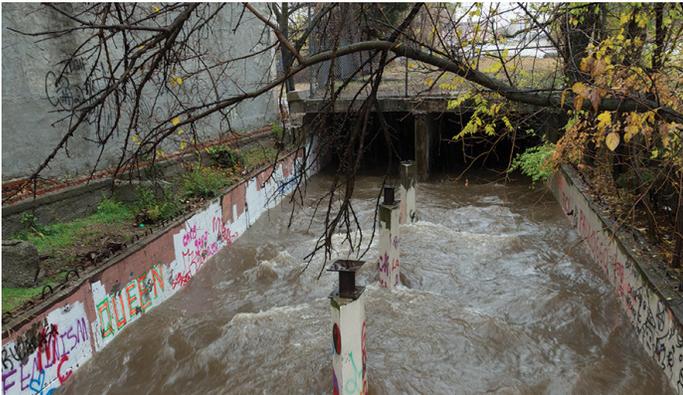


Flood Control and Water Quality Technical Summary



Flood Control

The primary goal for this project from an engineering standpoint is flood control. In the project area from Main Street to Booneville Avenue, there are roughly 40 or more structures that are located within the floodplain for Jordan Creek.

The project goals related to flood control are to reduce the 100-year flood elevation so that it is at or below the floor elevations of each of these structures and provide ten-year flood capacity within the channel itself.

The design of this space must be conscious of the need to provide a significant area below the street elevation for conveyance during flood events. The width and depth of the needed flow area needed will vary with the ultimate layout of the space. The key is to understand that the project area will function to convey flood flows and that design grades must accommodate the flood control goals.

Water Quality

The second goal for this project is to improve water quality. Water runoff from impervious surfaces goes into the stream, contaminating the creek. There are several solutions to address these contaminants as part of the project design and some element of each of these best management practices will have to be included in the design.

The first way to address these needs is through disconnected impervious area (DCIA). The storm sewer discharges can be disconnected from the channel and provide water treatment prior to releasing the urban runoff back to the channel. Treatment methods include bioretention areas, grass swales and infiltration areas.

Another way to improve the water quality is riparian restoration. This is partly accomplished through the daylighting of Jordan Creek and providing natural materials for the channel bed and banks. Native planting will help stabilize the banks and reduce pollutants. The project design must also incorporate elements that improve the natural habitat within the stream which may include pools, riffles, boulders, logs, or other habitat features. Tree plantings should be incorporated in the project to provide shading, to reduce stream sediment and promote uptake of water and pollutant nutrients. Soil restoration can be performed to loosen dense, compacted urban soils and help promote good water quality through infiltration and treatment in select areas.

Additional Factors to Consider

The existing base flow is currently located in the Jordan Creek box culvert. This flow must be diverted into the project area to be utilized as an attraction and to be treated by the water quality elements of the project.

Material selection throughout the project area will be important to ensure the materials meet the projects goals for water quality but are capable of withstanding the stresses required by an urban conveyance element. While selecting park features, we should also consider the safety risk of flooding during and shortly after heavy rainfall. Features should be selected with the understanding that the project area will be periodically submersed.

