COLES+BETTS
environmental consulting
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ORCHESTRATING TECHNICAL OVERSIGHT AND REMEDIATION FOR WETLANDS




The Story

Historic fill materials (foundry sands) on our client's site contributed to stormwater and wetlands sediment contamination. A neighboring property also discharged its stormwater into the same wetland and wanted to install stormwater treatment on the client's property per an easement. Our client's old insurance policies funded the investigation and remediation of the (1) upland fill, (2) stormwater quality, and (3) wetlands.

The Challenge

There was a need to remediate contaminated upland (panhandle) fill materials (foundry sands) and wetland sediment to prevent a continued, adverse impact to wetland ecology. Panhandle soils, panhandle bank soils, and wetland sediments contaminated with lead and zinc were of concern, as were potential exposure pathways via contaminated groundwater, surface water, and/or soil/sediment. Before the site remedy, the wetland area consisted of invasive species. In the southern portion, contaminated fill encroached on the wetland owned by the railroad.

How We Helped

- Helped client secure insurance funding.
- Conducted site investigation to delineate upland fill material contamination and wetland sediment contamination.
- Worked with regulators, insurers, city permitting, the railroad, the US Army Corps of Engineers and attorneys to build consensus on a remedial method.
- Worked with adjacent property owner on an easement to allow construction of their new stormwater system to discharge onto our client's wetland property.
- Worked with a network of professionals, including an engineer and biologist, to design a complementary stormwater system and wetland restoration method.
- Worked with a regulatory agency to ensure compliance goals had been met.



Investigation and Cleanup

DEQ-approved contamination-remediation activities were completed, including removing and transporting "hot spot" material offsite for disposal: approximately 2,150 cubic yards of panhandle and wetlands materials with concentrations of lead, zinc, and chromium above DEQ ecological screening level values (SLVs, as defined in the Record of Decision).

Fill soils encroaching onto adjacent parcels that did not exceed SLVs for lead, zinc, and chromium were excavated back to the client's property, covered with clean soil, and planted with upland species. Fill soils and sediment that exceed risk-based concentrations but did not exceed SLVs, were placed on the panhandle for subsequent capping with impermeable asphalt, to prevent stormwater from infiltrating through contaminated panhandle fill materials and into the wetland, potentially mobilizing contaminants in the panhandle fill that could impact surface waters.

The wetlands were restored by backfilling excavations with appropriate clean soils, and restoring the surface with native wetland plant species. The client's stormwater now flows across the asphalt cap and is captured in a large vault that removes sediments and oil. The water then flows through a long bioswale that uses plant matter to remove other pollutants, including metals, before the water flows into the wetland. The neighbor's stormwater flows through a series of catch basins and swales before entering into a sedimentation vault. From there, it flows into a large swale along the client's eastern property boundary, and finally into a long vegetated bioswale for final polishing before entering the wetland.

Results and Benefits

The wetland was remediated and stormwater was treated prior to being introduced. Wildlife is no longer at risk of encountering contamination in this location and the wetlands are thriving. Monitoring is ongoing at the site to fulfill DEQ requirements prior to closure of regulatory files.



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