



**TO:** GOVERNANCE COMMITTEE  
**FROM:** SCORING SUBCOMMITTEE  
**SUBJECT:** SCORE RECOMMENDATION FOR THE COOK TRACT RECAPTURE WELL PROJECT, IN COMBINATION WITH THE PHELPS CTY CANAL RECHARGE PROJECT  
**DATE:** AUGUST 30, 2016

### **Introduction**

In May 2016, the Scoring Subcommittee<sup>1</sup> had a conference call to discuss the Cook tract recapture well score. The Executive Director's Office (EDO) prepared the technical analysis to determine the project's score towards meeting the First Increment water objective of reducing shortages to U.S. Fish and Wildlife (USFWS) Service target flows by an average of 130,000 to 150,000 acre-feet per year (AFY)<sup>2</sup>. This memorandum provides a summary of the score analysis and the Scoring Subcommittee's recommendation to the Governance Committee (GC).

### **Background**

#### *Project Overview*

The Program constructed a well on the Cook tract to recapture a portion of return flow accretions from recharge operations in the Phelps County Canal groundwater recharge project<sup>3</sup>. The Cook tract recapture well project increases the Program's Phelps recharge project score by routing recharged water to the river more quickly through pumping operations. The pumped water is discharged into the North Phelps County Drain Ditch and discharges to the Platte River above Overton, NE. The well is permitted for instream/environmental uses through the Tri-Basin Natural Resources District, permit #TBDW-1500.

The Cook tract recapture well operates from March through November during shortages to USFWS target flows only, to provide score credit for the Program. The maximum rate of pumping is 800 gallons per minute (gpm), based on a pumping test of the well and the installed pump size. The Program pumps less than its portion of the Phelps recharge project; therefore, there is always a net accretion at the river<sup>4</sup>. There is no impact to other recharge project sponsors.

#### *Score Analysis*

The EDO used the general score analysis methods accepted by the GC in 2010. The key assumptions are shown in **Table 1**.

<sup>1</sup> The Governance Committee (GC) formed an ad-hoc Scoring Subcommittee to advance discussions related to scoring of proposed Water Action Plan Projects (WAP) for the Platte River Recovery Implementation Program (Program) in 2009.

<sup>2</sup> The three initial state projects are 80,000 AFY of this objective and WAP projects are 50,000 AFY to 70,000 AFY of this objective.

<sup>3</sup> The Phelps recharge project has been active since 2011 and operates in the non-irrigation season.

<sup>4</sup> The Program's portion of the Phelps recharge project is 75% of deliveries, per the draft permanent agreement with the Central Nebraska Public Power and Irrigation District.

**Table 1. Key scoring assumptions.**

Component	Data
Hydrology	OpStudy Adjusted Present Condition with Three State Projects (without pulse flows)
Analysis Period	1947-1994
Analysis Time Step (A)	Monthly
Excesses/Shortages Calculation	@ Grand Island
Target Flows	Appendix A-5, Column 8 (in the Water Plan Reference Materials)
Routing (B)	WMC Loss Model
Accretion Modeling Method (C)	Numerical model

**Notes:**

- (A) The Phelps recharge project was modeled on a daily basis for the volume of water delivered into the canal for recharge operations. The scoring of project yields against USFWS shortages is completed on a monthly basis for the Phelps recharge project and the Cook recapture well project.
- (B) The WMC Loss Model was updated in the Water Management Study Phase I (2008) by Boyle Engineering Corporation. It was originally developed by the Program's Water Management Committee, as required by milestone W14-1 of the Cooperative Agreement.
- (C) The Program, in association with Hahn Water Resources, LLC, developed a numerical model for the Phelps County Canal Groundwater Recharge project. This method was not included in the 2010 GC score model discussion, but was accepted in the Phelps recharge score model in 2013. This model was used to lag the recharge accretions from recharge operations and estimate the net benefit at the river with the addition of the Cook tract recapture well.

The EDO and Hahn Water Resources, LLC (EDO Special Advisor) added the projected well pumping schedule into the Phelps groundwater recharge numerical model to determine the net increase in the score from the addition of the Cook tract recapture well operation. The well was pumped during monthly shortages to USFWS target flows from March through November in the 48-year OpStudy simulation period. The net accretions at the river were then routed downstream to Grand Island using the WMC Loss Model factors to provide a score of the project at Grand Island. There are always net accretions at the river from the combined recharge and pumping operations (no depletions are created as pumping is less than recharge). The operation of the well and net accretions at the river will be monitored during actual operations by the Program.

**Results & Recommendation**

The Cook tract recapture well score was calculated as 160 AFY. There were no alternatives evaluated, as the project is dependent on the Phelps recharge project only. **The Scoring Subcommittee recommends an additional 160 AFY be added to the Phelps County Canal groundwater recharge project score to represent the Cook tract recapture well. The recommended combined project score is 2,860 AFY<sup>5</sup>.** The Scoring Subcommittee came to a unanimous agreement to recommend this score to the GC during the May 31, 2016 conference call. The meeting minutes from the conference call are enclosed for reference. There was

<sup>5</sup> The Phelps County Canal groundwater recharge project score was 1,800 AFY for 50% of the deliveries into the canal, as accepted by the GC. However, the draft permanent agreement with the Central Nebraska Public Power and Irrigation District is for 75% of the deliveries into the canal; therefore, the score was increased proportionally to 2,700 AFY.



minimal discussion on the score analysis and score recommendation on the conference call, as the group was in agreement.

Note that the Scoring Subcommittee agreed to an additional 160 AFY to be added to the Phelps County Canal groundwater recharge score. The original recharge score accepted by the GC was 1,800 AFY, based on a 50% interest in the project. Since that time, the Program and the Central Nebraska Public Power and Irrigation District drafted a permanent agreement that entitles the Program to 75% of deliveries into the canal for recharge operations. The recharge score was adjusted proportionally to reflect the additional interest. A 75% interest in the project increases the score to 2,700 AFY for the Phelps County Canal groundwater recharge project.

Enclosure: Scoring Subcommittee Conference Call Minutes – May 31, 2016



**PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM**  
**GC Scoring Subcommittee Meeting Minutes**

Conference Call  
May 31, 2016

**Meeting Attendees**

**Scoring Subcommittee**

**State of Colorado**

Suzanne Sellers – Member

**State of Wyoming**

n/a

**State of Nebraska**

Jennifer Schellpeper – Member

**U.S. Fish and Wildlife Service**

Tom Econopouly – Member

**U.S. Bureau of Reclamation**

Brock Merrill – Member

**Downstream Water Users**

Mike Drain – Chair

**Colorado Water Users**

n/a

**Upper Platte Water Users**

n/a

**Environmental Groups**

Bill Taddicken – Member

**Welcome and Administrative**

Introductions were made. Sartori noted that Clerkin, Berryman and Woodward contacted the ED Office to state they would not be able to attend the meeting but agreed with the scoring analysis and score discussed in the memo for the Cook tract recapture well project.

**Project Scoring Discussion**

The Scoring Subcommittee discussed the operation and score of the Cook tract recapture well, a project that operates in conjunction with the Program's Phelps County Canal groundwater



45 recharge project. The Cook tract recapture well is only sponsored by the Program and therefore,  
46 only uses the Program's portion of the Phelps County Canal groundwater recharge project.

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48 Drain asked how the well would be operated and if there are times when the pumping volume  
49 could exceed the Program's recharge accretions. Sartori responded that in the score model, there  
50 is always a net positive accretion at the river from the combined projects (Phelps County Canal  
51 recharge and the Cook tract recapture well). During operations, the Program will monitor the  
52 volume of actual recharge accretions and the pumping volumes in water accounting sheets; if  
53 there is a time when projected pumping could create a net negative at the river, the Program  
54 would curtail or cease pumping. This would be applicable if the recharge project ended as well –  
55 the Cook well pumping operations would end if recharge accretions were insufficient to create a  
56 net positive effect on the river.

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58 Drain asked Econopouly if he was comfortable with the routing loss method (WMC Loss Model  
59 factors) used in the scoring analysis, as it was a topic of discussion at the last Scoring  
60 Subcommittee meeting. Econopouly said he reviewed information provided by the ED Office  
61 regarding the routing loss methods used by the Nebraska Department of Natural Resources and  
62 the Program's WMC Loss Model factors. He said he accepted the WMC Loss Model routing loss  
63 factors for the Cook tract recapture well scoring.

64  
65 Drain suggested the Cook tract recapture well score should be tied to the Phelps County Canal  
66 Groundwater Recharge project score since the well cannot operate without the recharge project.  
67 The approved Phelps recharge project score is 1,800 acre-feet per year (AFY) for the Program,  
68 assuming a 50% interest in the project. Sellers agreed that the scores should be combined. There  
69 were no additional items of discussion among the group.

70  
71 Drain made a motion to recommend a score to the Governance Committee of 160 acre-feet (AF)  
72 to be added to the Phelps County Canal groundwater recharge score for the addition of the Cook  
73 tract recapture well. The total recommended score for the Program from the combined projects is  
74 1,960 AFY<sup>1</sup>. Econopouly seconded the motion. The motion was unanimously supported by the  
75 Scoring Subcommittee. There were no dissenting votes. Kenny said the recommendation would  
76 be provided to the Governance Committee at the September meeting, so that the operating rules  
77 may be completed before approval.

### 78 79 **Update Since Meeting**

80 The Program and the Central Nebraska Public Power and Irrigation District drafted a permanent  
81 agreement for a 75% allotment of deliveries into the Phelps County Canal recharge project.  
82 Previous temporary agreements entitled the Program to 50%+ of deliveries, and the score  
83 accepted by the Governance Committee was based on a 50% interest (1,800 AFY score). The

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<sup>1</sup> The Program's Phelps County Canal groundwater recharge project score is 1,800 AFY for a 50% interest in the project. The Cook tract recapture well score is 160 AFY for the Program based on the scoring analysis presented to the Scoring Subcommittee.



84 Phelps recharge score has been adjusted to reflect the 75% of deliveries allotted to the Program.  
85 The adjusted score is 2,700 AFY (proportional increase from 50% to 75%). Including the Cook  
86 recapture well score of 160 AFY to the Phelps recharge score, the total score is 2,860 AFY.