

## **Options for Tannery Run**

Current conditions in the Tannery Run area still present a potential for substantial threat to human health and the environment due to the erosion along the stream banks and the visible presence of asbestos-containing material (ACM).

Tannery Run borders the BoRi Site to the east/southeast and flows to the south/southwest of the pile area. A commercial area (McDonald's, Classic Coachwork, and Sons of Italy) is located southeast of Tannery Run, opposite the pile. The approximate length of Tannery Run under consideration is approximately 720 feet, with an average width of 13 feet. However, behind the Sons of Italy parking lot, the width of the creek is approximately 24 feet, due to significant erosion. The creek flows over bedrock and as measured on June 10, 2008, the average velocity of the creek is approximately 1.3 feet per second, during normal conditions. The approximate elevation difference between the two ends of the creek is 10 feet. The creek bed drops approximately 4 feet behind Classic Coachwork. The height of the stream banks varies from approximately 10 feet near Maple Street, to approximately 20 feet near the confluence with the Wissahickon Creek.

Gilmore and Associates, Inc. (Gilmore), a consultant to the Borough of Ambler, completed a study of the Tannery Run Drainage Area, dated March 18, 2010. For the calculation, Gilmore assumed the catchment area for Tannery Run to be 460.76 acres and used a weighted land coefficient of 0.486 (based on the description of land cover). Based on various rainfall intensity rates, Gilmore calculated the discharges for a 2-year flood event through a 100-year flood event for Tannery Run. According to the calculation, the maximum discharge for a 100-year flood event should be approximately 676 cubic feet per second.

Considering all factors mentioned above, and after talking to different stakeholders [e.g., PADEP, EPA Remedial Program, EPA Biological Technical Assistance Group (BTAG), U.S. Fish and Wildlife Service, Army Corps of Engineers, Borough of Ambler and its consultant (Gilmore & Associates, Inc.)] the following options were considered to address the erosion problem along the stream banks of Tannery Run under the current Removal Action.

### **Option 1 – No Action**

Under Option 1, Removal would not do anything and Remedial would decide what to do once the Remedial Investigation and Feasibility Study (RI/FS) are completed.

With Option 1, the stream banks will continue to erode and therefore, the integrity of the pile and the adjacent parking lot areas might be put in jeopardy.

### **Option 2 – Creek Enclosure**

Under Option 2, the creek would flow through either a four sided concrete box culvert or a buried pipe.

This option will provide maximum protection against erosion. However, due to the restricted access, logistics issues, and concerns from some of the stakeholders (e.g., the potential for upstream flooding), the use of a concrete culvert is not considered to be a viable option.

The use of pipes from Maple Street to the confluence with the Wissahickon Creek would be a viable option; installation is much simpler than the concrete box culvert. However, PADEP has requested EPA to design for the 100 year flood event, which means, based on Gilmore's calculation, that the pipe should be able to handle a flow of water of at least 676 cubic feet per second. Additionally, there were some concerns about debris blocking the pipe, even with manholes for access. Therefore, a complete pipe enclosure is not considered to be a viable option.

### **Option 3 – Open Channel**

Under Option 3, Tannery Run would be kept open. To be able to accomplish this, the creek will have to be shifted at least 15 to 20 feet to the right (pile side) as viewed from Maple Street. That would be needed in order to have somewhat stable banks on the left side, especially behind the Sons of Italy parking lot, where the stream banks are approximately 20 feet high.

To be able to implement Option 3, a considerable amount of ACM would have to be excavated. Therefore, at this time, Option 3 is not considered to be a viable option.

### **Option 4 – The “Hybrid”**

Under Option 4, a combination of Options 2 & 3 would be implemented. Approximately, the first 300 feet of the creek (from Maple Street) will be kept open and the rest of the creek, approximately 325 feet, will flow through a buried pipe. The area immediately upstream with the confluence with the Wissahickon Creek will be left open.

After considering many different options, including the four options mentioned above, and after talking with different stakeholders and consultants, Option 4 is the better option to stabilize the stream banks of Tannery Run at this time.

#### **Open Section**

1. The stream banks will be graded to a desired slope, with the creek bed of approximately the same width or a couple of feet wider. Since the creek bed is currently bedrock, no depth excavation will be performed.
2. Once the side slopes are cleared, covered and graded to the desired slope, the area will be hydroseeded and covered with an erosion mat or a Living Wall (stacked biologs) will be installed.

Enclosed Section

1. A pipe will be installed and buried. The diameter of the pipe would be approximately 8 feet. Although the pipe will be big enough to be able to walk through it, there will be manholes to access the pipe.
2. An apron would be constructed at each end of the pipe.
3. The area on top of the pipe will be covered with fill material, which will be graded so any runoff water would flow toward the Wissahickon Creek. The amount of material will vary depending on the current height of the stream banks, especially the left side.
4. In case there is a storm event with a flow higher than what the pipe will be able to handle, a swale will be constructed along the top right section of the new ground surface, so the water would just flow down to the Wissahickon Creek.

Specific design details still need to be worked out. It would be ideal to start implementation of the design in the fall.