PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM
Water Advisory Committee Meeting Minutes
Lake McConaughy Visitors Center – Ogallala, NE
May 8, 2012

Meeting Attendees

Water Advisory Committee (WAC)

State of Wyoming
Matt Hoobler – Alternate

State of Colorado
Suzanne Sellers - Member

State of Nebraska
Pat Goltl – Alternate

U.S. Fish and Wildlife Service (USFWS)
Tom Econopouly – Member
Jeff Runge – Alternate
Mike George
Matt Rabbe

Bureau of Reclamation (BOR)
Mahonri Williams – Member
Brock Merrill – Alternate

Downstream Water Users
Cory Steinke – Member (WAC Chair)
Duane Woodward – Member
Jeff Shafer – Member
Mike Drain – Alternate
Tyler Thulin
Rich Holloway – (call-in)

Colorado Water Users
Jon Altenhofen – Member

Environmental Groups
Bill Taddicken – Member
Duane Hovorka – Alternate (call-in)
Larry Hutchinson
Greg Wingfield

Executive Director's Office (ED Office)
Jerry Kenny, Executive Director (ED)
Beorn Courtney
Steve Smith
Matthew Welsh
Bruce Sackett (call-in)

Contractors
Bill Hahn – Hahn Water Resources
Greg Glunz – URS
Pat Engelbert – HDR
Erin Gleason – AECOM
Mike Applegate – Applegate Group

Welcome and Administrative: *Cory Steinke, WAC Chair*
Introductions were made. There were no agenda modifications. **The February 2012 WAC Minutes were approved with the modifications by Hallum in the current version.**

Choke Point Update: *Steve Smith, ED Office*
Smith provided an update on the current capacity at National Weather Service (NWS) flood stage for the North Platte River at North Platte and the Platte River at Kearney gages. High flows in 2011 caused temporary increases in capacity at both locations, but the increased capacity at both locations has since subsided. No modifications are planned for either rating table at this time.

Root mass ripping of the phragmites is being planned for this year at North Platte with the objective of loosening roots to allow future high flows to more effectively remove sediment and increase hydraulic capacity. Based on a recommendation from Runge, **the ED Office will attempt to coordinate the timing of tillage operations with the USFWS to optimize flow conditions**.

Smith explained that engineering and institutional approaches are being considered to increase hydraulic capacity at NWS flood stage closer to 3,000 cfs at North Platte. Engineering approaches include dredging, bank stabilization, a sediment collector, and jetties and/or dikes. Smith noted that some of these approaches may be cost prohibitive, and permits for in-channel work may be difficult to obtain.

Institutional approaches (flood-proofing and/or property buyouts) may help support the NWS to increase the flood stage designation, which is currently 6.0 feet. Smith and Kenny met with local NWS staff in North Platte on May 7, 2012, and NWS expressed a willingness to consider a flood stage increase if drainage improvements were completed. NWS told Smith and Kenny that their policy is to set flood stage according to stage when flow leaves the channel (i.e., not based on high groundwater levels). River flows begin to go over-bank at a stage of about 6.5 feet based on hydraulic modeling and NWS observations during 2011 high flows. If flood-proofing projects prompt NWS to raise flood stage to 6.5 feet, then the capacity at North Platte would increase to about 2,400 cfs. Therefore, some level of engineered projects would still be required to achieve a capacity of 3,000 cfs.

Smith discussed engineering options to achieve higher capacity through the choke point:

- Dredging approximately 100,000 cubic yards between Highway 83 and the UPRR bridge every 2 to 3 years to maintain 3,000 cfs flood stage capacity. Cost would be about $500,000 each time dredging was completed.
- Jetties, in combination with some dredging, would increase flow velocity and result in greater longevity for increased capacity. Cost estimates for dredging 150’ pilot channel from Highway 83 to UPRR and installing jetties would be about $1.3M.
- Sediment collector may accomplish sediment removal without dredging. A demonstration project on Fountain Creek has been successful in Colorado. Cost of that project was

about $550,000 for installation and $300,000 for a year of O&M including costs for hauling material off site.

Drain asked about whether the sediment collector would potentially cause backwater upstream of the device and decrease capacity in another location. Smith said the device could be located upstream of flooded areas to prevent those unwanted effects.

Smith explained flood-proofing projects recently discussed with NWS, City of North Platte, and Lincoln County. Smith noted that engineering and permitting for the following projects would cost about $50,000:

- Re-connecting the 'State Channel' in the floodplain west and south of impacted properties along North River Road to divert surface flows to the North Platte River and away from impacted properties. Cost would be about $20,000 for construction.
- Installing a culvert and/or ground water pump outlet from Dr. Connell's property along the north bank of the North Platte River and just east of Highway 83 would minimize flooding on Connell's property and help improve drainage of high ground water levels at impacted properties along North River Road. Cost would be about $26,000 for construction.
- Installing about 12 driveway culverts along north side of North River Road west of Highway 83 would allow the existing road ditch to work more effectively at draining high ground water levels. Water would drain east down Hall School Road about two miles to Whitehorse Creek, where it would return to the North Platte River. Cost estimate for these culverts would be approximately $30,000.

NWS is considering developing an MOU with the Program about what the flood-proofing actions (State Channel, Connell outlet, and North River Road culverts drainage to Whitehorse Creek) would provide in terms of increasing minor flood stage to 6.5 feet, where the flow would be 2,400 cfs.

Another institutional option is to buy out potentially affected properties. Based on the Lincoln County Assessor's website, Smith estimated total property values of potentially affected properties at $2.5M ($2.9M with 20% markup). This would not be a cheap option, and the area of buyout may need to be larger than estimated. Hoobler noted that these values do not include structure removal. Runge thought that FEMA support may be available towards property buy outs.

Altenhofen is encouraged by the discussion with the NWS, and thinks the expenditure of $150,000 would be worthwhile to see if the NWS flood stage could be elevated to 6.5 feet. Drain expressed concerns about the NWS reducing the flood stage at a later date. FEMA funds were dispersed to landowners in the area after 2011 flooding was declared a disaster by FEMA. FEMA hazard funding, which requires a 25% local match, may be available for flood-proofing efforts.

Altenhofen made the motion to support the expenditure of $150,000 for institutional initiatives. George agreed with Altenhofen. Steinke suggested that the Program demonstrate the mitigated effects of a flood at a stage of 6.5 feet by making a release. Econopouly asked what the $150,000 would get the Program. Steinke responded that the expenditure would hopefully compel the NWS to raise the flood stage to 6.5 feet (2,400 cfs), but noted there are no guarantees. Wingfield said the expenditure of $150,000 was reasonable, and noted that a workgroup would be useful for evaluating the need for more intensive engineering initiatives. **George seconded the motion of support made by Altenhofen to expend $150,000 on flood-proofing efforts, unanimous support.** Drain requested that Kenny outline the risks to the GC that there is no guarantee the flood-proofing projects would result in an increase in flood stage. Kenny suggested that we use TC Engineering and SEH for this work; both firms previously completed work for the Program and were selected through a competitive process at that time.

Runge inquired about the status of the Kearney choke point investigation. Kenny said the ED Office has been unable to get a contractor to perform the vegetation removal, but the work is budgeted for and planned for 2012. The workgroup will focus on the North Platte choke point, but will also address the Kearney choke point.

A choke point workgroup was formed with the following WAC members: Econopouly, Taddackin, Steinke, Goltl, Shafer, and Kent Miller.

Hydroclimatic Indices*: Jerry Kenny, ED*
Kenny discussed the potential use of hydroclimatic indices for providing longer-term predictions of streamflow conditions in the South Platte, North Platte, and Central Platte basins. There are approximately one-half dozen hydroclimatic oscillations that are the driving force of our weather. Indices include the Multivariate El Niño/Southern Oscillation, the Pacific Decadal Oscillation, and the North Atlantic Oscillation, among others. The periodicity of these indices allows for their use to generate forecasts. The indices have been used to predict spring runoff based on observations in the fall with reasonable success in other river basins, although they tend to be better predictors of extreme conditions.

Kenny requested input from the WAC regarding the level of interest in evaluating correlations between available hydroclimatic indices and South Platte, North Platte, and Central Platte streamflow conditions. The flood protection section of the Colorado Water Conservation Board (CWCB) is considering pursuing a related investigation, and they have offered to expand the scope of their project to include areas of interest to the Program for a one-time cost of $25,000. The end product would be a relatively simple tool that the Program could use in the fall to predict runoff in the following spring. Separate relationships for the North Platte, South Platte, and Central Platte would be developed if needed. The predictive tools may be useful for the USFWS in determining how to manage EA releases.

The ED Office will post a white paper describing the use of hydroclimatic indices to the Program website for review by the WAC and will request feedback. The white paper was

written by John Henz of Dewberry, who has developed similar predictive relationships for other western river basins.

Altenhofen asked whether the NWS uses hydroclimatic indices for weather and streamflow predictions. Econopouly said the NWS typically limits forecasts to a period of 90 days and bases them on historical statistics, which is much shorter than what was described by Kenny. Altenhofen asked how the hydroclimatic indices predictions would complement the Natural Resources Conservation Service (NRCS) streamflow predictions. Kenny noted that NRCS forecasts are typically provided in the winter and spring, and suggested that NRCS forecasts could be used to refine the earlier hydroclimatic predictions. Altenhofen asked how the new tools would affect the current hydrologic condition assessments. The hydrologic condition assessments provided by the ED Office pertain to a much shorter time period than what would be derived from the hydroclimatic indices. Altenhofen suggested that the Program consider using the Browning Newsletter that provides quarterly predictions of weather and streamflow forecasts.

Hutchinson inquired about the total project cost. Kenny indicated the total project cost would be $50,000, with $25,000 being provided by CWCB and the remaining $25,000 provided by the Program to expand the original scope and the expenditure would require approval by the Finance Committee (FC). Altenhofen asked whether the tools would need to be periodically updated. Kenny stated that updates would not be required, and noted that the ED Office would download the necessary indices information and provide summaries of forecasted conditions, similar to the current approach for disseminating hydrologic condition information. Shafer expressed concerns over hydroclimatic index methods being applied to the High Plains region. Kenny acknowledged that the indices may be a better predictor for the North Platte and South Platte basins, but noted longer term predictions for those areas would be beneficial for the Program. Drain expressed support given the relatively low project cost. Kenny would like to provide the FC a summary of the WAC's opinion on this matter for their consideration. **Depending on the speed at which CWCB advances the project, the WAC may need to vote via email in favor or against the expenditure. Alternatively, voting will be conducted at the next WAC meeting in August.**

WAP Project Updates: *Beorn Courtney, ED Office*

Courtney provided a brief update on WAP projects that are not being discussed in more detail later in the meeting.

Wyoming expects to have 4,800 acre-feet available to the Program in 2012 from the Pathfinder Municipal Account. Wyoming will re-evaluate and confirm the yield available for lease to the Program before June 15th.

A Request for Proposal (RFP) has been issued for an independent engineering review of the pre-feasibility study completed by Olsson Associates for the J-2 Regulating Reservoir project. Proposals are due on June 7th. The engineering review will be completed before the end of the year at the latest. Runge asked ~~whether the construction date will be delayed by the engineering~~

~~review~~is the project completion date is still in line with earlier estimates. Courtney stated that construction is still expected to be completed by 2015. The operating agreement is still being negotiated, and will hopefully be finalized at the GC meeting in June. Runge noted that it will be helpful to ~~understand the project schedule~~characterize time frames for the J-2 Reregulating Reservoir and chokepoint improvements ~~at~~ for consideration at ~~the~~ future EA planning meetings such as the target flow planning workshop on May 21, 2012. Steinke noted CNPPID's support for getting a secondary engineering review of the costs and proposed project design. Olsson has provided the final pre-feasibility report to the ED Office, which is being provided to firms interested in proposing on the project. The expected budget for the RFP is $200,000.

Groundwater Recharge Project Scoring: *Beorn Courtney, ED Office and Bill Hahn, ED Office Special Advisor*

The ED Office and Hahn have been evaluating the potential score of groundwater recharge operations along with Phelps Canal, using information obtained during the feasibility study demonstration project. The feasibility study showed that groundwater recharge operations will need to be coordinated based on observed groundwater levels. The ED Office and Hahn will continue to evaluate groundwater management projects that may be able to mitigate high groundwater levels and improve the efficiency of recharge operations. Today, the ED Office is soliciting WAC input on moving forward with a fall 2012 recharge project.

The numerical model that was developed for the pre-feasibility study was calibrated using field data from the demonstration project, and the revised model is being used to predict return flows for preliminary project scoring. Hahn stated that the model has provided reasonable predictions and attributes the differences between model and observed levels to pumping conditions being imported from the COHYST model, and the cell size used in the model. The model is better a predictor of water levels over a larger area than at a particular point such as a monitoring well. While the timing and volume of return flows could be evaluated using the Alluvial Water Accounting System (AWAS) model, the numerical model also provides water level information that will be critical for evaluating operational thresholds to mitigate high groundwater levels.

The preliminary scoring analysis was based on recharge operations being conducted during the entire non-irrigation season from October through April. The recharged volumes were based on the availability of excesses to target flows, as determined using the OpStudy hydrology dataset at Grand Island. Excesses are available more often in December and January than other non-irrigation months. Hahn evaluated whether recharge operations could be timed to maximize accretions at times of shortages to excess flows. The analysis shows that water recharged in January and February is more likely to accrue at times with shortages, but the "efficiency" only ranges from about 30% to 45% across all non-irrigation months. Drain suggested that water be recharged whenever it is available since the range of monthly efficiency values is not very large. Courtney noted that operations may be simplified by starting recharge in October so that an ice cap could be built up.

Courtney reviewed scoring questions that have been identified by the ED Office. The preliminary scoring analyses have been based on the methods used for the J-2 Regulating Reservoir, although at a monthly time-step instead of daily, resulting in a score of 1,840 acre-feet at Grand Island prior to any discounting. During the scoring of the J-2 Regulating Reservoir, USFWS indicated that score discounts would be required for water projects that do not benefit the entire Overton to Duncan reach. If recharge terminates at the Phelps Canal mile 9.7, then the return flows accrue approximately 1.5 miles downstream of Overton, on average. Using the Overton to Grand Island reach (downstream extent of the WMC Loss Model) results in about a 2% score reduction, or about 1,800 acre-feet on average. Extending recharge east will result in further downstream returns but prorating to Duncan would result in a lower percentage score reduction. It may be possible to limit score reductions by having Tri-Basin NRD use the return flows that accrue below Overton for their offset requirements as opposed to WAP projects.

The ED Office completed a preliminary evaluation of the effects associated with diverting excess flows to groundwater recharge on the score of the J-2 project. Preferentially diverting flows to groundwater recharge may reduce the J-2 reservoir score by about 2% but an optimized scenario still needs to be modeled. As more WAP projects are implemented, it will be increasing difficult to assign scores to individual projects. The ED Office hopes that COHYST 2010 will allow for the scoring of multiple projects.

Drain does not believe scoring decisions are a responsibility of the WAC, and suggested that a sub-committee of the GC be formed to address scoring questions identified by the ED Office. Altenhofen noted that water leasing has similar scoring questions. **The ED Office will request that the GC form a scoring sub-committee at their June meeting.**

Steinke said that it would be easier for CNPPID to support recharge projects if groundwater management projects were also in place to provide mitigation of high groundwater levels if necessary. Monitoring wells installed for the demonstration project could be used to monitor water levels. Wingfield asked about objectives for 2012 and Kenny said that sufficient background information has been obtained through the feasibility study and demonstration project, and it is time to start reducing shortages to target flows. If recharge operations are extended from the Phelps Canal 9.7 mile return to the 13.2 mile return, then additional monitoring wells may be required and Hahn may need to expand the area covered by the numerical model.

Steinke noted that it will take time to obtain the necessary permanent permits from NDNR, and expects that a one-year temporary permit will be required for 2012 recharge operations. Woodward said that NDNR is working on implementing an expedited permitting process for recharge projects that will hopefully be completed before fall 2012. Drain said that CNPPID's concerns related to recharge could probably be addressed in the operating contract with the Program. Kenny asked if diversions to recharge would be limited to excesses to target flows, or would include EA releases. Drain believes the legal issues that encumbered the use of EA releases for recharge have been addressed, and believes the end use of EA releases will be as

directed by the EA Manager. Leased water from Pathfinder Reservoir could also be used for recharge since it can be added to the EA.

Woodward stated that many canal companies are interested in conducting recharge operations next fall as part of their depletion plan offsets. Altenhofen would like to continue discussions about the Program leasing surplus accretions from NDNR. Goltl said that NDNR is still summarizing 2011 recharge operations. Woodward viewed a Draft 2011 recharge summary at a Platte Basin Habitat Enhancement Project (PBHEP) meeting last week. **Woodward will send a copy of the Draft summary to Kenny, but asked that the summary not be provided to the entire WAC until finalized by NDNR.** Goltl believes approximately 80,000 acre-feet and 120,000 acre-feet were recharged in the spring and fall, respectively, but river accretions values are still being refined.

The WAC supports the development of an agreement with CNPPID for 2012 recharge operations and supports extending recharge to mile 13.2. CNPPID will file a temporary recharge permit application with NDNR. The ED Office will work with Hahn to determine if additional monitoring wells would be required and Hahn will evaluate whether the model area needs to be expanded to the east.

Surplus Land and Water Leasing: *Beorn Courtney and Matt Welsh, ED Office*
Courtney explained that the 2012 start date for Nebraska Water Leasing identified in the 2009 WAP Update was postponed until 2016 during the 2012 budget approval to ensure adequate funding for the J-2 Regulating Reservoir. While the water leasing implementation date has been postponed, the ED Office has continued to work with the Water Leasing Workgroup to develop analysis methodologies. The methods that have been developed to date also apply to situations where the Program must decide whether water associated with historically irrigated surplus lands should be reserved for WAP projects. The GC is requesting input from the WAC on one surplus land situation, which will be presented today.

Members of the Land Advisory Committee (LAC) and WAC have discussed the development of a “decision tree” that could be used to expedite the evaluation of water associated with surplus land sales and other land transactions. Courtney explained the decision tree process and associated WAC hydrological review. A critical step of the decision tree requires input from the scoring sub-committee that will be requested at the June GC meeting, so no recommendation on the decision tree process was requested from the WAC at this time.

Welsh provided an overview of the surplus land project at the Broadfoot-Newark property southeast of Kearney. The surplus land includes 117 acres that were historically irrigated using groundwater. The PBHEP offset calculator indicates that if the parcel was retired from irrigation, then the average annual accretion to the Platte River would be 29.3 acre-feet/year, based on the 50-year depletion percentages from the COHYST model. If Central Platte NRD were interested in acquiring the water for their Water Bank, then they would base the transaction on the accretion value from the PBHEP calculator.

In the process of evaluating water leasing projects that involve future groundwater irrigation, the Water Leasing Workgroup requested that the ED Office complete continuous long-term analyses that showed the accretion to the river at an annual time step. The accretion from the surplus land dry-up would increase over time and yield accrues downstream of Kearney so input on how to score the project is needed from the scoring sub-committee. **The scoring questions will be addressed with the GC scoring sub-committee.**

The surplus land was appraised in April 2012, and the land value is $2,400 more per acre when water is included in the sale. Based on the yield of 0.25 acre-feet/acre (29.3 acre-feet/year ÷ 117 acres) and a price difference of $2,400, reserving the water for WAP projects would cost approximately $9,600/acre-foot, which does not include any price increases for score discounts.

Drain said the water should be sold with the surplus land, and noted that water could be purchased at another location at a later time if needed. Drain said that the GC has intentionally postponed other WAP projects with much lower unit costs. Runge, George, and Hutchinson feel the GC should consider retaining the water from the surplus since it would not require any additional expenditures. George noted that the Program hasn't had the opportunity to buy other water, and feels that reserving this water would start accretions to the river now while other projects are pursued. George is not comfortable making a recommendation to sell the water with the surplus land. Kenny noted that water is available to be purchased elsewhere, so that money generated by the sale of the water near Minden could be used to purchase water closer to the upstream end of the associated habitat reach. The Program recently purchased irrigated land upstream near Elm Creek as part of a habitat acquisition. **The WAC recommended the ED Office provide the economic summary to the GC to assist with their decision.**

Federal Depletions Plan Update*: Matt Rabbe, USFWS*
Rabbe reviewed the federal depletions plan packet that had been provided to the WAC prior to the meeting. Hoobler said the first Wyoming project with a federal nexus will likely be initiated in 2012.

Nebraska Depletion Plan Update*: Pat Goltl, NDNR*
Goltl provided a summary of the two documents that were provided to the WAC prior to the meeting. The forecast of net effects assumes that the J-2 Regulating Reservoir will be online in 2014. NDNR is still developing robust accounting procedures that will be finalized in the next couple of months. Altenhofen inquired whether the Program would be able to lease any of the accretions in excess of post-1997 depletions. Woodward noted that Nebraska also needs to achieve a fully-appropriated status, so there are not as many excesses as suggested in the NDNR depletion plan reports.

Wyoming Depletion Plan Update*: Matt Hoobler, Wyoming State Engineer's Office*
Hoobler reviewed the 2011 Wyoming Depletions Report that was provided to the WAC prior to the meeting. Hoobler discussed municipal water sales for oil and gas development. Temporary

Water Use Agreements, which are essentially dry-up agreements, have been used to ensure no expansion of water use. Municipalities have also been selling water for oil and gas operations ~~from fire hydrants~~. Hoobler discussed laws against transporting water across state lines. The municipalities of Elk Mountain and Saratoga have switched from surface water supplies to non-hydrologically connected groundwater. The supply conversion now produces an accretion to the river.

Colorado Depletion Plan Update*: Suzanne Sellers, CWCB & Jon Altenhofen, Northern Colorado Water*

Sellers reviewed the North Platte Annual Accounting that was provided to the WAC prior to the meeting. The new industrial use water right for 108 acre-feet per year is scheduled to be dismissed. Altenhofen reviewed the Colorado Plan for Future Depletions for the South Platte basin that was provided during the meeting. Population growth has average 2% per year; the original estimate was 1.5% per year. No changes to the calculation assumptions are proposed. Runge asked whether Colorado would provide a summary of Tamarack I operations. Altenhofen offered to provide a separate summary of Tamarack I accretions along with the 2012 summary next year. The trial for the Tamarack water rights case is schedule for July 2012.

Additional Business*: Cory Steinke, WAC Chair*

The draft 2012 meeting schedule was discussed. **The next WAC meeting is scheduled for August 14, 2012, from 9:30 am – 3 pm (Mountain Time) at the Lake McConaughy Visitors Center.** No changes were requested.

Action Items

General WAC

- Vote regarding support of expenditure of $25,000 for hydroclimatic indices investigation via email, if needed.
- CNPPID will file a temporary recharge permit application with NDNR.

ED Office

- Attempt to coordinate the timing of tillage operations at the North Platte choke point with the USFWS so that EA releases may be timed to aid the phragmites removal effort.
- Post hydroclimatic indices white paper to the Program website for review by the WAC.
- Request the formation of a scoring sub-committee at the June GC meeting.
- Coordinate with Hahn to determine if additional modeling and monitoring wells would be required to expand Phelps Canal recharge operations to the return at mile 13.2.
- Provide the surplus land economic summary to the LAC and GC to assist with their decision of whether to reserve the water for WAP projects.