

Second Update to the Water Rate Analysis Reclamation District 2035

To: Mike Hall, General Manager, Reclamation District 2035

From: Gary Reents, P.E.

Date: March 5, 2018

Subject: Second Update to Water Rate Analysis

Introduction

The original Water Rate Analysis (Analysis) was prepared for Reclamation District 2035 (District) in January 2015. The Analysis defined the methodology for formulating water rates for the District by calculating both a Capacity Charge and a Volumetric Rate, which together comprise the Water Rate. The Capacity Charge recovers annual operating costs via a fixed charge per acre of land. The Volumetric Rate recovers the variable cost of water via a volumetric rate per acre-foot of water delivered. The reader should consult the original Analysis for background information regarding the Water Rate (Attachment 1).

In March 2016, the Update to Water Rate Analysis (First Update) was prepared at the District's request. The First Update used cost data from 2015 to update the Capacity Charge, and additional information regarding pumping and cost data from 2011 through 2015 to update the Volumetric Rate. The First Update is also attached for background information (Attachment 2).

This Second Update to Water Rate Analysis (Second Update) requested by the District will update the Capacity Charge based on the Board adopted fiscal year budgets, and the Volumetric Rate based on 2016/17 pumping data from the new intake facility. These two updated components will then be used to determine a new Water Rate for the District.

Capacity Charge

The original Capacity Charge was calculated using actual operational expenses from fiscal year 2013/14. In addition, the rate also included annual expenses to create a contingency fund (\$83,333 per year) and an intake capital

replacement fund (\$88,333 per year). The calculated Capacity Charge was \$62.50 per acre.

The First Update used actual operational expenses from fiscal year 2014/15. The contingency fund balance established by RD 2035 had been met so the original expense of \$83,333 per year was discontinued. However, the capital replacement fund contribution of \$88,333 per year remained in place. The updated Capacity Charge calculated in the First Update was \$61.55 per acre.

For this Second Update, I recommend using the formal budget adopted by the District Board to determine the Capacity Charge. Using the adopted budget will better link the Capacity Charge directly to the proposed spending formally approved by the Board. The adopted budgets for the current and last two fiscal years (FY 2017/18, FY 2016/17 and FY 2015/16) were reviewed (Attachment 3). The budgets for FY 2017/18 and 2016/17 included an expense for WAPA electrical charges (Utilities) that are used to set the Volumetric Rate, not the Capacity Charge, so this expense was deducted from the totals for these fiscal years.

After adjusting the FY 2017/18 and FY 2016/17 budgets for the Utilities expense, the budget amounts are \$661,150; \$803,750; and \$839,050 for fiscal years 2017/18, 2016/17, and 2015/16, respectively. It should be noted that each of the three fiscal year budgets contained an expense for an annual contribution to the capital replacement, or sinking, fund. However, the budgeted amount is \$131,400 in each case rather than the lower estimated annual amount of \$88,333.

Each of these fiscal year budgets was divided by 14,845 total acres eligible for water delivery within the District (per General Manager Mike Hall, January 10, 2018 meeting). The resultant per acre charge by fiscal years is \$44.54; \$54.14; and \$56.52, respectively. The budgets for the last three fiscal years, and the related Capacity Charges, clearly trend downward. However, to provide for uncertainty and avoid any shortfall in revenue, I recommend the District adopt a new Capacity Charge that averages the last three years. The resulting Capacity Charge, rounding to the nearest whole dollar amount, is \$52.00 per acre.

Volumetric Rate

The Volumetric Rate calculated in the original Analysis consisted of two parts – one for groundwater and one for surface water (\$34 and \$5.30 per acre-foot,

respectively). For the First Update, the District determined that groundwater produced by wells using PG&E power should no longer be included in the Water Rate since Conaway Ranch, rather than the District, now pays all PG&E expenses. As a result, the groundwater volumetric rate calculated in the original Analysis was no longer applicable.

The original surface water volumetric rate was calculated using Bureau of Reclamation charges for water and total WAPA power costs. The calculation was based on information provided that the district used WAPA power exclusively to pump surface water. However, when preparing the First Update it was recognized that WAPA power is actually utilized to pump both surface and groundwater.

Because it was not possible to separate the WAPA power costs for pumping surface water versus groundwater, the First Update calculated a “blended” Volumetric Rate based on the cost of total water pumped. The blended Volumetric Rate was directly dependent on the ratio of surface water versus groundwater pumped in any given year since it costs more per acre-foot to pump groundwater than surface water.

For this Second Update, surface water pumping and electrical usage data is available from the new intake that has been in operation since October 2016. The new intake has separate flow meters for each of the District surface water pumps. The new intake also has electrical meters allowing the District to determine its power usage, and thus costs, for pumping only surface water.

In addition to surface water from the new intake, The District still utilizes some groundwater from wells OW-1 and OW-2. Wells OW-1 and OW-2 are connected to WAPA power, but do not currently have electrical usage records to determine the cost per acre-foot for water produced from these wells. As a result, the cost for groundwater cannot be included in the updated Volumetric Rate. However, wells OW-1 and OW-2 are estimated to supply less than 5% of the water produced by the District (February 16, 2018 email from Darren Cordova, MBK Engineers, Attachment 4) and thus are not considered consequential. In the future, power used by wells OW-1 and OW-2 will be metered which will allow a potential revision to the Volumetric Rate, if necessary.

Using the surface water pumping data at the new intake from September 2016 through September 2017 (Attachment 5), the District pumped 37,576 acre-feet of surface water. The total cost for the District’s WAPA power was

\$255,711. Dividing the surface water produced by the cost of WAPA power results in a Volumetric Rate of \$6.81 per acre-foot.

Applying this Volumetric Rate to Wet, Normal, and Dry water years will result in different costs to the District to supply water for a given crop. Darren Cordova, MBK Engineers, provided an analysis of the ratio of groundwater versus surface water produced during Wet, Normal, and Dry years (Attachment 6). From Attachment 6, one can see that the District actually uses more surface water during a wet year than during a normal year. As a result, the District's costs to supply surface water during a wet year will actually be higher than during a normal year.

For example, white rice uses six acre-feet of water per year (District Schedule of Water Delivery Rates, Attachment 7). In a wet year, the cost to the District per acre of white rice is \$34.32. This is determined by taking 84% of six acre-feet of water (the amount of surface water used for an acre of white rice) times \$6.81 (the cost per acre-foot of surface water). However, the District's cost to supply surface water for an acre of white rice during a normal year is only \$23.70 (58% of six acre-feet multiplied by \$6.81 per acre-foot). The cost during a dry year is \$28.19 per acre.

In setting water delivery rates for irrigation of various crops, assuming the wet year surface water delivery of 84% would be most protective of District finances. In order to compensate for the reduced costs during normal and dry years, the District could provide a credit to farmers in the subsequent year after a previous normal or dry year. For example, for a farmer growing white rice in 2018, if 2018 turns out to be a dry year, the District would issue a credit of \$6.13 per acre (\$34.32 per acre collected minus \$28.19 per acre expense) to be deducted from that farmer's water delivery charges in 2019. These costs could be "trued up" using actual costs retrospectively for each year, thus insuring equity for both the District and farmers.

As an alternative, the District could base its water delivery charges on a normal water year, if the District entered into an agreement with Conaway requiring Conaway to pay the District for any shortfall in surface water delivery costs during wet or dry years. In a dry year, Conaway will typically fallow land and sell surface water thus producing extra income. In a wet year, Conaway will pump less groundwater than in a normal year thus receiving a cost saving. As a result, in both dry and wet years Conaway will receive additional income or savings with which to reimburse the District for added

surface water pumping costs not recovered from the water delivery charges based on a normal year.

Conclusion

Based on the last three years of Board adopted budgets, I recommend the District adopt a Capacity Charge of \$52.00 per acre of land. Based on surface water costs at the new intake for 2016/17, I recommend the District adopt a Volumetric Rate of \$6.81 per acre-foot of surface water.

If the District enters into a surface water pumping cost reimbursement agreement with Conaway as described above, I recommend the District base the Schedule of Water Delivery Rates on a normal water year. As a result, the water delivery rate for white rice would be \$23.70 per acre as described above. Adding the Capacity Charge of \$52 per acre would result in a total District water rate of \$75.70 per acre. Obviously, each different crop will result in a different water delivery charge for that specific crop.

If the District does not enter a reimbursement agreement with Conaway, I recommend that the District prepare its Schedule of Water Delivery Rates assuming that 84% of irrigation water delivered is surface water. Any excess revenue collected from using this assumption for the water delivery rates in wet and dry years would be returned to the ratepayers by issuing credits against the water delivery rates in the subsequent year.