Partnership with Stakeholders Incorporates Significant Improvements to an Urban Waterway as Part of MGP Remediation

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Background/Objectives. A former Manufactured Gas Plant (MGP) which operated from 1898 to 1946 on the bank of the Mettawee River in Granville, New York released coal tar into the subsurface, which migrated under the river and properties on the other side of the river. Over the years, the land on the other side of the river from MGP was developed into a park and recreation fields for the Town of Granville. This included fill placement to create usable land in the Mettawee River floodway, along with industrialization development on the MGP side of the river which narrowed the channel and resulted in an almost perfectly trapezoidal section through most of the reach adjacent to the site. The river has a naturally rocky bottom, which is currently largely flat with few habitat features. The river is approximately 80 feet wide with an average flow of 200 cubic feet per second.

The remedial approach for the coal tar which migrated under the river and off-site includes removal of the overburden and excavation of impacted soils for offsite disposal. This will result in major disturbance to approximately 1,000 linear feet of river, where both banks and the river bed must be removed to reach the impacted material. This major disturbance was identified as an opportunity to provide improvements to the river along this reach by the state MGP regulatory project manager, who brought together United States Fish and Wildlife (USFW) and Trout Unlimited (TU) to begin discussions during the remedial investigation phase.

Approach/Activities. Conceptual discussions with stakeholders began during the feasibility study phase, and evolved into a design partnership. Design began by AECOM providing boundary conditions for the work to USFW/TU, who developed new geometry and features for the river. AECOM then took this conceptual design work, and fleshed it out into restoration plans and detail. This geometry was incorporated into the restoration design through several design iterations until a final design was determined that met the remediation and restoration requirements. The local New York State Fish and Wildlife Region 5 staff was also involved during design in determining the appropriate restoration for the floodplain. Design work also included significant hydraulic and hydrology modeling completed by both AECOM and TU, as well as working with the property owners to gain concurrence with the changes during the design phase, some of which made changes to the river alignment and therefore their property boundaries.

Results/Lessons Learned. The final design will transform the affected river reach from a broad trapezoidal cross section, a constant slope, and few habitat features, into a riffle-pool morphology with the addition of wetland benches to increase connectivity with the flood plain. The design also includes several different types of grade control and habitat structures to increase the value of the river for fish and recreation. The new restoration design includes structures such as converging rock clusters, boulder clusters, j-hooks, rock barbs, and deep-water pools. Partnership with stakeholders early on resulted in a shorter review time for approval of the design with state environmental regulatory authorities, as well as support when presenting the design to the Army Corps of Engineers.