Partridge Brook Emergency Stream Bank Protection
Westmoreland, NH

Client: **U.S. Army Corps of Engineers**
Owner: **Cheshire County, NH**
Value: **$719,150**

This project consisted of the construction of stream bank protection features and related items at the confluence of Partridge Brook with the Connecticut River in Westmoreland, NH.

A sewage treatment plant and waste water lagoons service the Cheshire County House of Correction and Cheshire County Nursing Home. Severe erosion during recent flooding occurred on the river banks of the Connecticut River and along Partridge Brook placing the embankment of the lagoon in danger of failure.

The remedial construction occurred in two adjacent areas and required two separate construction approaches. Along the Connecticut River, severe erosion was repaired and permanent slope reinforcement installed, followed by new erosion control vegetation. As a cost-saving measure, the excavation and armoring along the Connecticut River bank was designed to be performed below the existing water level without dewatering. Specific work tasks for this portion of the work included:

- Extended an existing sewer outfall and incorporation of the outfall into a section of the restored rip-rap slope below water level.
- Excavated below-water level of riverbed materials.
- Below-water placement of graded granular filter material and rip-rap.
- Backfilled the rip-rap voids with riverbed sediment.
- Below-water survey was used to confirm rip-rap finish design elevations were achieved.
- Placed boulders in small groupings below the water level to provide fish habitat.
- Hand placed 2,700 sf of articulating concrete blocks above the normal water level to protect the river bank from further erosion during flood events. Native plant species were installed in the voids of the articulating blocks to create a vegetated surface.
- Installed geosynthetic turf reinforcement and seed in sloped areas.
- Installed other native trees, shrubs and grasses in disturbed areas.
- Along Partridge Brook, 180 lf of steel sheet pile 30 ft long were driven at the toe of the slope to 1 ft below finish grade.
- To prevent further damage to the slope, existing trees were left in place, resulting in very tight working conditions for the crane and crew.
- A trench was excavated 3 ft below grade to allow driving the sheet piling caps to 1 ft below finish grade.
- The trench and top of the sheet pile wall was backfilled with excavated soils and seeded.