

Confluence

Site Introduction & Existing Conditions

The Confluence stream restoration project area is located at the lower end of the Fern Hollow Creek corridor, where the creek’s main stem meets Falls Ravine Creek near the intersection of Tranquil and Falls Ravine Trails. This reach of Fern Hollow is among the most ecologically stressed in the corridor: the hillside to the northeast is steep, highly eroded, and actively delivering sediment to the stream through gully erosion and bank failure. Established trees line the existing streambanks and must be preserved to the greatest extent possible, as their root systems provide critical bank stabilization. To the southwest, a combined sewer and a popular event lawn run parallel to the stream channel, constraining how far restoration grading and riparian planting can extend in that direction and limiting the available footprint for stream restoration work. Despite these constraints, the confluence node is a high-visibility, high-traffic location that presents a meaningful opportunity to demonstrate what a restored and ecologically functional Fern Hollow Creek can look like.

Proposed Solution

The schematic design proposes a suite of nature-based interventions focused on stabilizing the stream corridor and restoring its ecological function. Streambank and hillslope stabilization techniques—including live staking, brush layering, log toe protection, and riparian buffer plantings—address active erosion on the northeast hillside and along the creek’s banks, reducing sediment inputs and rebuilding bank structure without hard armoring. The riparian buffer zone is restored and expanded where space allows, replacing invasive species with native riparian plantings that reinforce bank stability, improve habitat connectivity, and enhance the ecological character of the corridor. A streamside trail extension and a series of access nodes—modest, low-impact interventions that bring park users to the water’s edge at carefully selected points—provide opportunities for education and environmental engagement while concentrating foot traffic away from sensitive bank areas. The existing event lawn to the southwest is preserved as a community asset and incorporated into the design.

Expected Performance & Implementation Considerations

Performance at this site is measured in ecological and physical restoration terms rather than hydrologic metrics. Key indicators include linear feet of streambank stabilized, area of riparian vegetation restored and expanded, number of stream access points provided, and area of event lawn preserved. This project carries significant regulatory complexity: all streambank stabilization and riparian restoration work within or adjacent to the Fern Hollow Creek channel and its floodplain requires a joint Individual Permit from PA DEP (Chapter 105) and the U.S. Army Corps of Engineers (Section 404). The presence of the combined sewer infrastructure adjacent to the project area will require coordination with Pittsburgh Water throughout design development. A tree survey is needed to document existing bank trees before final stabilization techniques can be selected, and geotechnical assessment of the eroded northeast hillside is a prerequisite for hillslope stabilization design.

DESIGN FEATURES:

- Nature-based streambank and hillslope stabilization
- Riparian zone restoration and expansion
- Streamside trail extension and access nodes for education and engagement

SITE CONSTRAINTS:

- Existing watercourse with established trees along banks
- Steep and highly eroded hillside to the NE
- Combined sewers and existing popular event lawn to the SW run parallel to stream bound limits to space available for stream restoration

PERFORMANCE METRICS:

- Linear feet of trail to boardwalk conversion
- Cubic yards of trail bed transferred from floodway
- Area of wetland vegetation restored
- Linear feet of trail runnels repaired
- Number of cross drain connections



DESIGN NOTES

- 1 STREAMSIDE TRAIL
- 2 EXPANDED RIPARIAN BUFFER
- 3 ROCK SILL ACCESS NODES
- 4 SANDSTONE BOULDER TERRACE / SEATWALL WITH ACCESS RAMP
- 5 CROSS VANE
- 6 LIVE CRIBBING BANK STABILIZATION AT CULVERT
- 7 EXISTING BRIDGE / CULVERT
- 8 HILLSIDE REVEGETATION / STABILIZATION

Confluence



Confluence Enlargement

Site Introduction & Existing Conditions

The Confluence pavilion and restroom project focuses on the trail node at the intersection of Tranquil Trail and Falls Ravine Trail—the most heavily trafficked convergence point in Frick Park and a natural gathering place for trail users arriving from multiple neighborhoods. Despite its prominence as a park destination, the site currently lacks permanent restroom facilities, covered rest areas, and wayfinding amenities. Existing sewer and electrical utility connections that once served facilities at this location have been severed, leaving the site without the infrastructure needed to support new facilities. Mature trees are present adjacent to the trail and throughout the proposed facility area, constraining siting and requiring careful protection during construction. The intersection itself serves not only recreational trail users but also park maintenance and emergency access routes, a function that must be preserved throughout construction and in the permanent design.

Proposed Solution

The schematic design proposes reconstruction of an accessible restroom and picnic pavilion at the Confluence node, with restored water, sewer, and electrical utility connections. The facility program includes accessible restrooms, covered picnic shelter, a bike repair station, and a dog water fountain—amenities identified as priorities through the Fern Hollow Vision Plan community survey. An informational kiosk is sited at the confluence of Falls Ravine and Tranquil Trails, providing wayfinding, park history, and interpretive information at the point where most park users naturally pause. Additionally covered benches along Tranquil Trail offer respite, shelter, and views of the event lawn and Fern Hollow’s enhanced riparian border. The kiosk and shelter structures are designed to complement the natural character of the Fern Hollow valley, using materials and forms appropriate to a forested park setting.

Implementation Considerations

The utility restoration challenge is the central implementation hurdle at this site. Reconnecting water, sewer, and electrical service to a facility deep within Frick Park will require tracing, investigating, and likely reconstructing utility runs of significant length through established park land—a process that demands early coordination with Pittsburgh Water, Duquesne Light, and the City’s Department of Parks & Recreation. CCTV of the existing sewer lateral is a high-priority prerequisite before sewer tap-in plans can be finalized. Construction access and staging must be carefully planned to maintain pedestrian, maintenance, and emergency vehicle access through the active trail intersection at all times, and tree protection measures must be established early given the density of mature canopy at and around the facility site. Coordination with Parks & Recreation on design standards, long-term maintenance responsibilities, and operational requirements—including restroom hours and seasonal closures—will be essential before the project can be finalized.

DESIGN FEATURES:

- Reconstruction of accessible restroom and picnic pavilion with restored water, sewer, and electrical utility connections.
- Additional covered rest areas and kiosk at the “confluence” Falls Rivine and Tranquil Trails.

SITE CONSTRAINTS:

- Intersection of multiple major trails that serve park users, and maintenance and emergency access
- Existing sewer and electric utility connections severed
- Mature trees adjacent to trail and facilities

PERFORMANCE METRICS:

- Note



- DESIGN NOTES
- 1 EXISTING RESTROOM REPLACED WITH ACCESSIBLE CXT PREFABRICATED RESTROOM
 - 2 LOW PITCHED GABLE WOOD SHELTER - 20X28' WITH RESTORED CONCRETE FOUNDATION
 - 3 CONFLUENCE INFORMATION KIOSK
 - 4 MILLED TIMBER BENCH WITH CANOPY COVERING
 - 5 RESTORE ELECTRIC SERVICE TO RESTROOMS AND PAVILION
 - 6 REPLACE BROKEN SEWER LATERAL CONNECTION FOR RESTROOMS

Confluence Enlargement

