Englewood Metro Park Low Dam Breach Project

Five Rivers Metro Parks - $1.75 Million

Overview: This was Phase one of a multi-phase and multi-year project to redirect the floodwater into and out of the existing wetland lake and restore the Stillwater River close to its natural state. This entire project was located in a flood plain and an active nature park. It required detailed work sequencing, access layout, and coordination with the owner (Five Rivers Metro Parks) and OEPA. Part of the Stillwater River restoration was to remove a partial section of the existing concrete low head dam to gradually decrease the water levels of the river. To accomplish this WQSi had to temporarily dam up half the river, saw cut the concrete dam, and remove it. Also rock step vanes were installed across the river in two locations to reduce stream bank erosion and decrease sediment from washing down stream. An inlet channel with flashboard riser boxes and a concrete outlet control structure were built to redirect to flood water flowing into and out of the wetland lake. There was over 7,200 L.F. of river restoration.

Scope:

- Remove concrete low head dam
- Coffer dam installation
- Mechanical dredging
- Hydraulic dredging
- Inlet channel construction
- Step vane construction
- Live stakes
- Stop log outlet control structure
- Stop log abutment construction
- Riprap for stabilization
- Riparian seeding
- Erosion control blankets

Key Issues:

- Project located in a flood basin
- Sequence of construction activities

Regulatory Requirements:

- US Army Corp 404 Permit
- Ohio EPA 401 Permit
- US Army Nationwide Permit

Lessons Learned:

WQSi was one of the first companies in Ohio to remove a low head dam. This dam was responsible for several deaths due to the strong current created by the dam. Special care was taken to eliminate this hazard while working near the dam. WQSi also designed a special barrier to assist with the large aqua barriers coffer dam. The aqua barriers allowed too much infiltration in the sandy sediments below them. Our saw cutting operation required an almost dry area for the equipment to operate. We dug a trench on the protected areas behind the aqua barrier and put in temporary sheet piling to stop the infiltration. This method worked perfectly and this project was successful without any safety incident.