



PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM
Water Advisory Committee Meeting Minutes
Nebraska Game and Parks Commission – Lake McConaughy Visitors Center
October 20, 2015

Meeting Attendees

Water Advisory Committee (WAC)

State of Colorado

Suzanne Sellers – Member

State of Wyoming

Bryan Clerkin – Member

Philip Stuckert

State of Nebraska

Jessie Weitjes

U.S. Fish and Wildlife Service

Tom Econopouly – Member

U.S. Bureau of Reclamation

Brock Merrill – Alternate

Downstream Water Users

Cory Steinke – Chair

Duane Woodward – Member

Jeff Shafer – Member

Landon Shaw – Member

Nolan Little

Tyler Thulin

Mike Drain

Colorado Water Users

Jon Altenhofen – Member

Luke Shawcross

Upper Platte Water Users

Dennis Strauch – Member

Environmental Groups

Duane Hovorka – Member

Bill Taddicken – Member

Jacob Fritton

Executive Director's Office (ED Office)

Jerry Kenny, ED

Scott Griebeling

Seth Turner

Bill Hahn (Special Advisor)



Welcome and Administrative: *Cory Steinke, WAC Chair*

Introductions were made. There were no agenda modifications. Steinke reported no changes to the August 2015 WAC meeting minutes. Motion to approve was made by Sellers, seconded by Shafer, unanimously approved.

WAP Project and Water Updates

Phelps Groundwater Recharge Recapture Project: Jerry Kenny, ED

Kenny reported that additional analyses are being completed to show that depletive effects will not increase as a result of adding a pumping well to this project. Vote for approval by Tri-Basin NRD expected in November. There will be a couple conditions to the permit: (1) if associated land leaves Program ownership, well has to be abandoned or new owner must apply for a new permit to continue operating; (2) Tri-Basin NRD can count the water added to the river by the Program as part of the water that counts toward moving the designation of their area from fully-to over-appropriated (basically accounting measure for the state, doesn't affect the Program). Drain asked for clarification that water is not being double counted in accounting measures, and Kenny confirmed.

CPNRD Water Leasing: Duane Woodward, CPNRD

Woodward reported that the transfer of surface water for all three canals was completed by late August or early September. Totals were about 9,300 AF back to river for Cozad; 3,000 for Orchard Alfalfa; 5,500 back for Thirty Mile, all values somewhat less after factoring in depletions. Now evaluating effects of pumped water on irrigated lands.

Excess flows became available 9/8/15, at which time the CPNRD started diverting excess flows into all three canals. Cozad diverted 2,073 AF from 9/8-9/30, after which excesses were no longer available. Estimated recharge was 1,383 AF based on what left the wasteways. Other related analyses are in progress, as the data just became available. Orchard-Alfalfa filled 9/8-9/17. Next opportunity for excess flows probably November 11, after target flows drop from 2,400 cfs again.

The CPNRD worked with the NDNR on accounting for surface water transfers. Surface water operations for the year were based on temporary transfers filed in April-May 2015, so this year served as a pilot project. Additional discussion of water protection, whether other canals could immediately re-divert returns.

Altenhofen asked for clarification of leasing agreements. Kenny explained that there are two components: surface water and groundwater recharge. The Program is paying \$40/AF in 2015. With 40-50% efficiency on groundwater recharge (percent that comes back during times of shortage), this translates to roughly \$80/AF for recharge. Program pays for surface water returns whether they occur during shortage or not.



Kenny reported that EDO is making progress on scoring the CPNRD leases, with the intention of presenting to the scoring subcommittee in January. This assumes NDNR approvals of the surface water transfers. Additional discussion regarding timeliness of NDNR approvals followed. It was noted that if a project ends up quite different in implementation than at time of scoring analysis, it will probably need to be revisited by GC.

NPPD Water Leasing: Jeff Shafer, NPPD, and Jerry Kenny, ED

Kenny reported on issues outstanding –

1. Price and insights that may be provided by water market mechanisms being tested this fall, e.g., surface water leasing (CNPPID market) and the NDNR/CPNRD groundwater market. Woodward reported that the groundwater market will likely be approved by the CPNRD board, just working to get mechanism up and running, probably by January.
2. Surface water relinquished accompanied by groundwater pumping instead. Discussion of who is responsible for depletions. Kenny working to get meeting scheduled with NDNR to discuss the issue, hopefully in December.

CNPPID Water Leasing: Jerry Kenny, ED

Kenny reported that the water service agreement (WSA) was approved by the GC in September 2015, and approved by the CNPPID's board as well. Solicitations for surface water are underway. Associated land will be required to go dryland; anticipated to be pivot corners and similar, and the land needs to have actually been irrigated in recent years. Program is looking for 2,000 AF, and will pay \$220/AF (plus small administration fee to the CNPPID); this is expensive water, but it's a one-year pilot and the Program didn't want to lowball and have it backfire with no interest in participation. Report from the CNPPID irrigation manager is that there appears to be strong interest. Water would be transferred to EA in October 2016, and payment would occur at that time.

In response to Altenhofen question, Kenny and Drain clarify that all operations are within the bounds of EA agreements, etc. Strauch and Altenhofen asked whether return flows from on-farm application are accounted for. Kenny says this was ignored for small-scale pilot. If this expanded into a larger project, probably need some sort of augmentation plan. Drain reported that total deliveries to the CNPPID surface water users are about 12 inches/acre, of which 9 inches/acre is consumed (thus about 3 inches of return flows).

Other Brief Water Updates (Wet Meadows, COHYST): Scott Griebing, EDO

Wet Meadows—

Griebing reported that wet meadows monitoring has been continuous since 2013, and peer review of monitoring practices is in progress. The Program is replacing stage gages damaged in recent high flows; it has been hard to maintain stage gages on a sand-bed river. EDO is finalizing internal responses to peer review questions, and a call to discuss is being scheduled (likely 11/2).



Once the workgroup approves, the results of the peer review will likely be presented to the GC in March 2016.

Kenny added that wet meadows were discussed at the AMP reporting session on October 13-14. One big issue was the measurement of ET. The Program is estimating ET several ways, but not actually measuring presently. The peer reviewers were critical of that approach and suggest it will not produce research quality data. Response is that the Program is doing this work for guiding management decisions, not intending to publish in tech journals, therefore not worth the expense of measurement devices. This approach was widely supported by WAC. There was also discussion of the groundwater modeling approach used by EDO staff for wet meadows.

COHYST—

Griebeling reported that work on the graphical user interface (GUI) is progressing, and that initial results are promising. The GUI facilitates an integrated model: groundwater, surface water, and watershed models. So far the GUI is working well to run them together rather than having to hand off between several consultants. Looking to be able to add Program features and so forth to the model(s).

J-2 Regulating Reservoir(s) Options: *Cory Steinke, CNPPID and Jerry Kenny, ED*

Steinke reported that the CNPPID paused land acquisition after the August updates. Consultant RJH is looking at alternatives, what can be achieved with existing budget. The storage vs. score curve prepared by the EDO was shown, which indicates that with storage of about 7,000 AF, can potentially still achieve 20,000 AF Program score (plus 25% for DNR).

Target costs for a reconfigured J-2 regulating reservoir(s) are \$63M for construction, \$75M with land acquisition, the numbers used in association with the original concept. This will require balancing of budget and yield of various projects to re-align WAP budget and yield targets (50-70,000 AF).

Kenny reported that Ed Toms (URS/AECOM) was brought on as civil design special advisor. Toms will be reviewing RJH work. His expertise is dams and large hydraulic structures, with 30 years' experience on projects throughout the west. The plan is to also be looking at alternative liner concepts, synthetic versus clay, leaking a little, perimeter wall versus liner, etc., but the present focus of RJH work is on dollars versus storage.

Sellers inquired whether EDO would be reevaluating other reservoirs such as Elm Creek. High costs from 2011 seem a lot cheaper compared to where J-2 is now. Review should be completed as a matter of due diligence. Kenny agreed that it would be good to get such a review on paper at some point; but it is still reasonable to get rid of Elm Creek (many of the J2 cost issues would apply to Elm Creek, further into the habitat, on a live stream, residences impacted, issues with getting water into the reservoir—pump from Platte during excess or massive improvements to Dawson County Canal to get water there). Discussion continued regarding competency of consultants.



Once the GC settles on a new configuration for J-2, will proceed to reevaluate water service agreement with the CNPPID (is there a Reservoir 2, do they still get benefit for hydrocycling and/or irrigation and power efficiency, etc.). Hovorka asked whether NDNR is looking at other options to make up the depletions shortfall a smaller J-2 would leave for them, Kenny responded that Program continues to assume that the State is in for 25% of the total project yield. If NDNR is looking at other options, he was not aware of their efforts in that regard. Initial revised J-2 concepts will likely be presented to GC in December.

Broad-Scale Recharge Concepts: *EDO Staff and Bill Hahn, EDO Special Advisor*

Kenny reported that given issues of time within the remainder of First Increment, there is potential to get the broad-scale recharge concept underway sooner, on an incremental basis. Unlike a reservoir project, don't have to build everything at once.

Accounting for approximately 20,000 AF from J-2, other leasing projects, etc., something on the order of 20,000 AF from the broad-scale recharge project closes the loop on the water milestone. This could largely be achieved using re-timed water.

EDO staff taking a broad look, basically the reach from Gothenburg to Odessa. There have already been some talks with the CPNRD regarding Thirty Mile, Cozad, and Orchard-Alfalfa. Dawson County Canal likely to be involved as well, but haven't really talked with the NPPD yet. Analysis of broad-scale recharge was mostly a paper exercise to this point. It appears that most excesses available in the CNPPID system (at Phelps).

Lands near the river are great for recharge, primarily in the range of 1,000-5,000 feet from the river (1/4 mile to a mile). Program owns land in the area at Cottonwood Ranch, including the Morse Tract. In addition, if the Program applied water to neighboring lands in the spring/fall, neighbors amenable to using for water fowl hunting. Initial budget was assuming purchase of 2,000 acres for recharge, may need considerably less (perhaps only about 500 acres) with what Program already owns, plus willing neighbors.

Water added to recharge sites during the fall could reach river during time of shortage during late spring. Likewise, water put in around March could reach the river during July-August. Further from the river, the amount that returns during periods of shortage would be reduced. With a target score of about 20,000 AF, would need to recharge about 50,000 AF, assuming 40% score efficiency. Preliminary analyses are not emphasizing the potential habitat aspect of the recharge sites, but there could be incidental habitat available in spring/fall.

Sellers asked if seepage from J-2 could be scored (assuming leakier liner). Kenny said it could potentially be considered.

**Funk Lagoon WAP Feasibility:** *Scott Griebing, EDO*

Griebing reported that Funk Lagoon has long been a potential WAP project. The project concept has evolved from retiming of irrigation return flows (e.g., Boyle Recon-Level WAP in 2000) to groundwater management by pumping the mound and returning through North Dry Creek cutoff (WAP Update in 2009) to retimed excesses from the CNPPID system via Phelps Canal (surface water storage and/or groundwater recharge – present concepts).

The Funk Lagoon is located in a natural depression on property owned by Rainwater Basin, and the Program would lease. Phelps County Canal circles around south side of lagoon. Lost Creek and North Dry Creek drain the area. Via the North Dry Creek cutoff, return of water from Funk Lagoon would benefit about 60% of associated habitat reach (40% reduction of full score).

Monitoring to assess WAP project feasibility:

- Gather data to approximate seepage, evaporation, direction of groundwater flow, impact of seepage on Funk and Axtell groundwater levels.
- Multiple partners in monitoring effort: CNPPID, Program, Tri-Basin NRD, HPRCC (High Plains Regional Climate Center), USFWS

Results:

- Monitoring shows groundwater gradients east and southeast, away from the Platte River. Groundwater flow is away from town of Funk, in the direction of Axtell. No visible groundwater mounding around Funk Lagoon, it's unlikely to have any effect on groundwater levels around Axtell (more likely just influenced by regional groundwater levels).
- There were extensive monitoring challenges. Funk Lagoon is subdivided into three main pools, with multiple management areas within each pool. There are multiple potential surface and groundwater delivery points. Site layout made it difficult to estimate volumes and seepage rates, etc.
- Water budget analyses. Goal from calculation is to get seepage. Bulk of water delivered to the lagoon is lost to seepage (small amount to evaporation).

Conclusion: Funk Lagoon is not a good option for either water storage or groundwater recharge. Too much seeps out for storage, would have additional transit losses to river. Seeps too fast for groundwater recharge, and the groundwater gradient is not towards Platte.

Motion from Sellers, with second from Econopouly, to send the Funk Lagoon report to the GC for review strongly in favor of not pursuing this project further. The WAC does not recommended Funk Lagoon as a WAP project. Unanimous approval.

High Flow Report Summary: *Scott Griebing, EDO*

Griebing presented a summary of the high flows report prepared by the EDO.



Document purpose:

- (1) Summarize and compare high flow events, 2007-2015
- (2) Evaluate high flows in light of SDHF criteria
- (3) Separate memos for each event
- (4) Update with each new high flow event.

The report assessed peak flows, return periods, durations, flow volumes, type of hydrologic year, etc.

Interim Hydrologic Conditions and Excess Flow Availability: *Scott Griebling, EDO*

Interim Hydrologic Condition—

Griebling reported on refined analysis since the presentation at the August WAC meeting.

Conclusion:

- Ignore presentation from last WAC meeting
- EDO calculated hydrologic condition using weekly PDSI from 1992-2015
- Only 5 of the 119 periods were changed by using weekly PDSI (<5%)
- 3 actual hydrologic conditions were drier, 2 were wetter
- Oct-Nov 2015 designation: shifted from NORMAL to WET
- Moving forward: Recommend using weekly PDSI for interim hydrologic condition values. WAC members agreed.

Excess flow availability—

Griebling reported on analyses to determine if there have been less winter excesses during 2007-2014 than in the 1947-1994 scoring period. The answer is yes. Analysis was completed using actual river hydrology for Jan-Feb-Mar and Dec, as well as OPSTUDY hydrology, with similar results. There is a great deal of variability in the availability of excess flows from year to year.

Conclusions:

- (1) Average winter excess during 2007-2014 is less but within standard deviation
- (2) Many years at or below 25% quartile of excess
- (3) Wet year/month excesses mask low excesses in dry months when looking only at the average.

Chokepoint Update: *Jerry Kenny, ED*

Kenny reported that permitting and mitigation issues have been worked out with the Corps regarding the wetland disturbance associated with the State Channel Project. The Corps wants 4:1 mitigation, and will accept new wetlands in the associated habitat reach. This will be about 10 acres of new wetlands for 2 acres of disturbance.



The new wetlands are proposed to be constructed on the Spiedell Property, which was land acquired from The Nature Conservancy. Some of these lands were originally paid for using NAWQA funds. NAWQA covered about 500 acres of the property, but the Program purchased 700 acres. The Program sent a letter to NAWQA requesting agreement that the 10 or so acres needed for mitigation are in the 200 acres not funded by NAWQA. If that agreement is not reached, Program will need to pay back grant funds to get rid of designation (~\$30,000). Plans and specs are in place for new wetlands design. Program is waiting for a response from NAWQA to confirm plans to Corps. Hopefully issues resolved by end of October. Thus, it is highly unlikely that the flood reduction project (State Channel Project) will proceed during the current season, and it will most likely pushed into 2016. The Project could happen during January-March depending on weather. The project is minimal in terms of earthmoving, but permitting hoops and cost have been excessive.

Additionally, Kenny reported that there is a potential emerging opportunity to engage with the Corps on a proposal to build levees in North Platte through choke point reach. The project would involve a couple miles of levees on either side of the river, upstream and downstream of bridge, but the primary focus is on south side of river, permanent levees. The project could result in a flood stage of 7 feet, which would have a capacity of about 3,500 cfs. The 6.5 feet flood stage the Program intends to achieve with the State Channel Project results in a capacity of 2,400 cfs.

2016 Draft Water Plan Budget: *Jerry Kenny, ED*

Kenny presented a spreadsheet with draft budgets for various water-related line items for 2016 and beyond, towards the end of the First Increment. Highlights include the following:

- CNPPID system groundwater projects include continued recharge at Elwood Reservoir.
- Broad-scale recharge in 2016 potentially includes building some berms on Program land, or pipes to deliver from CNPPID system, etc. Anticipated budget of around \$3M.
- Continue various leasing projects—both surface water and groundwater—with CPNRD, NPPD, CNPPID, etc.
- CNPPID leasing-storage is basically NCCW with a new name and approach.
- NPNRD leasing not likely to happen, probably eliminate from budget. Reducing budget for broad-scale recharge by using Program lands (along with no NPNRD) gets us close to actual budget constraints.
- Management tool = COHYST GUI. There will likely be a bit of consultant work.
- Water Plan Special Advisors: Bill Hahn (groundwater and well design), Ed Toms (civil design), and George Oamek (economics).
- Misc. Water Resources Studies: Dewberry hydroclimate studies. Kenny reported out on Dewberry studies for North Platte and South Platte that were completed in 2015.

Kenny stated that comments on the budget are welcome, that it's a work in progress. EDO needs to refine numbers and backup behind them. Total budget for the Water Action Plan



implementation is \$93M in 2005 dollars. Indexed to present, actual budget is about \$99M, but Program continues to work in context of 2005 numbers to have a bit of a buffer.

Additional Business: *Cory Steinke, WAC Chair*

Steinke presented the upcoming meeting schedule. Next WAC meeting is February 2, 2016, then May 3, 2016.

Action Items

General WAC

n/a

ED Office

Refine and finalize budget.