

## WSF 2020 Annual Report # 5195

**PROJECT:** LLNRD Columbus Area Recharge Project – WSF  
Application #5195 (awarded November 28, 2017)

**DATE:** March 19, 2020  
(ANNUAL REPORT DUE ON OR  
BEFORE APRIL 1, 2020)

### **See Application 5195 Section D #2 For Project Scope Summary, Timeline and Acronyms**

#### PROJECT PROGRESS April 2019 TO APRIL 2020:

This is the third annual report. The LLNRD has continued to work with the City of Columbus, Platte County, and the Christopher's Cove Homeowners Association to develop a Columbus Recharge Project. As discussed in the application, the LLNRD, County, City, and the HOA are working with Archer Daniels Midland Company (ADM) to offset depletions by utilizing diverted reuse water near the Loup Public Power Tailrace Canal and conveying it to the remnant Lost Creek channel. Additionally, water would also be conveyed into Christopher's Cove to help provide additional recharge. Both channel and lake structures will allow the recycled water to infiltrate into the water table, but the system would only be operational during lower-than-normal rainfall. The group has elected to pursue the development option that includes using tailrace canal water to charge the remnant channel then utilizing another pump near the abandoned channel to add water into Christopher's Cove. This method would prevent potential infestation from invasive species (Asian Carp, Zebra Mussel, etc.) into Christopher's Cove. The NRD has continued to expand its groundwater monitoring in the vicinity with the installation of real-time pressure transducers that monitor groundwater levels and the lake elevation in Christopher's Cove. Portions of the Lost Creek channel have been removed of vegetation as part of the City's existing easement.

#### ANTICIPATED ACTIVITIES FROM NOW UNTIL NEXT ANNUAL REPORT DUE APRIL 1, 2021:

The group has continued coordination with US Army Corps of Engineers (USACE) on permit status and Bureau of Reclamation and National Environmental Policy Act compliance. Permit timelines have been submitted to other regulatory authorities including NDEE, NDNR, City, and Loup Power District. Finalized development of engineering analysis to evaluate any potential lower Platte River depletions is being discussed by the Fish and Wildlife Service and USBOR, and initial correspondence indicates there will be minimal impact. The contractor is examining the effect of additional scouring of the channel for augmentation of infiltration rates. Final design is anticipated by May 2020, within an initial construction start date of July 2020.

#### ANTICIPATED CASH FLOW FOR REMAINDER OF THE PROJECT:

Reimbursement Claim #1 for **\$137,935.46** (60% of eligible costs) was submitted on August 6, 2019. The LLNRD and its partners and WSF have funding obligations towards this project (\$2,040,000 total project costs) under grant award #5195.

#### LIKELIHOOD THAT BENEFITS PROJECTED IN APPLICATION 5195 WILL BE REALIZED:

From the 5195 WSF Application: Tangible benefits of the project include reduced pumping costs from area groundwater wells and avoided emissions, specifically criteria air contaminants (CAC) and greenhouse gas (GHG) emissions associated with the production of electricity used to power groundwater well pumps. The resulting benefits and energy calculations for each entity were calculated as follows: Irrigation pumping water levels were reduced by 10 feet from 65 feet to 55 feet, ADM pumping water levels were also reduced by 10 feet from 65 feet to 55 feet. The recharge project could save up to 223,580 kilowatt hours per year for a total savings of \$5.7 million over 50 years.