



PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM
Water Advisory Committee Meeting Minutes
Lake McConaughy Visitors Center – Ogallala, Ne
February 7, 2012

Meeting Attendees

Water Advisory Committee (WAC)

State of Wyoming

Mike Besson – Member

Matt Hoobler – Alternate

State of Colorado

Suzanne Sellers - Member (call-in)

State of Nebraska

Doug Hallum – Member

Pat Goltl – Alternate

Matt Alexander

U.S. Fish and Wildlife Service (Service)

Tom Econopouly – Member

Jeff Runge – Alternate

Mike George

Bureau of Reclamation (BOR)

Mahonri Williams – Member (call-in)

Brock Merrill – Alternate

Downstream Water Users

Cory Steinke – Member (WAC Chair)

Duane Woodward – Member

Jeff Shafer – Member

Mike Drain – Alternate

Tyler Thulin

Colorado Water Users

Jon Altenhofen – Member

Environmental Groups

Bill Taddicken – Member (call-in)

Duane Hovorka – Alternate (call-in)

Larry Hutchinson – Alternate (call-in)

Executive Director’s Office (EDO)

Jerry Kenny, Executive Director (ED)

Beorn Courtney

Sira Sartori

Matthew Welsh

Contractors

Bill Hahn – Hahn Water Resources

Matt McConville – HDR

Pat Engelbert – HDR

Dale Schlautman – EA Engineering (call-in)

Mike Applegate – Applegate Group, Inc.



48 **Welcome and Administrative:** *Cory Steinke, WAC Chair*
49 Introductions were made. There were no agenda modifications. Courtney and Runge briefly
50 discussed the Draft October WAC Minutes redlines. **The October WAC Minutes were**
51 **approved with the modifications in the current version of the WAC minutes, as discussed**
52 **during the meeting. Cory Steinke was re-elected as the WAC Chair for 2012.**
53

54 **J2 Reregulating Reservoir Project Update:** *Sira Sartori & Beorn Courtney, ED Office*
55 Sartori presented a PowerPoint on the J2 Reregulating Reservoir project including information
56 regarding the project status, reservoir location, reservoir design and physical layout, project
57 sponsors, recommended design by the J2 Reregulating Reservoir Workgroup, reservoir
58 operations and assumptions, probable cost estimates, the score towards the First Increment
59 Milestone and the next steps in the project. Courtney noted that this presentation is a status
60 update for the WAC and there is no action item associated with the presentation. The Workgroup
61 has reviewed detailed information about the project throughout the feasibility phase which is
62 nearing completion. The Workgroup has recommended a project score and the purpose of
63 today's presentation is to familiarize all WAC members with the project concept and score that
64 are moving forward.
65

66 The Workgroup recommended the reservoir design alternative, referred to as Option 5, to the
67 Governance Committee (GC) in 2011. The Workgroup also recommended the Phelps Canal
68 capacity upgrade to 1,675 cfs. The GC is currently using this design option for negotiations in
69 the Three-Party Agreement between the Program, NDNR and CNPPID.
70

71 Option 5, the recommended design by the Workgroup, has a beneficial storage capacity of
72 13,959 acre-feet (AF) and the lowest capital cost (\$44 M) and lowest 50-year life cycle cost of
73 the alternatives evaluated by Olsson Associates in the feasibility study. The feasibility report will
74 be finalized by Olsson in February 2012 and the final design of the project will go to bid this
75 year.
76

77 The intended uses of the reservoir are target flow operations toward the Program/NDNR
78 objectives, Short Duration High Flow releases of 2,000 cfs (or other flow releases as determined
79 by the Fish and Wildlife Service) for the Program, CNPPID flow regulation and CNPPID
80 hydrocycling mitigation. The ED Office scored the project using the model previously approved
81 by the GC and updated the model to reflect CNPPID's use of the reservoir for flow regulation.
82 The Workgroup recommended a project score of 40,800 AF based on this analysis, of which
83 75% (30,600 AF) will be credited to the Program and 25% will be credited to the NDNR under
84 the current draft of the sponsorship agreement. The Workgroup recommended to the GC that the
85 project should not be penalized for hydrocycling mitigation because likely impacts can be
86 reduced or eliminated during actual operations and hydrocycling mitigation benefits the
87 Program. The next major steps in the project include finalization of the Three-Party Agreement,
88 final design, permitting and land acquisition
89



90 Altenhofen asked whether the Army Corps of Engineers permitting process will be complicated
91 at the proposed project site. Kenny expects the off-channel location of the site to reduce some
92 concerns in the permitting process, but there are likely issues associated with jurisdictional
93 wetlands and it being an area of historical significance that will have to be dealt with. The
94 Corps is aware of the proposed project. Altenhofen asked whether the reservoir site is out of the
95 floodplain. Steinke and Kenny noted that Plum Creek has flooded in the past, but berms will be
96 constructed to minimize the potential for flooding.

97
98 Hoobler asked about the grave site at the reservoir location. Kenny responded that there are two
99 known grave sites from the Oregon Trail. Kenny has had conversations with the Phelps County
100 Historical Society and Oregon-California Trail Association regarding the cemetery, with the plan
101 being to avoid it in construction and not relocate it. Excavation in the reservoir area will proceed
102 cautiously to recover and preserve historical artifacts to the extent possible, and the Plum Creek
103 massacre site will be completely avoided. The Program will likely recognize the history of the
104 site in some way at the reservoir, such as with an information kiosk or information at a picnic
105 area. Kenny mentioned there is currently one landowner willing to sell to the Program and other
106 landowners are willing to talk with the Program. The project will require all new land
107 acquisitions.

108
109 Woodward asked Steinke how the reservoir will operate for flow regulation and Steinke said the
110 top 3 to 5 feet of the reservoir will fluctuate. The storage in Area 2 can be returned back to the
111 Phelps Canal via gravity feed. Besson noted that CNPPID's use of the reservoir for flow
112 regulation benefits hydrocycling mitigation and thought the score could even be higher (up to
113 41,886 AF) for the Program/NDNR if there was no score penalty. Drain said that although the
114 flow regulation helps CNPPID to run the hydropower at peak efficiency, he didn't think this
115 necessarily was a benefit to the species. Drain also mentioned the flow attenuation plan, which is
116 part of CNPPID's FERC license, will be suspended for reservoir operations. Altenhofen
117 commented the score is based on 1947 through 1994 OPStudy hydrology and the hydrology in
118 the future could be different. He suggested the Program should reevaluate a bonus score for
119 Short Duration High Flows in the future as it is an important use of the reservoir. Drain said this
120 would be a GC discussion and Altenhofen said it is likely the GC would refer it to the WAC for a
121 recommendation.

122
123 **Groundwater Recharge Feasibility:** *Beorn Courtney, ED Office and Bill Hahn, EDO Special*
124 *Advisor*

125 Bill Hahn, ED Office Special Advisor, gave a presentation on the groundwater recharge
126 feasibility study. Courtney noted that there is no action item for the WAC but suggested the
127 group should have a discussion on the next steps for a recharge project. Courtney commented
128 that groundwater recharge and groundwater management could be projects that are teamed
129 together as Hahn will describe in the presentation. Hahn's presentation included information
130 regarding the background on the integrated project on the Phelps Canal, the feasibility
131 investigation status, the feasibility study interim results and a discussion on advancing
132 groundwater recharge and groundwater management projects.



133 The goal of the demonstration project was to test recharge feasibility and winter operations. A
134 significant amount of work went into the project including 17 bore holes, test pit excavation,
135 infiltration testing, 6 monitoring wells, field measurement and instrumentation (evaluation of
136 drains and wells), soil moisture sensors and piezometers. Hahn said the instrumentation and
137 monitoring began in April 2011 and water was diverted beginning October 2011 to test the
138 recharge feasibility of the Phelps County Canal and a 0.5 acre recharge basin adjacent to the
139 canal. The demonstration project lasted 99 days and approximately 5,568 AF were recharged in
140 the canal and basin. Infiltration rates of 1.5 feet/day and 0.3 feet/day for canal and basin
141 recharge, respectively, were observed. Water diverted into the Phelps County Canal was
142 successfully run under the icecap.
143

144 Hahn modeled the groundwater response from recharge, such as how far the groundwater mound
145 would spread. The model is based on a monthly stress period and some calibration of the model
146 was completed using field data. Hahn explained the observed water level elevations for several
147 monitoring wells comparing the model forecast with the observed water levels. There is
148 anecdotal evidence from producers of elevated groundwater levels in the area and evidence the
149 levels were high prior to beginning recharge in some cases. Based on USGS monitoring well
150 data in the demonstration project area, there is a long-term trend of increasing groundwater
151 levels. Some of the well data showed higher groundwater levels than in the past 10 years and in
152 some cases, higher than the historical record of the data dating back to the 1940s and 1950s.
153 Hahn showed some site-specific trends on fields where producers reported higher groundwater
154 levels. It will be important to stay cognizant of high groundwater levels moving forward with
155 recharge projects.
156

157 EA Engineering has not yet analyzed all the data from the demonstration project; however, the
158 tentative conclusions are that recharge is feasible at this location, recharge is feasible using a
159 combination of canal and basin or canal only recharge, operations for basin sites are likely
160 limited to the near-term as producers may still want to farm properties, winter operations appear
161 to be successful, the pre-existing water levels and trends may influence opportunities for timing
162 of recharge and the project may benefit from groundwater management options. The recharge
163 through the canal performed better than expected. Hahn anticipated about 36 cfs diverted for
164 recharge and during actual operations, 30 cfs was diverted into the canal and 0.8 cfs was diverted
165 into the basin.
166

167 Altenhofen asked why the test pits had higher infiltration rates than the demonstration project pit.
168 Hahn noted the 10-foot pits exhibited infiltration rates of about 0.3 feet/day as opposed to the 0.9
169 feet/day in the test pits. Schlautman said this could be due to lower water temperatures during the
170 demonstration project. Hallum questioned whether the temperature of water diverted into the
171 demonstration project was monitored. Schlautman said the water temperature was monitored and
172 EA Engineering plotted the infiltration and temperatures and there appears to be a relationship
173 between water temperature and infiltration rates. Hallum noted that the peak density of water is
174 at about 4°C. Kenny commented that it is not a density effect, but rather the viscosity of water is



175 the important factor related to temperature, which impacts the infiltration rates. Drain
176 commented it has been a warm winter.

177
178 Kenny discussed some reasons why groundwater levels may be higher in the area, regardless of
179 the recharge project, including high river flows and rainy summers the past few years. There has
180 also been less groundwater pumping by producers. Courtney said the well locations are
181 important in determining how connected the wells are to the river. She mentioned the USGS
182 monitoring well levels close to the river are very connected to the river, even showing responses
183 to hydrocycling. Besson thought maybe the Program could pump groundwater to the river for
184 credit and use a recharge project to build up the groundwater mound, using the aquifer as
185 storage.

186
187 Altenhofen asked if the canal recharge could be extended down the Phelps Canal and Steinke
188 said he didn't think it would be an issue to run water because the winter operations appeared to
189 be successful during the demonstration project. Steinke said there is high groundwater lower on
190 the canal so this would be a limitation. During the demonstration project, water was run in the
191 Phelps Canal slightly below to top of the bankfull height without damage to CNPPID's
192 infrastructure.

193
194 Hahn said the Program will tentatively monitor the demonstration project monitoring well levels
195 through the year, although the actual basin will be removed per the agreement with the
196 landowner. Hahn thought there may need to be some modifications in a future full scale recharge
197 project including drain improvements and moving the project to an area with lower groundwater
198 levels. Hahn discussed the groundwater terrace in the area. Hallum noted that drain maintenance
199 activities may be having an effect on observed groundwater levels. Runge noted that the
200 Program could recharge in drought conditions or determine a threshold for when recharge would
201 not increase groundwater levels to the point where there are negative effects for intervening
202 landowners. Kenny also noted Pathfinder water could be recharged during times when there are
203 no excesses.

204
205 The WAC discussed how to move forward with recharge and groundwater management projects.
206 Courtney stated to the group that the groundwater recharge investigation has been ongoing for
207 about 2 years now, approaching completion of the feasibility study, and the ED Office needs
208 direction from the WAC on the next steps. The work has mainly focused on groundwater
209 recharge but the Program could combine recharge with groundwater management, another Water
210 Action Plan Project. Hahn explained that the Program was contacted by Tri-Basin NRD about a
211 producer interested in leasing water to the program. The landowner is willing to consider
212 working with the Program to pump groundwater from his property and immediately discharge
213 water to the river or a drain for Program credit in order to dewater his field. This is consistent
214 with the groundwater management in the Program Document. The property has a high
215 groundwater table and salt buildup that impacts the productivity of the land. Altenhofen
216 remarked the Program must look at the net effect to the river since well pumping can create
217 depletions. Hahn went on to explain two potential pumping schedules and shared graphs of the



218 net impact to the river over time from an integrated project for the management (dewatering)
219 project and groundwater recharge project. In general, marrying this groundwater management
220 project with recharge would allow the recharge to cover any net well depletions.
221

222 Hahn said the SDF is about 72 days at the property being considered, and Altenhofen expressed
223 concern about how close the well is to the river. He said in Colorado, augmentation wells have
224 SDFs of 300-400 days. Hahn responded that this could be done but it depends on where the
225 Program has access to wells. Runge suggested the Program could pump the dewatering wells
226 during times of known shortages for Program credit. Courtney noted the pumping plan for the
227 potential project is different because the landowner would like to dewater his property so the
228 Program might not be able to optimize the pumping schedule for the score, although this could
229 be evaluated in the future. Tri-Basin will likely help this landowner dewater his property if the
230 Program is not involved. Altenhofen asked if there would be any permitting issues with using an
231 irrigation well for dewatering; Hahn said there will be new dewatering wells drilled at this site.
232 Besson asked if the landowner would be willing to pay for some of the pumping costs but the
233 Program has not discussed the specifics with the landowner yet.
234

235 Drain said long-term depletions from the dewatering wells could be incorporated in the NRD's
236 Integrated Management Plan (IMP). There was a discussion amongst the group as to whether the
237 Program should place the long-term burden of offsetting lagged well depletions on the NRD.
238 Woodward said if the NRD helps the landowner with the project, they will need to balance out
239 the depletions in their IMP. Altenhofen asked if the consumptive use on the property will
240 increase if the land is dewatered. Courtney said the consumptive use is not anticipated to change
241 because there is currently a crop on the property, it is just low quality. Courtney also indicated
242 that there is a limitation on how many groundwater management projects that could be mitigated
243 with recharge to maintain a net benefit each month. Besson thought the WAC should evaluate
244 the project score, cost implications and whether this project would create problems for other
245 landowners or issues with seeps.
246

247 Altenhofen remarked there could be opportunities for the Program to team with the NDNR and
248 NRDs for recharge credit. Specifically, the Program could purchase water from the NDNR in
249 excess of what is needed for the Nebraska Depletions Plan. Hallum said the NDNR recharged
250 about 77,000 AF last year and about 30,000 acre-feet seeped and about 5,000 AF will return to
251 the river during the First Increment. Altenhofen requested to see NDNR's analysis and stated
252 that in Colorado, the going rate for recharge credits is about \$40 per acre-foot. Hallum was
253 unsure whether the NDNR would have excess water to lease to the Program. Kenny also noted
254 that some of the NDNR canal recharge does not benefit the entire habitat reach so there may be
255 some discount in the recharge credit. He thought teaming with the NDNR and NRDs is a good
256 concept to discuss in the future. Altenhofen asked what portion of recharge water typically
257 returns at times with shortages to target flows. Courtney responded approximately 50% at the
258 Phelps site under the pre-feasibility study (follow-up after the meeting: the pre-feasibility study
259 shows approximately 46% of the water diverted to recharge would return to the river near the



260 Phelps project site and approximately 39% would result at Grand Island during times of
261 shortage).

262
263 Hahn went on to discuss the potential Gothenburg Canal recharge site. There is a tentative
264 monitoring network layout and Hahn reviewed the project concept from the pre-feasibility study.
265 This recharge location will also have a high groundwater table. Woodward said the
266 NDNR/NRDs recharged in this canal last year and he was unaware of any high groundwater
267 complaints from landowners, although the canal recharge was only for one month. Courtney
268 asked how much more monitoring the Program should do if other entities are already
269 successfully recharging. Drain commented that CNPPID will want more monitoring of recharge
270 projects in their system so they don't encounter any issues with landowners, although this may
271 not be the case for smaller ditches. Kenny noted that landowners were probably more tolerant of
272 the NDNR recharging last year since it was used for flood protection. Courtney said the Program
273 could try to team with the NDNR for monitoring and she asked the group when they thought
274 would be a good time to begin discussing project sponsorship. Runge said that if recharge and
275 groundwater management projects provide large volumes of water to the Program or if the
276 projects are cheaper options than other Water Action Plan projects, it would be worth it for the
277 Program to participate. He suggested coming up with a recharge plan or threshold that would
278 allow the Program to decide if the conditions were favorable and comfortable for recharging.
279 Altenhofen said he would support combined work on monitoring with the NDNR or NRDs.

280
281 Hahn initiated discussion on the Overton high water table area project and identified this project
282 as relatively easy to implement with minimal infrastructure. The project may require offsets
283 using recharge from the Dawson County Canal. Besson questioned whether the Program should
284 worry about long-term depletions since a high groundwater table could be considered "excesses"
285 if the groundwater levels are increasing. He said as long as a water level threshold is developed,
286 pumping could occur down to the threshold and then the threshold could be maintained over
287 time. Courtney asked if this was a similar concept to NDNR's Dry Creek project. Hallum said
288 the project concept is not exactly the same. The Dry Creek wells are relatively close to North
289 Dry Creek. Their value is that they can be turned on to immediately meet shortages in the river
290 and there is uncertainty of depletions between about 80% and 30% depletion in 50 years,
291 affecting the calculated near-term benefits and timing of subsequent well depletions. Besson also
292 suggested the Program could pump groundwater to a certain level and then recharge in a
293 different location where the groundwater is lower to provide offsets, if needed.

294
295 After lunch, Courtney brought the conversation back to the next steps in defining a recharge or
296 groundwater management project. Besson said he would like more information on costs and
297 yield. Steinke said his biggest concern with the proposed dewatering project is that it may give
298 landowners the idea that the Program is dewatering because of impacts from recharge, which is
299 not the case. Woodward feels comfortable moving forward with recharge but would like
300 additional monitoring on groundwater management. Woodward noted that landowners located
301 further from the drains tend to have more high groundwater issues, and suggested that
302 dewatering wells located in those areas would benefit more landowners. Runge brought up the



303 fact that the Program should be careful not to dry up existing pre-1997 wetlands in a dewatering
304 project, unless the Program can show the impacts were mitigated. Courtney suggested the
305 Program could team with CPNRD to monitor the Gothenburg Canal. Altenhofen supported
306 teaming with landowners such as the contemplated dewatering site, but only if there is a clear
307 benefit to the Program and Besson agreed. In general, the WAC supported moving forward with
308 recharge and talking a closer evaluation of groundwater management. **The ED Office will**
309 **continue investigating the cost and potential project score associated with a Phelps**
310 **recharge project, and will work with Tri-Basin NRD to gain more cost and yield estimates**
311 **associated with the potential groundwater management project.**
312

313 **Choke Point Update:** *Jerry Kenny, ED Office*

314 Kenny gave a brief update on the North Platte and Kearney gage chokepoints and described the
315 National Weather Service flood stages and capacities at these locations. Kenny showed graphs
316 depicting the shifted flood stage capacity, rating curve capacity and the discharge from 2009-
317 2012 for each chokepoint location.
318

319 The North Platte chokepoint capacity increased after the high flows in 2011 but is on the decline.
320 The capacity appears to be cyclic and tied to the hydrology. Floods typically reset the flood stage
321 but the addition of phragmites, which has a different type of vegetative structure than the native
322 species, may be preventing the flood stage from resetting at this location after the high flows.
323 Additional vegetation removal is ongoing and previous efforts have focused on clearing and
324 chopping. Tilling and deep ripping operations have the potential to disrupt the root structure,
325 and are planned for the future. Kenny told the group there will be a meeting with the Silver
326 Jackets at the end of this month to see how the Program can coordinate with this group regarding
327 flooding issues. George asked if the US Army Corps of Engineers has looked at purchasing the
328 area in the floodplain instead of structural solutions. Kenny said he did not believe so but this
329 option should be examined.
330

331 The Platte River near Kearney gage flood stage has stayed the same since the high flows in 2011.
332 The Program will also be doing some vegetative clearing and tillage downstream of the Kearney
333 Bridge. Econopouly asked about the idea of installing culverts underneath driveways in the
334 North Platte area as discussed at the October WAC meeting. Kenny said this has been discussed
335 this with the City of North Platte and it doesn't seem like a fruitful avenue. Kenny said there are
336 some other flow alternatives still under discussion with the City.
337

338 **FY2012 Water Plan Budget Update:** *Jerry Kenny, ED Office*

339 Kenny described the updated budget information from the last WAC meeting discussion. The
340 GC approved the budget at the December 2011 meeting. The Program budget for the First
341 Increment has been more evenly distributed throughout the years of the First Increment to level
342 out cash flow, especially for funding the J2 Reregulating Reservoir. Kenny went over the water
343 plan budget comparison from the November 2011 Finance Committee meeting versus the
344 approved budget by the GC at the December 2011 meeting. The total 2012 budget approved by



345 the GC is \$12,350,000. The WP4 line item was broken down into actual Water Action Plan
346 projects to better define the 2012 budget.

347
348 **Additional Business:** *Cory Steinke, WAC Chair*

349 The draft 2012 meeting schedule was discussed. **The next WAC meeting is scheduled for May**
350 **8, 2012, from 9:30 am – 3 pm (Mountain Time) at the Lake McConaughy Visitors Center.**
351 Depletions Plan updates will be at the next meeting so the ED Office will be contacting each
352 group to present their reports.

353
354 Altenhofen asked about the ED Office’s work on Water Management Incentives and Water
355 Leasing. Courtney said the ED Office has been working on the evaluation of an example project
356 with Shafer (NPPD) and Woodward (CPNRD). Courtney said the Workgroup is meeting after
357 the WAC meeting to further discuss these Water Action Plan projects. In addition, Kenny said
358 the ED Office has been cooperatively working with PBHEP, which was requested by the
359 Workgroup.

360
361 **Action Items**

362 General WAC

- 363
 - No action items.

364

365 ED Office

- 366
 - The ED Office will continue investigating the cost and potential project score associated
367 with a Phelps recharge project, and will work with Tri-Basin NRD to gain more cost and
368 yield estimates associated with the potential groundwater management project.

369