TO: GOVERNANCE COMMITTEE
FROM: ED OFFICE
SUBJECT: BROADFOOT-NEWARK WELL SCORE
DATE: NOVEMBER 26, 2013

I. POTENTIAL WELL SCORE

The projected score for the Broadfoot-Newark surplus land well presented in this memorandum is preliminary in that it has not a Governance Committee approved score. However, the methodology used follows procedures vetted by the Water Advisory Committee and provides a general annual estimate for planning purposes. The ED Office utilized the PBHEP offset calculator to determine the credit from the surplus land well, based on a present condition of 117 acres of irrigated corn and a future condition of 117 acres of pasture grass. PBHEP calculated a well credit of approximately 29.3 acre-feet per year (AFY) for the well. Due to the lagged nature of well pumping depletions, it was assumed the well credit was distributed equally per month to estimate the potential score. **Table 1** is a summary of the analysis and shows the Broadfoot-Newark surplus land well would have a Program score at Grand Island of approximately 9 AFY.

Table 1. Approximate Score for Well.

(A) PBHEP Credit (AFY)	(B) Proportion of Yield at Grand Island	(C) Percent of Habitat Impacted	(D) Yield at Grand Island (AFY)	(E) Percent of Months w/Shortages	**(F) Potential Score (AFY)**	(G) Score Efficiency
29.3	88%	60%	15.5	58%	**9.0**	*31%*

Column A = Well credit in PBHEP from irrigated corn to pasture.
Column B = Estimated proportion of yield that reaches Grand Island (average annual routing loss from project location to Grand Island using WMC Loss Model is 12%).
Column C = The USFWS recommended a linear habitat discount for projects below Overton. The Broadfoot-Newark surplus land well is around Kearney, which is approximately 60% of the distance in the Overton to Grand Island reach.
Column D = Columns (A x B x C).
Column E = Proportion of months during 48-year OpStudy modeling period when there are monthly shortages to target flows. It was assumed the well credit would be distributed equally per month.
Column F = Columns (D x E).
Column G = Score efficiency is considered the score at Grand Island divided by the yield at the project location. Columns (F / A).

II. Appraised Value Substitution Method

The Broadfoot-Newark surplus land was appraised by an independent real estate appraiser to determine the loss of value from selling the property with and without irrigation water rights. **Table 2** is a summary of the analysis and shows the Broadfoot-Newark surplus land value for the 117 acres of cropland.

Table 2. Appraisal detail

(A) Appraised value before water removed	(B) Appraised value after water removed	(C) Value of irrigation indicated from appraisal	(D) Difference per acre of irrigated land	**(E) Cost per acre-foot yield ($/AF)**	**(F) Cost per acre foot score ($/AF)**
$1,186,927.60	$901,427.60	$285,500.00	$2,440.17	**$9,744**	**$31,722**

Column A = Fair market value of total property including 117 acres irrigation legally permissible.
Column B = Fair market value of property without 117 acres of irrigation. Crop may be dry land.
Column C = Fair market value lost due to removing 117 acres of legal irrigation permanently. Columns (A-B).
Column D = Irrigation value / 117 acres. (Column C/117).
Column E = Columns (C / Table 1 (A) [29.3AFY]).
Column F = Columns (C / Table 1 (F) [9AFY]).

III. Summary

Analysis of the water yield available to the Program, and the difference in value from selling irrigated crop land without water rights, indicate a cost per acre foot of yield of $9,744 and a cost per acre foot of score of $31,722. Either of these figures is far higher than reasonable water values in the Nebraska water market in the Central Platte.

Present market values show an upper range for leasing water on the order of $200 per acre foot per year of yield or purchasing for $2,500 to $3,000 per acre foot of yield. At $2,500 to $3,000 per acre foot of yield, $285,500 would purchase approximately 100 acre-feet of water that could score with a higher efficiency (score value closer to yield value) than the Newark well water. A number of purchase options are under consideration in this price range with score efficiencies on the order of 60 to 70%.

It is recommended that the Broadfoot-Newark land be sold with water rights as irrigated cropland and the additional value of $285,500.00 gained from that sale be used to purchase or lease other water supplies at prices in line with fair market value.