PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM
Water Advisory Committee Meeting Minutes
Nebraska Game and Parks Commission – Lake McConaughy Visitors Center
February 28, 2017

Meeting Attendees

Water Advisory Committee (WAC)

State of Colorado
Suzanne Sellers – Member

State of Wyoming
Bryan Clerkin – Member
Jeff Cowley

State of Nebraska
Jessie Winter – Member

U.S. Fish and Wildlife Service
Jeff Runge – Alternate (on phone)

U.S. Bureau of Reclamation
Brock Merrill – Alternate

Downstream Water Users
Cory Steinke – Chair
Jeff Shafer – Member
Tyler Thulin
John Thorburn (on phone)

Colorado Water Users
Jon Altenhofen – Member

Upper Platte Water Users
Dennis Strauch - Member

Environmental Groups
Jacob Fritton – Member
Duane Hovorka – Member

Executive Director's Office (ED Office)
Jerry Kenny, ED
Darren Beck
Scott Griebling
Seth Turner
Kevin Werbylo
Chad Smith (on phone)
Bill Hahn (Special Advisor)
Dmitry Smirnov (Special Advisor)

Contractors
Matt McConville – HDR (on phone)
Pat Engelbert, HDR (on phone)

Welcome and Administrative: *Cory Steinke, WAC Chair*
Introductions were made. Turner clarified that the First Increment Extension NEPA Process and Water Projects Work Plan agenda items do not require any action or motion; a revised agenda was available on the website. There were no edits reported on the October 2016 WAC meeting minutes. Motion to approve meeting minutes was made by Shafer, seconded by Merrill, unanimously approved. Shafer made a motion to nominate Steinke as WAC chair, Altenhofen seconded, unanimously approved.

PRRIP First Increment Extension NEPA Process: *Chad Smith, EDO*
Smith (on phone) reviewed the summary table of anticipated environmental impacts associated with the proposed First Increment Extension that was circulated by email. There are not many NEPA-relevant changes anticipated for the Extension. Water projects to provide 40,000 AFY of score will be completed as quickly as possible. Merrill said to consider this as a preliminary scoping document for a contractor that will be hired to work through the NEPA process; Reclamation is looking to the advisory committees for input on potential environmental impacts. Smith said the summary table will be reviewed again at the March GC meeting, and asked that comments be submitted to him prior to the GC meeting.

WAP Projects and Other Brief Water Updates

J-2 Regulating Reservoir: *Cory Steinke, CNPPID*
Steinke returned to landowners artifacts that were collected during field investigations for the J-2 Regulating Reservoirs. Kenny asked if soil and other geotechnical samples were back in CNPPID possession; Sellers inquired about the types of geotechnical samples. Steinke described and confirmed that the samples had been moved from Denver to the CNPPID's J-1 garage for storage. The samples were previously analyzed, and there are no concerns about moisture or other potential damage. The only ongoing work is the monitoring of water levels, completion of a structural report related to the project, and website maintenance. CNPPID expenditures on J-2 were only about $20,000 for the most recent quarter. Don Kraus will provide the project update on behalf of CNPPID at the March GC meeting.

Werbylo (in response to Kenny) confirmed that the EDO has all of the available J-2 geotechnical data as of December 2016.

CPNRD Water Leasing Permits: *Jerry Kenny, ED*
Kenny reported that the price structure for CPRNRD water was revised at the December GC meeting. Previously, leased surface water and groundwater recharge of diverted excess flows were at the same price, but are now separate, starting at $150/AF for surface water and $43/AF for groundwater. The Program pays for the volume of water at the river.

NPPD Water Leasing: *Jeff Shafer, NPPD*
Shafer reported that NPPD is still waiting for the Nebraska DNR to act on the surface water transfer application. Kenny inquired about a timeframe, and Shafer said he hoped to discuss with Mike Thompson of DNR in the near future but that there is no specific timeframe. In

addition, there are potentially more surface water acres to transfer to instream uses, but the numbers are not yet finalized.

CNPPID Water Leasing: *Jerry Kenny, ED*

The Program is in the second year of a pilot project to lease water from irrigators, with CNPPID serving as administrator. If there is not full allocation, CNPPID allows water trading between irrigators. However, both years have been full allocation, opening up opportunities for the Program to lease water otherwise used for irrigation. Steinke said letters go out to all irrigators informing them of the opportunity to participate, and that information also spreads by word of mouth.

Kenny explained that the Program pays $220 per acre and receives 9 inches of water per acre. This water is in storage in Lake McConaughy and is transferred to the EA on October 1. Lands from which water is leased are generally odd-shaped parcels or pivot corners, and must be fallowed or dryland farmed. The Program's pilot project is capped at 2,000 acres. Altenhofen inquired about participation in both years. For the first year, 1,037 acres were enrolled. Turner reported that 1,275 acres were enrolled for the second year, about 20 percent more. These acres included 53 of 58 accounts from the first year plus 31 new accounts for a total of 84 in 2017.

Kenny said there appears to be some cultural resistance among irrigators to participate. It also may be that the Program hasn't figured out the premium price that will entice participants. Steinke added that another factor may be competition among neighbors. Strauch asked if deliveries are monitored, and Steinke responded that CNPPID takes steps to make sure participants in the leasing program are not irrigating those lands.

COHYST Update*: Scott Griebling, EDO*

Griebling reported that the COHYST models are nearly 100 percent calibrated, and model documentation is in progress. The models are expected to be complete in June 2017. The model is somewhat underpredicting Phelps County groundwater levels, which is not ideal for the Program because that is where many of the Water Action Plan projects are located, but it is something the Program can work with. Winters confirmed that to her knowledge the COHYST sponsors decided not to take any further action to improve the model's performance in the Phelps County area. Kenny added that some of the comparison wells may have been too close to the Phelps County Canal, and that more representative observation wells may have produced better results.

Water Projects Work Plan: *Seth Turner, EDO*

Turner presented on the status and approved scores of Water Action Plan projects nearly two years after the completion of the 2014 WAP Update. At that time, there were three projects with approved scores totaling 37,300 AFY (J-2 Regulating Reservoirs, Pathfinder Municipal Account Lease, and Phelps County Canal Groundwater Recharge). In the time since, scores for two projects were approved by the GC (No-Cost NCCW and Cook Recapture Well, a combined 420 AFY), and the J-2 project (30,600 AFY) was placed on hold. Present approved scores—

excluding J-2—now total 7,120 AFY. In 2017, EDO staff will focus on completing score analyses for the CPNRD recharge and leasing as well as for Elwood Reservoir recharge; the EDO also plans to initiate scoring for NPPD groundwater recharge.

The EDO is a developing a road map for completing projects with a cumulative score greater than 40,000 AFY by 2024 or 2025. Turner explained that this includes completing the Cottonwood Ranch broad-scale recharge project by 2019 and an initial slurry wall storage project by 2019 (if small-scale pilot) or 2021 (if full-scale). During this same time period (2017-2019), lands for additional projects will be identified and acquired. Other projects include adding recapture wells to the Phelps and Elwood recharge projects (by end of 2018) and possibly to the Cottonwood Ranch project once it is completed and operational; adding storage and/or recharge to re-time surface water and increase scores for CPNRD and NPPD recharge and leasing projects (by end of 2021 and 2024, respectively); multiple full-scale slurry wall projects (between 2020 and 2025); and acquire & retire projects (through 2024).

Altenhofen asked how many acres were acquired under the Alliance Canal, and at what cost. Kenny said about 30 acres at fair market value, but he didn't have the exact price on hand.

Phelps Groundwater Recharge Project: *Darren Beck, EDO*

Beck provided an update on Phelps County Canal groundwater recharge during the 2015-2016 season, overall Phelps recharge from 2011-present, and operation of the Cook well in 2016. Recharge occurred from mid-November 2015 to mid-February 2016, and again on March 16-17, 2016. Program allocation at 75% of diversions totaled 4,183 AF; after accounting for recharge upstream of the measurement device at MM1.6 plus evaporation, total recharge diversions for the Program were 4,741 AF during 2015-2016. The Cook well was approved by the Tri-Basin NRD in November 2015 and operated during times of shortage in October and November 2016, with a total pumped volume of 120 AF.

There was also discussion of a landowner concerned with high groundwater levels. Steinke said CNPPID and the EDO are reviewing well data (and streamflow) from before and after 2011 to see if it is influenced by Phelps recharge, or more by proximity to river. Beck (in response to Altenhofen) said that there is a river stage gage at the Overton bridge, which can be used to evaluate effects of being in close proximity to the river. Beck showed groundwater data from the river but said there have been no significant findings yet.

Broad-Scale Recharge Update: *Kevin Werbylo, EDO, and Bill Hahn, Hahn Water Resources*

Werbylo reviewed elements of the Cottonwood Ranch feasibility assessment from 2016 (infiltration testing, geophysical testing). The Program constructed two infiltration test pits, one excavated and one bermed, and conducted periodic fill-and-drawdown tests between March and November 2016. Results were an average 0.19 ft/day infiltration for the bermed pit, and 0.08 ft/day in the excavated pit.

Ten boreholes were drilled at the Cottonwood Ranch complex in September 2016. All were fairly uniform, with findings of 2-3 ft topsoil (more near uplands) and 35-45 ft of alluvial sands and gravels. There were a few thin (0.5-1 ft) clay seams, but not in all boreholes. A very hard low-permeability layer was found at the base of the alluvial materials. Sellers inquired about the possibility of using Cottonwood Ranch for a slurry wall project. Werbylo said there is nothing known that would prevent the Program from putting such a project at the site, but in the meantime, the planned broad-scale recharge project Cottonwood Ranch allows the Program to maintain crane habitat simultaneous to a water project.

The USGS completed Ohm-mapper field surveys in September 2016, and presented preliminary results to the EDO in November 2016. Overall, the Cottonwood Ranch site looks generally conducive to (broad-scale) recharge, and there were no red flags in any of the various test results. Werbylo also reported that the EDO developed a groundwater model of the Cottonwood Ranch vicinity, which estimated about 40 AF/day of recharge potential at the site.

Werbylo reported that an RFP for engineering design and construction administration was posted on January 3, 2017, and proposals were due on February 1. A total of 7 proposals were received, and 3 firms were short-listed for interviews. The interviews will be held at the EDO office in Kearney on the afternoon of Monday, March 6. Only the selection panel will be involved, and it is expected that the contractor to be selected that afternoon, hopefully under contract by mid-March. The broad-scale recharge project at Cottonwood Ranch will be constructed in phases. Depending on permitting timelines, dirt may be moved in late 2017 or early 2018. Based on the conceptual site designs, surface storage behind the berms would be about 500 AF. Altenhofen asked about adding turnouts to the river from the recharge cells such that water can be released if it is not infiltrating quickly; Kenny said that concept could be a consideration. Werbylo also confirmed that the EDO will continue to look at other potential broad-scale recharge sites during design and construction at Cottonwood Ranch. The EDO will also update its numerical model as needed for the design and scoring efforts.

Altenhofen inquired about the means of water delivery to Cottonwood Ranch, which will most likely be a pipeline from the Phelps County Canal. Steinke and Thulin reported that the pipeline will be about 2 miles long, PVC with a 42-inch diameter and capacity of 70-80 cfs. Costs for the pipeline are expected to be about $1M, and CNPPID will probably bid out the project. Clerkin inquired about the timing of pipeline construction. Steinke said it was too late to be able to build it in the spring, so the pipeline will likely be built in the fall of 2017.

Bill Hahn of Hahn Water Resources, a Special Advisor to the EDO, presented on possible means of surface water diversion as an alternative to the pipeline. Shallow wells that effectively divert surface water are referred to as “headgate wells” in Colorado. Hahn evaluated several alternatives, including vertical irrigation wells; infiltration galleries installed through a process of continuous trenching, lateral placement, and backfill; and Ranney (radial) collector wells. Hahn presented a table showing the number and cost of these types of wells to achieve a range of diversion rates (up to 50 cfs). Depending on the desired rate, anywhere from 7 to 22 irrigation

wells may be required. Infiltration galleries are more expensive, are generally limited by the standpipe capacity, and would require nearly as many facilities as irrigation wells to achieve the same flow rates. Ranney collectors are more often associated with diversions from much larger river systems, and are substantially more expensive than the other options. In response to questions from WAC members, there was also discussion of pumping directly from the river instead of through the alluvium, as well as the need to consider operations and maintenance costs along with construction costs, given the number of irrigation wells or infiltration galleries needed.

Slurry Wall Gravel Pits: *Kevin Werbylo and Seth Turner, EDO*

Turner gave a brief recap of the borehole testing results from Aug-Oct 2016, then summarized three potential approaches to an initial slurry wall project: (1) a small-scale (10-20 acres) non-functional pilot which would simply test the structure and function of a slurry wall constructed in central Platte River alluvium; (2) a similarly-size functional pilot project, which would be excavated to provide usable gravel pit storage and would also include necessary inlet and outlet infrastructure; and (3) a full-scale slurry wall project, which could be either an aquifer storage facility on the order of 120 acres or a gravel pit of perhaps 60 acres.

Turner clarified that Approach 1 would be the fastest (about 1 year) and least expensive (about $700k to $1.2M) option, but would not provide the Program with a usable water project after the completion of pilot testing. Approach 2 would create a small water project that could continue to be used after pilot testing and would produce a score on the order of a couple hundred acre-feet. A functional pilot project would take about 2 years to design, permit, and construct, and would cost $1.6M to $3M depending on size. Cost and score estimates for Approach 1 and Approach 2 were based on using the Bartels property and the Program's Elm Creek Complex. Depth to a low-permeability layer at this site is about 20 ft, and the nearby Kearney Canal would be a likely means of conveying water to the site.

Turner explained that design, permitting, and construction activities associated with Approach 1 and Approach 2 could feasibly begin in the near future. If Approach 3 were to be aquifer storage on existing Program lands, the project could begin fairly soon. However, it may take up to 2 years to acquire an existing sandpit before a slurry wall gravel pit could be initiated under Approach 3.

Extensive discussion ensued. Approach 1 was not viewed favorably because it doesn't provide the Program with anything usable beyond test results. The WAC members were generally opposed to aquifer storage due to potential patent issues, low yields compared to a gravel pit, and significant limitations on inflow/outflow rates due to well pumping issues.

The WAC members were generally in favor of using existing pits and encouraged the EDO to continue looking at opportunities to use existing pits for slurry wall storage. Werbylo and Turner pointed out that pits with active mining tend to have little shoreline vegetation, but older pits,

many of which date to the construction of the interstate, tend to be surrounded by vegetation that could qualify as wetlands and thus require more extensive 404 permitting.

Hovorka made a motion recommending pursuit of a small-scale gravel pit pilot project on Program lands (Approach 2) with a simultaneous search for existing sand and gravel pits suitable for acquisition and development of a full-scale slurry wall gravel pit project. Motion was seconded by Strauch and unanimously approved.

Groundwater-Surface Water Interactions at the North Platte Chokepoint: *Scott Griebling, EDO*

Griebling presented on groundwater-surface water interactions at the North Platte chokepoint. In general, the results of the study showed that higher releases for longer durations from the Lake McConaughy Environmental Account may cause groundwater levels to rise to the ground surface in areas with shallow groundwater. The main factor in determine whether this would happen or not is the antecedent conditions just prior to the increase in flow. Altenhofen asked about surface water flooding due to increased flows, and Griebling said that it is being considered as part of a separate analysis and Kenny followed up by saying that there is very little surface flooding when flows are raised to intended levels. Griebling said the Program will continue monitoring the groundwater response to prolonged high river stage and will present relevant results at following meetings.

Hydroclimatic Indices Update: *Dmitry Smirnov, Dewberry*

Smirnov gave an overview of hydroclimatic indices work to date, with a focus on the Phase III work completed in 2016. Smirnov also reported on forecasts of May-June-July (MJJ) flows for 2017, as well as a forecast website that is in development, expected to be up and running in the next couple weeks. The forecast website will be linked from the Program website. The 2017 forecast generally predicts average flows in both the North Platte and South Platte Rivers.

Additional Business: *Cory Steinke, WAC Chair*

The May 2 WAC meeting rescheduled to April 25 due to EDO staff not being available on the original date.

Shafer suggested that the WAC form a sub-committee to assist the EDO with slurry walls and other technical matters. Shafer made a motion, Sellers seconded, unanimously approved. Membership in the sub-committee would be voluntary; potential members included Altenhofen, Hovorka, Shafer, Sellers and Steinke.

Action Items

General WAC

- Convene new sub-committee for initial discussions prior to next WAC meeting.

ED Office

- n/a