

WSF 2023 Final Report # 5195

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

DATE: MARCH 24, 2023
(FINAL REPORT)

See Application 5195 Section D #2 For Project Tasks Summary and Timeline

PROJECT PROGRESS APRIL 2022 TO PROJECT END:

This is the final report for the LLNRD Columbus Area Recharge Project. The LLNRD has continued to work with the City of Columbus, Platte County, the Christopher's Cove Homeowners Association, and Archer Daniels Midland Company (ADM) to complete the Columbus Recharge Project. The project offsets groundwater depletions by conveying surface water from the Loup Public Power Tailrace Canal via pipeline to the remnant Lost Creek channel. Additionally, recharged groundwater from a well is conveyed via pipeline into Christopher's Cove to provide added recharge.

The project contractor Rutjens Construction, Inc began construction in May 2021. A majority of the project was complete by the end of 2021 but disruptions in the supply chain caused by the COVID-19 Pandemic delayed delivery of various components necessary for project completion. The project construction was complete in summer 2022.

The completed project operated from June 2022 to November 2022. The initial season was a testing phase during which the project was operated under a variety of conditions and performance levels. The operations allowed the project team to verify design expectations and develop an Operations and Maintenance Plan based on project function.

ANTICIPATED ACTIVITIES FROM NOW UNTIL PROJECT COMPLETION:

This report serves as the final report for the LLNRD Columbus Area Recharge Project – WSF Application #5195 (awarded November 28, 2017)

ANTICIPATED CASH FLOW FOR REMAINDER OF THE PROJECT:

The LLNRD and its partners and WSF have met funding obligations towards this project (\$2,040,000 total project costs) under grant award #5195. The final Reimbursement Claim #3 for 871,753.73 was submitted on December 1, 2022.

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.

During the 2022 operating season the project provided a very conservatively estimated 466 acre-feet of water recharge to the groundwater decline area southeast of Columbus. The 2022 drought conditions further justified the needs for the recharge project. The demand on groundwater was above average and the recharge project provided offset for such demands in the area.