

North St. Elmo Drainage Improvement Project Connecting Brownfields and Infrastructure

The Tennessee Department of Environment and Conservation (TDEC), Division of Remediation (DoR) is utilizing US EPA 128(a) Brownfields funding to provide technical assistance and oversight on the City of Chattanooga's North St. Elmo Drainage Improvement Project.

Since the 1800's, foundry operations were very active in Chattanooga. As a result, large volumes of foundry sand and other byproducts (i.e. slag) were generated and commonly used to fill low lying areas throughout downtown Chattanooga. Consequently, the majority of brownfields in downtown Chattanooga must address foundry residuals.

A portion of the current drainage system runs beneath the Wheland St. Elmo hazardous waste foundry landfill and the associated 7'x10' corrugated metal pipe is in the process of collapsing. This project involves installation of approximately 3,285 feet of drainage infrastructure to drain over 1,100 acres of south Chattanooga at a total project cost of over \$15.1 million for the City of Chattanooga. If the existing culvert fails, parts of the city would experience significant flooding. Additionally, there is a high probability that foundry sand would be released to the Tennessee River via Chattanooga Creek, which is approximately 150 feet from the outfall of the St. Elmo drainage system.

Due to the crucial and time critical nature of this project, DoR utilized the US EPA 128(a) Brownfields funding to conduct oversight, assistance and work with the City of Chattanooga to complete a Brownfield Voluntary Agreement (BVA). The EPA 128(a) funding allows DoR to provide substantial support to the City for technical assistance and oversight. The BVA also limits the City's future liability for the large portions of the storm water conveyance that run through historical fill, comprised of foundry wastes (sand, slag) and solid waste.

This project was started in the fall of 2016 and is anticipated to be completed in 2018. The final design of this project will include streetscape improvements that will tie into existing infrastructure including the Riverwalk Greenway



Above, the 10'x10' box culvert. The foundry fill is above native soils. Shortly after this section of the alignment, the foundry fill dramatically increased, along with solid waste and other fill as the sub-surface composition changed throughout the project.



Below is the finished portion of alignment, with outfall construction underway. Note the foundry sand landfill just to the left (southwest) of the alignment.



Above is the tunnel portion of the alignment, preparing to begin excavation.