In the Farmers’ Co-Operative Ditch Company (FCDC) project, a group of partners tackled the excessive amount of sediment and nutrients in the irrigation water delivered by the Co-Op. Additional aspects of the project utilize on-farm practices to reduce water usage as well as improve soil health in Snake River and Lower Boise watersheds.

This project has greatly impacted all residents within the Lower Boise Watershed making it one of great value to the community as a whole. In its first year of operation the sediment basin removing nearly 5,700 tons of sediment from the ditch water before it is discharged back into the Lower Boise River. That’s about 475 dump truck loads! The basin also captured 7 tons of Phosphorous (top graph).

This pilot project for the FCDC, which had its official ribbon cutting on March 20, 2019 has not only demonstrated proof of concept, but will also enable the company and its partners to refine the general concept to meet Idaho’s specific needs at different locations.

The implemented plan will continue to concentrate on environmental awareness and strive to increase the number of conservation practices implemented. In addition, after the construction of the sediment basin, a monitoring plan was put into place. For the 2019 irrigation season, water was sampled at 1 foot and 3 foot depths at four locations - where the water enters the canal from the river, at the basin’s headgate, at the basin’s tailgate and at a point further down canal from the basin. The middle graph shows the total suspended solids entering and retained in the basin and the bottom one shows the total suspended solids entering the canal versus what reached the basin inlet for comparison.
Construction
Total construction time from ground-breaking to “ready for water” was eight months. Work on the sediment basin not only included construction of the embankment and the finger-like clean out pads, it also required the addition and compaction of 400 tons of bentonite clay into a layer that helps the basin seal itself. On top of the bentonite is a 1-foot deep layer of gravel that lets the excavator removing sediment from the basin know he or she has reached the bottom and can move on to the next area.

Opening Day
Members of the Co-Op were joined by NRCS and representatives of the project’s partners which included the Canyon Soil Conservation District, the Idaho Soil and Water Conservation Commission, the Canyon County Commissioners, City of Parma, the Southwest Idaho Resources Conservation & Development Council, the Idaho Soil & Water Conservation Commission and the Black Canyon Irrigation District for the “grand opening” of the sediment basin.

Monitoring
Samples were tested at an independent lab by the United States Department of Interior’s Bureau of Reclamation. Samples were taken twice a month at four locations: Where water entered the canal from the river, the headgate of the basin, the tailgate of the basin, and at a point below the basin. Samples were taken at 1 foot and 3 feet below the surface. For 2020, the plan is to continue to take samples twice a month at the same four locations. However, this year they will add another sample at 4 feet.

An Irrigation Season of Impressive Results
The basin captured more than 5,700 tons of suspended solids and 7 tons of Phosphorous. The sandbar in the center of the photo is between 5 and 6-feet high. For scale, the “pad” at the left is 8-feet tall from the bottom of the basin. This amount of capture not only met design expectations, it exceeded them. FCDC is looking at the potential of replicating the basin at other locations on the canal to provide additional sediment capture and further improve the water quality for its members and the community.