments from the Yampa BRT.

I assume the modeling will not change and can send you the latest version that we have. The documentation would be contained in the report and the model DMIs.

I am heading out shortly to head down to the Arkansas River Basin Forum and will be out until Thursday. Let's touch base and see what we can provide.

Take Care,
Mark

Mark McCluskey CDM Smith
Email: mccluskeymj@CDMSmith.com

From: Heather Thompson [<mailto:Heather@erccolorado.net>]
Sent: Tuesday, April 22, 2014 11:39 AM
To: McCluskey, Mark
Subject: Yampa Model Files

Hi Mark,

Hope everything is going well for you. I wanted to check in with you on some model files for the CDSS Yampa River model. I was in contact with Mark Hoerner over the last year about changes he was making to the Yampa Model for the WCD and Basin Round Table (the projects and methods model). I provided Mark with information in May 2013 (model input files) that included Peabody Coal's proposed reservoir on Trout Ck since I had incorporated that reservoir in the Yampa model that was available on the CDSS website and made several improvements to baseflows on Trout Creek, the representation of some of the aggregated diversion structures, etc. Mark incorporated those changes in the version of the model he was working on. In return for working with Mark to make these improvements to the model, Mark said in his email that when he was done making other changes and the model was finalized for their purposes, the final version of the model would be made available so that I could use it for permitting related work on Peabody's proposed reservoir. If necessary I can forward all the email communication I had with Mark. I was also in contact with Ray Alvarado about this.

Since Mark has left CDM I was told that you are now the contact for the Yampa related work. Shaden at AMEC mentioned that he received a copy of the latest version of the Yampa Model sometime in March this year for the work he is doing on the basin implementation plan. Can I get a copy of those model files? If you are not the right person at CDM could you point me to the correct person to obtain the latest and greatest model. Has there been any documentation of the changes that Mark made to the model?

Thanks

Glennon, Jody

From: Heather Thompson <Heather@erccolorado.net>
Sent: Tuesday, July 08, 2014 4:31 PM
To: Merritt, David; Glennon, Jody
Cc: Heather Thompson
Subject: Conversation with Kevin McBride

Hi Dave, Jody,

The following is a summary of a phone conversation I had today with Kevin McBride regarding the CDSS Yampa River model. This was follow-up to the study report status mtg where Andy Rossi mentioned the Upper Yampa Water Conservancy District was doing some work with the model. Kevin indicated that the intent it to use the version of the model that was finalize by CDM this spring for the Basin Implementation Plan. That is the version of the model that was provided to me by Mark McCluskey with CDM. The version of the model revised by CDM includes some corrections/refinements to the releases from Stagecoach Reservoir. The original version of the CDSS Yampa model from 2009 showed too much water was released from the Stagecoach Reservoir for environmental purposes. In addition, there were other corrections made to the model. The Conservancy District has recently hired Joe Messina, a local hydrologist out of Steamboat, to use the model for some drought planning analyses and to evaluate a proposed project. I am going to contact Joe so I can get a better understanding of what he is changing in the model. I need to confirm Joe is not making any other corrections to the model but rather using it in the same manner we will be to analyze a project or drought impacts. I will try and contact Joe later this week assuming Kevin forwards his contact info to me by then. Kevin wanted to give Joe the heads up that I would be calling him first.

Also, Dave, as we discussed it would probably be good for Brian and possibly you to get back in touch with the Conservancy District and Round Table reps regarding the project at some point this fall/winter.

Let me know if you have any questions.

Thanks
Heather

From: Heather Thompson [<mailto:Heather@erccolorado.net>]
Sent: Monday, July 28, 2014 4:05 PM
To: Glennon, Jody; Merritt, David
Subject: FW: CDSS Yampa Model

Hi Jody, Dave,

I had a good conversation with Joe Messina regarding the Yampa CDSS model this afternoon. He is making some additional changes to the version of the Yampa CDSS model that CDM released out this March for the Yampa Water Conservancy District. The good news is that he is making very few corrections. He is adding a minimum flow release of 20 cfs from Stagecoach through the winter months and is making sure that hydropower operations at Stagecoach for Tri-States are turned off and that a very junior instream flow right owned by Colorado Water Trust is turned off. I guess that right is so junior it doesn't ever operate. Those are the only changes that he listed below that I think should be included in the version of the model that is used to model Peabody's proposed Trout Ck Res. The other changes he is making pertain to future operations/projects and Joe and I felt they weren't necessary for Peabody's permitting effort. Joe thinks he will have the Stagecoach changes completed in the next month or so. We agreed that I would stay in contact over the next 1 to 2 months and he would provide me with the version of the model after he is done making the additional changes to Stagecoach Reservoir. At that point I would have a version of the model that I think the Conservancy District would agree is reasonable to use for Peabody's permitting process. Unfortunately CDM didn't get all the changes that I provided to them for Trout Ck quite right in the model so I may need to take a step back and correct a few things in Trout Ck in CDM's model but I'm hopeful that won't take too long. I'm going to look into that in more detail in Sep and Oct.

If you have any questions let me know.

Thanks
heather

From: Joe Messina [<mailto:njmessina@gmail.com>]
Sent: Friday, July 25, 2014 2:55 PM
To: Heather Thompson
Subject: Re: CDSS Yampa Model

Hi Heather...

Sorry for the late response, I was away on vacation and had no email or phone.

It sounds like you've got it pretty much correct... it also sounds like you're doing the same thing I'm doing... only you're double checking for Peabody, I'm double checking for UYWCD.

I'm altering the PnM model that was created by CDM (although we got it from AMEC). I'm making changes to that model based on the operations of UYWCD that we do not believe were modelled correctly in the PnM model. We will also be including projects that are not yet completed but we'd like to model anyway just to see what impacts those projects would have on future hypothetical situations.

The baseflows I'll be using will be the historical as well as some paleo hydrology scenarios created by AMEC.

Specifically, the changes I'm working on right now are:

1. Change operations of Stagecoach Reservoir to include an environmental minimum flow.

2. Include our Four Counties water rights in the model.
3. Create operating rules for a reservoir on Morrison Creek.
4. Implement an augmentation plan for some of the water in Stagecoach to supply out of priority depletions downstream.

I'm pretty new at Statemod so I'm not sure how much help I'll be... but please stay in touch and let me know if there's any way I can be of assistance. Maybe we can talk by phone next week? Thanks for getting in touch and have a nice weekend!

Joe
njmessina@gmail.com
303-909-5535

On Jul 22, 2014, at 10:41 AM, Heather Thompson wrote:

Hi Joe,

I talked with Kevin about 2 weeks ago regarding some work that I am doing with the CDSS Yampa Model. Kevin said it was OK to contact you to get some information on the work you are doing with the model for the Conservancy District. I was in touch with Mark McCluskey about a year ago and provided him with info on changes I made to the model to improve baseflows and the representation of aggregate demands and the instream flow water right on Trout Ck. Mark included those changes in the updated CDSS model they worked on for the Project and Methods Study. Mark provided me with the latest version of the model they completed for that study, which was released in February or March this spring. Could you provide me with a general description of the changes you are making to the model? Are you starting with the version of the model that CDM provided to me, which was released this spring? If so, are the changes you are making related to new projects that the Conservancy District wants evaluated or are the changes additional corrections/refinements to the model? What I would like to determine is whether the version of the model that CDM finalized for the Projects and Methods Study is the appropriate version to be using for analyzing Peabody Coal's proposed Trout Ck Reservoir for their permitting process. If you are making changes to the model to correct or refine CDM's version of the model I would like to better understand what those changes are to determine whether they are important to include for the modeling I'll be doing. If the changes you are making are geared toward analyzing new projects, then I'm probably fine moving forward with the version of the model that CDM released this spring. What I'm trying to avoid is using the version of the model that CDM released only to find out down the road that there were still some things that aren't quite right.

Peabody is collecting additional flow data on Trout Ck over the next several months which I'll be using to evaluate the methodology used in the CDSS model to estimate baseflows in Trout Ck. Once that work is done I'll move on to modeling the proposed project. My guess is that I'll be working on that modeling during the first quarter of 2015. If I use the flow data being collected to revise the baseflow proration methodology used in the model to estimate baseflows in Trout Ck I told Kevin that I would pass that information along to you.

If it's easier to discuss this on the phone you can contact me at (303) 679-4820 ext. 103. Thanks for your help on this.

Thanks,
Heather Thompson
Ecological Resource Consultants
(303) 679-4820 ext. 103 (o)
(720) 320-2428 (c)

From: Kevin McBride [<mailto:kmcbride@upperyampawater.com>]
Sent: Friday, July 18, 2014 5:55 PM
To: Heather Thompson
Cc: Joe Messina
Subject: RE: CDSS Yampa Model

Heather,
I've copied Joe on this email, hopefully you two can touch base on the model soon.

Regards,
Kevin

Kevin McBride, P.E.
General Manager
Upper Yampa Water Conservancy District
P.O. Box 775529
Steamboat Springs, CO 80488
(970)871-1035
kmcbride@upperyampawater.com

From: Heather Thompson [<mailto:Heather@erccolorado.net>]
Sent: Tuesday, July 08, 2014 3:37 PM
To: kmcbride@upperyampawater.com
Subject: CDSS Yampa Model

Hi Kevin,

Thanks for taking the time today to discuss the work your group is doing with the CDSS Yampa model. If you get a chance would you mind sending me Joe Messina's contact information? I would like to give him a call to get an understanding of what he may be changing in the model. What I would like to determine is whether the version of the model that CDM finalized for the Projects and Methods Study is the appropriate version to be using for analyzing Peabody Coal's proposed Trout Ck Reservoir. If Joe is making changes to the model to correct or refine CDM's version of the model I would like to understand what he is changing so I can judge whether that is important to include for the modeling I'll be doing.

Peabody is collecting additional flow data on Trout Ck over the next several months which I'll be using to evaluate the methodology used in the CDSS model to estimate baseflows in Trout Ck. Once that work is done I'll move on to modeling the proposed project. My guess is that I'll be working on that modeling

during the first quarter of 2015. If I end up revising the baseflow proration methodology used in the model to estimate baseflows in Trout Ck I will make sure to pass that information along to you and Andy.

Thanks
Heather Thompson

This e-mail and any attachments contain URS Corporation confidential information that may be proprietary or privileged. If you receive this message in error or are not the intended recipient, you should not retain, distribute, disclose or use any of this information and you should destroy the e-mail and any attachments or copies.