

Croydon Creek / Calvin Park Stream Restoration Project

December 7, 2024

Today's Discussion

- Meeting Topics
 - Stream Restoration Overview
 - Croydon Creek/Calvin Park Project Goals
 - Existing Conditions – what it looks like now
 - Proposed Conditions – what it will look like during construction
 - Proposed Conditions – what it will look like after construction
 - Timeline
- Field Walk

Stream Restoration Overview



Stream Restoration

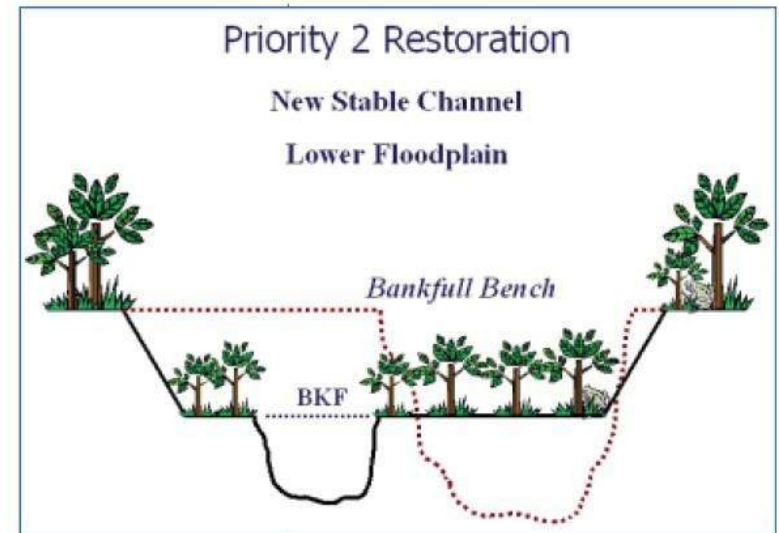
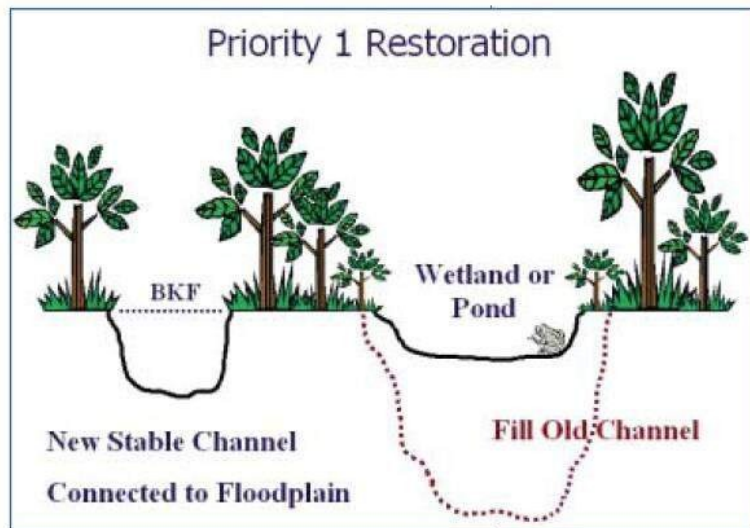
Reasons for stream degradation:

- Urban area
- Development and land use changes
- Erodible stream banks
- Existing dam



Stream Restoration

- Various types of restoration approaches
- Priority Levels for restoring channels



Stream Restoration



Priority 4 - Harden Channel in Place

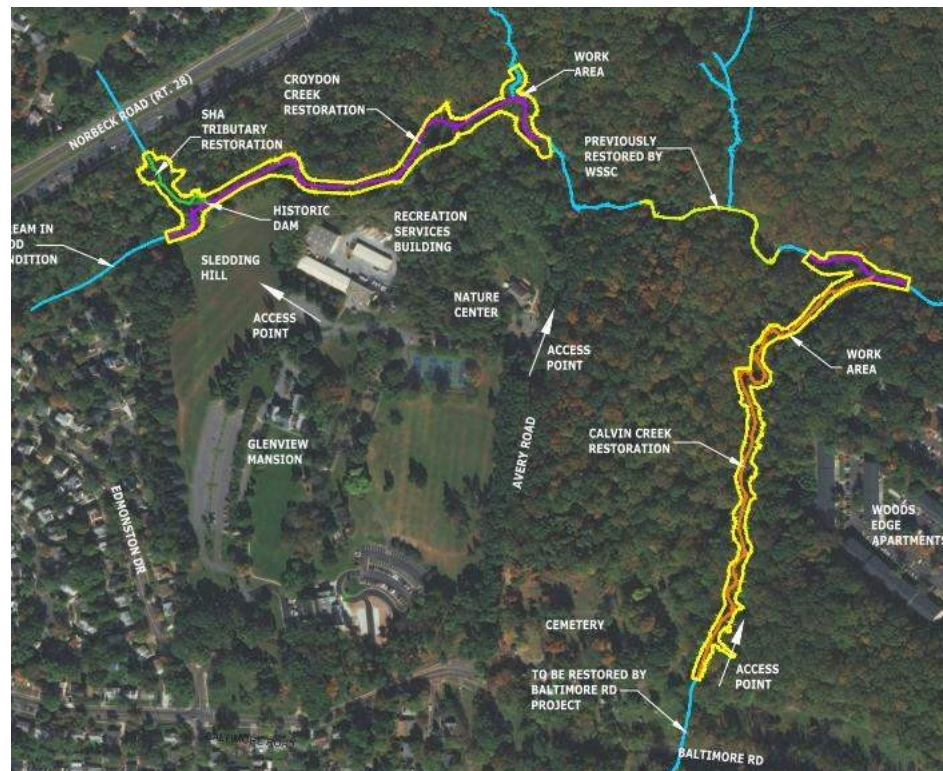
- The City has selected methods to minimize impacts to the forest and surrounding park.



Natural Channel Design - Priority 2/3

Restoring Croydon Creek / Calvin Park

- Enhance approximately 4,000 linear feet of the Croydon Creek and Calvin Park Tributaries to Rock Creek



Project Goals



Project Goals

- Long-term protection for the City's streams
- Stabilize the three tributaries
- Floodplain connectivity
- Buffer restoration
- Improve habitat
- Reduce erosion
- Reduce pollutants from erosion
- Protect forest
- Protect the park and walking trails



Currently Completed

- ✓ Topographic Survey
- ✓ Forest Stand Delineation
- ✓ Geomorphic Stream Assessment
- ✓ Wetland Assessment
- ✓ Final Design Plans
- ✓ Coordination with State and Federal Agencies
- ✓ Approved Permits Issued
- ✓ Obtained All Easements and Agreements

Existing Conditions
What it looks like now...



Croydon Creek

- Existing dam—over-widened channel, debris jam and rubble
- Steep eroding stream banks
- No floodplain access
- Tight meander bends



SHA Tributary

- Gully channel
- Erosion at culvert pipe
- Steep eroding stream banks
- No floodplain access



Calvin Tributary

- Steep eroding stream banks
- Over-enlarged channel
- No floodplain access



**Proposed Conditions
What it will look like
during construction...**



Examples of construction methods



Tree Protection



Construction Access

Examples of construction methods



Stream Diversion



Staging and Stockpiling

Examples of construction methods

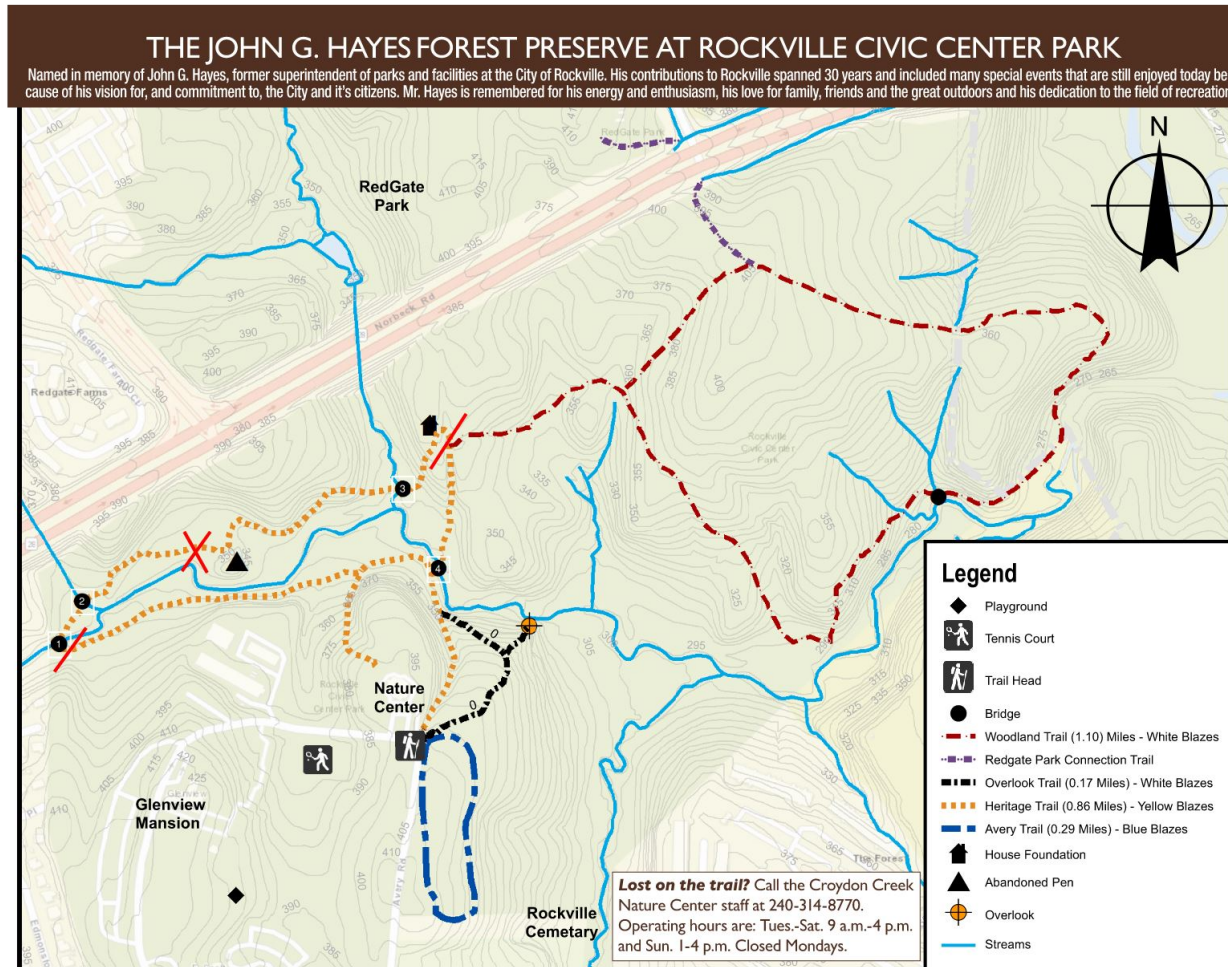


Post Construction



Planting and Landscaping

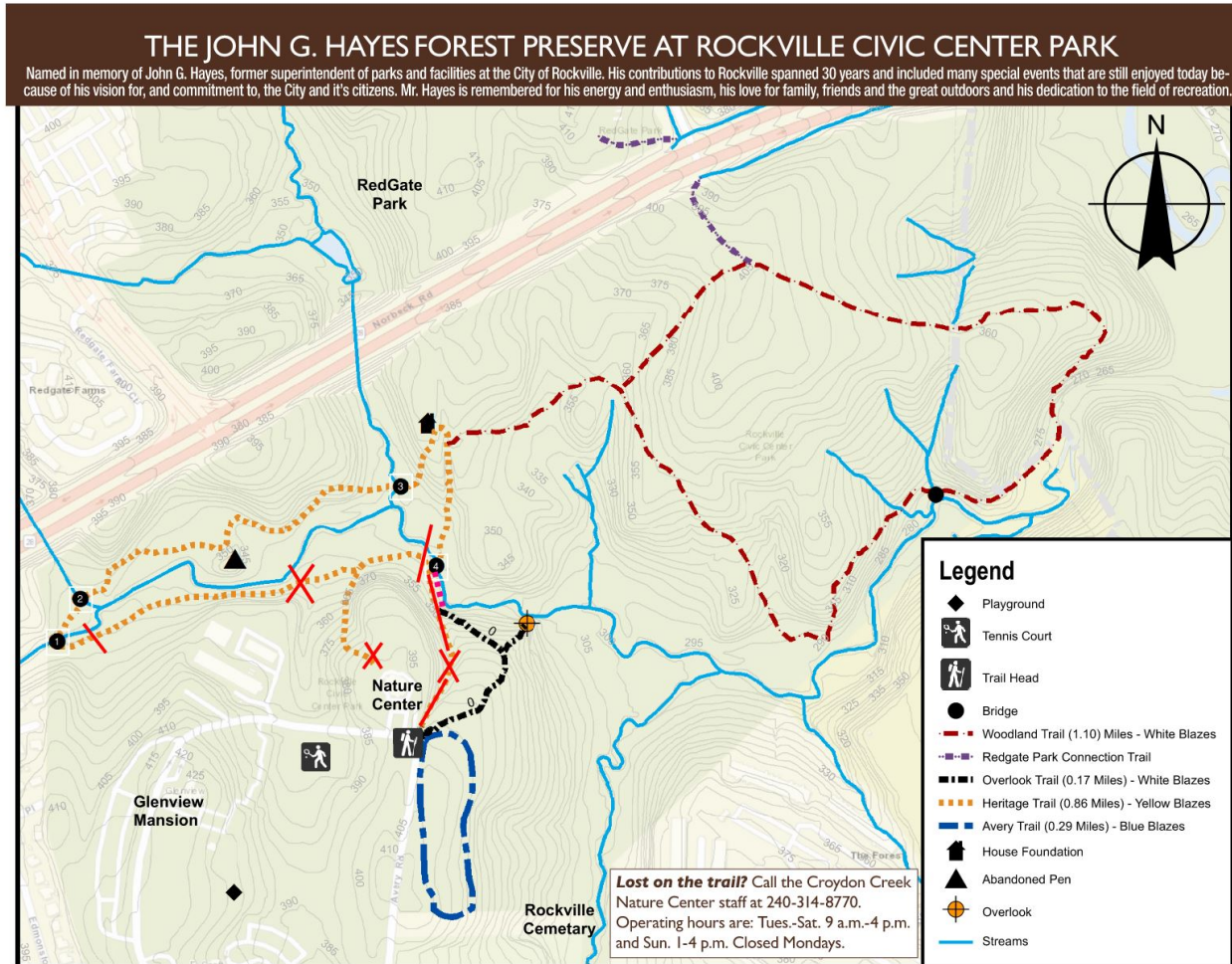
Examples of construction methods



Croydon Creek Nature Center Trails Map

Phase 1 Trail Closures

Examples of construction methods



Croydon Creek Nature Center Trails Map

Phase 2 Trail Closures

**Proposed Conditions
What it will look like after
construction...**



Examples of our techniques



Constructed Riffles

Regenerative Storm Conveyance (RSC)



Examples of our techniques



Bank stabilization/vegetation

Boulder Revetment



Croydon Creek Tributary

- Removal of dam and re-establish natural channel
- Install riffle grade controls
- Protect and establish vegetation



Croydon Creek Tributary

Stabilize and vegetate eroding stream banks - Wrapped Soil Lifts



Croydon Creek Tributary

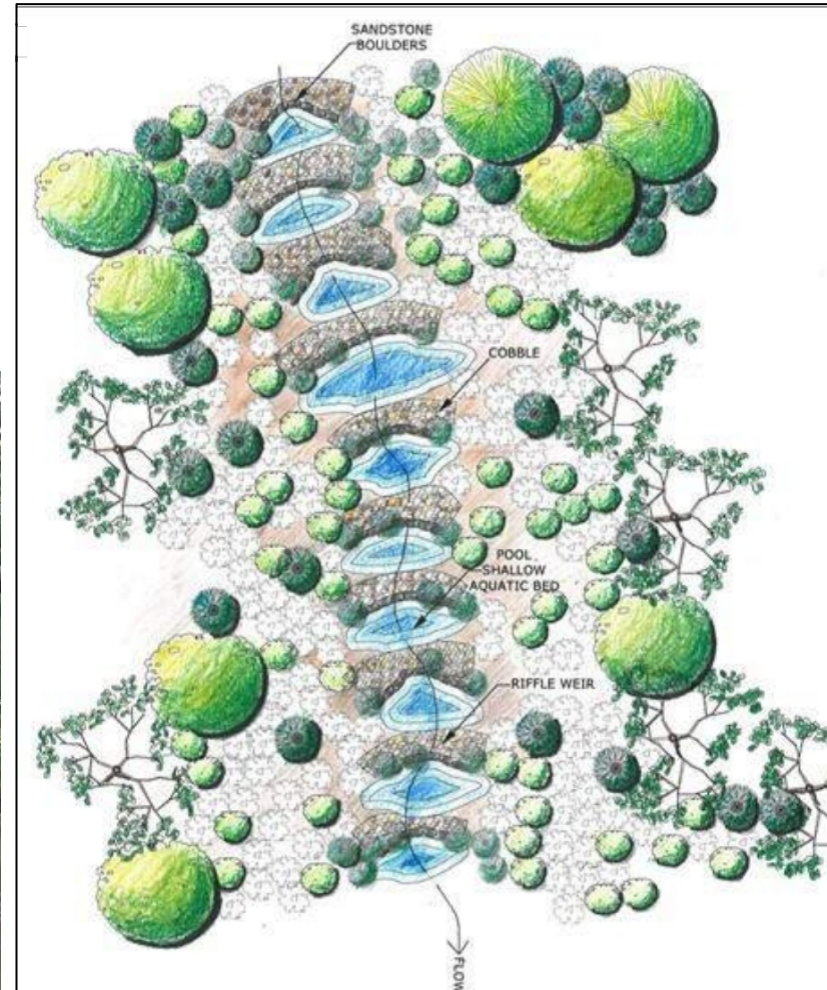
Tie into previous restoration reach



SHA Tributary

Regenerative Storm Conveyance (RSC)

- Riffle steps and pools slow down stream flow
- Reduce bank erosion
- Provide floodplain connection



SHA Tributary

Create **vernal pools** next to stream:
Temporarily wet areas provide habitat
for frogs and other amphibians



Calvin Tributary

- Install riffle weirs
- Requires minimal grading and disturbance
- Minimizes tree loss
- Wrapped soil lifts
- Tie-in to cemetery property



Calvin Tributary

Create vernal pools in old sections of channel:



Timeline



Stream Restoration Project Timeline

- 60% Designs – Fall 2018
- 90% Designs and Community Meeting – Winter 2019
- Final Designs – Spring 2019
- Start of Construction – Summer 2025
- Project Completion – 2026



Approximately \$5.25M for project construction. \$2M State of Maryland Department of Natural Resources Chesapeake and Atlantic Coastal Bays Trust Fund grant in-hand.

A photograph of a small stream flowing over large, moss-covered rocks in a forest. The water is clear and shallow, with some white rapids visible as it flows over the rocks. The surrounding forest is dense with green trees and foliage. The text "Questions?" is overlaid in the upper left corner.

Questions?

Thank You!