

Trillium Site Stream Corridor Restoration Project

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Kathleen Anglo, St. Paul Parks and Recreation

Upper Midwest Stream Restoration
Symposium
March 6, 2012

Presentation Summary

- Background/History
- Project Constraints/Opportunities
- Water Source Analysis
- Stream Design and Design Criteria

Trout Brook Regional Trail
Including Trillium Nature Sanctuary

MASTER PLAN

October 2009

- St. Paul
 - Project History
 - Project Planning
 - Conceptual Design

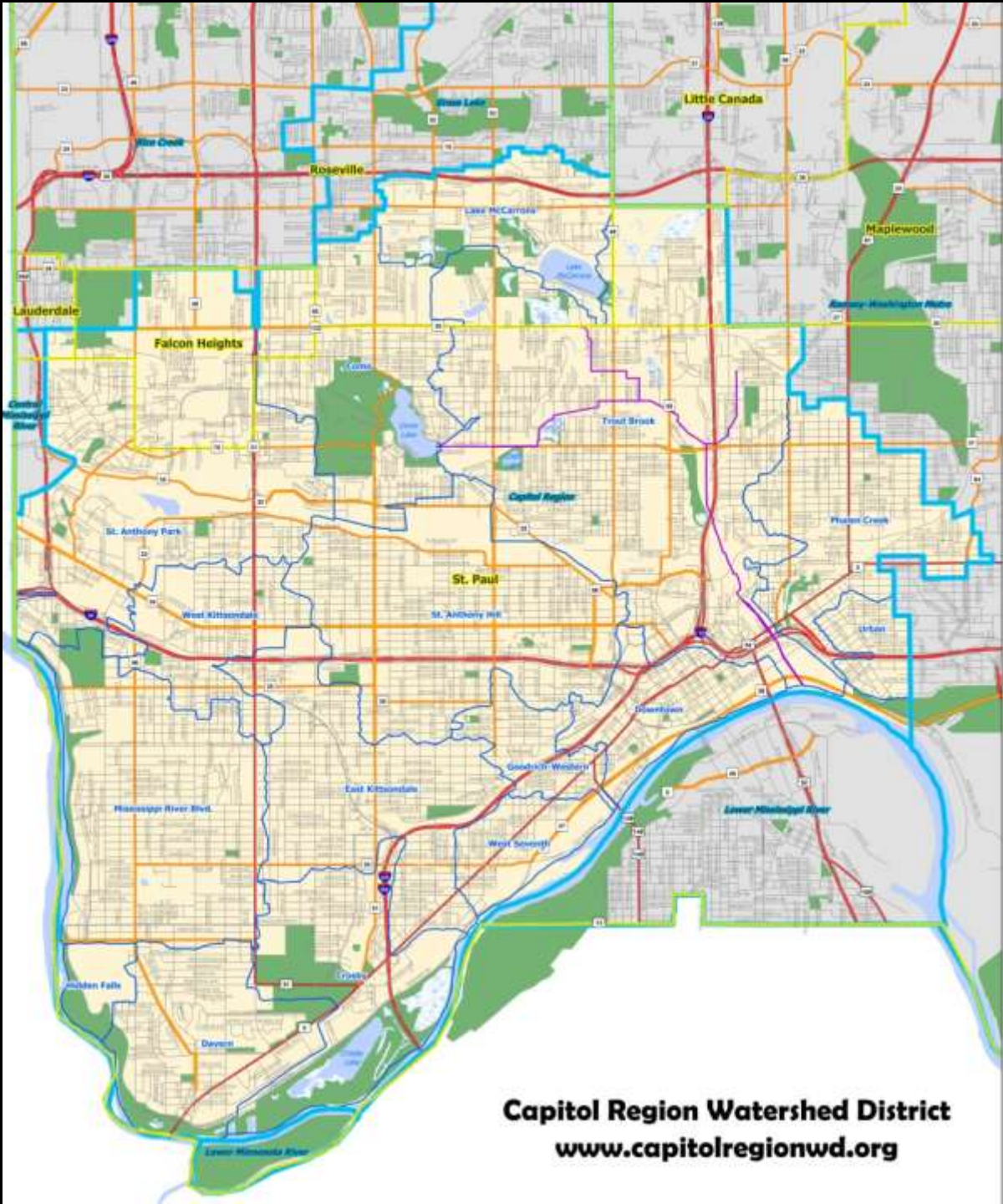


Prepared by the City of Saint Paul
Parks and Recreation Design Section



- COMMUNITIES**
- 1 LOWLAND HARDWOOD
 - 2 OAK SAVANNA
 - 3 BIG WOODS
 - 4 MAPLE/BASSWOOD
 - 5 MESIC PRAIRIE
 - 6 WET PRAIRIE
 - 7 LOWLAND FOREST
 - 8 OAK WOODLAND

ER PLAN
M NATURE SANCTUARY
 NT PAUL PARKS AND RECREATION DESIGN SECTION



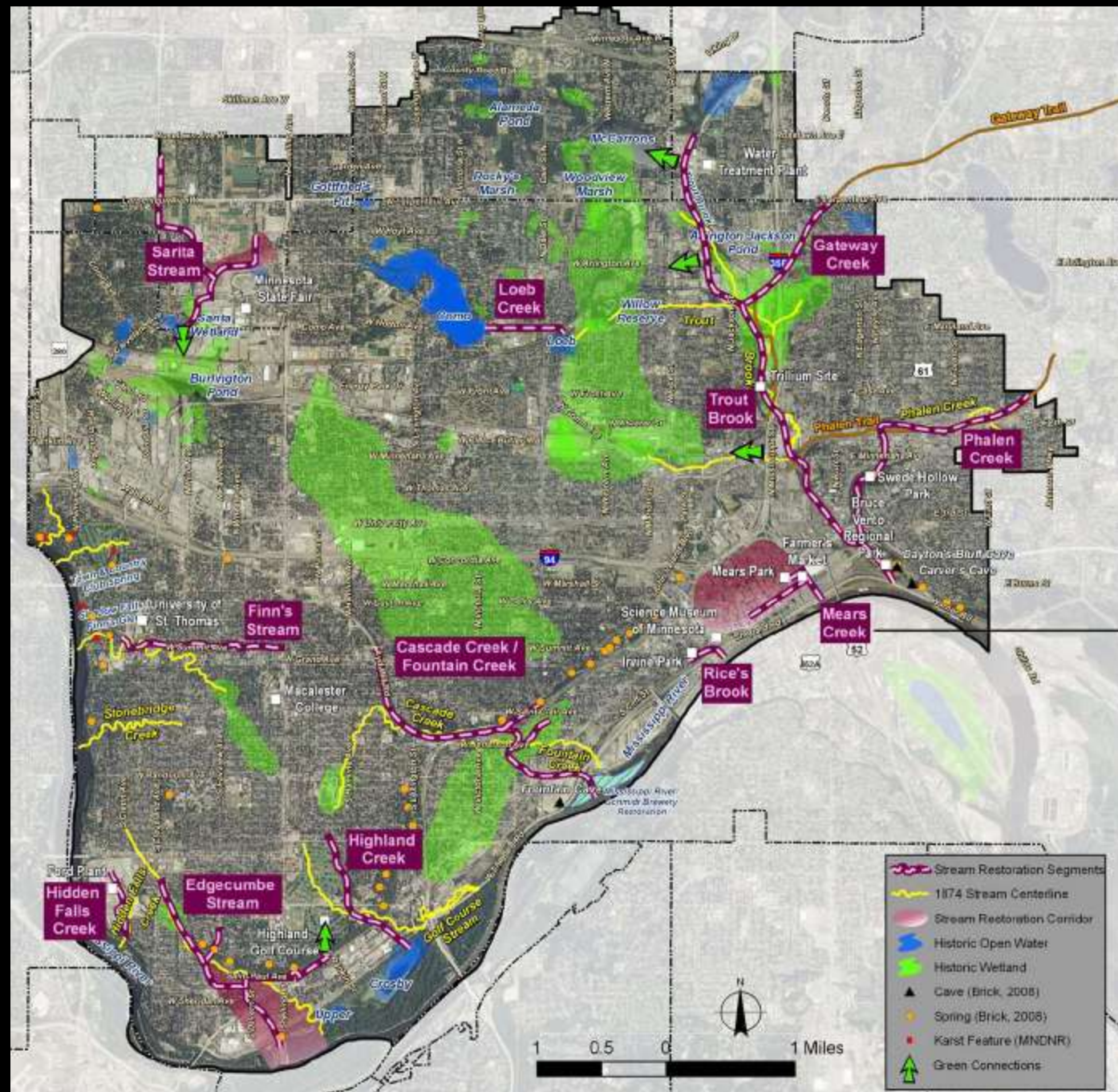
- Capitol Region WD
 - 250,000 people
 - Special unit of local government
 - Protect and improve the Lakes and Mississippi River

Capitol Region Watershed District
www.capitolregionwd.org



Bring Water Back To St. Paul

CRWD Stream Corridor Restoration Plan, 2010

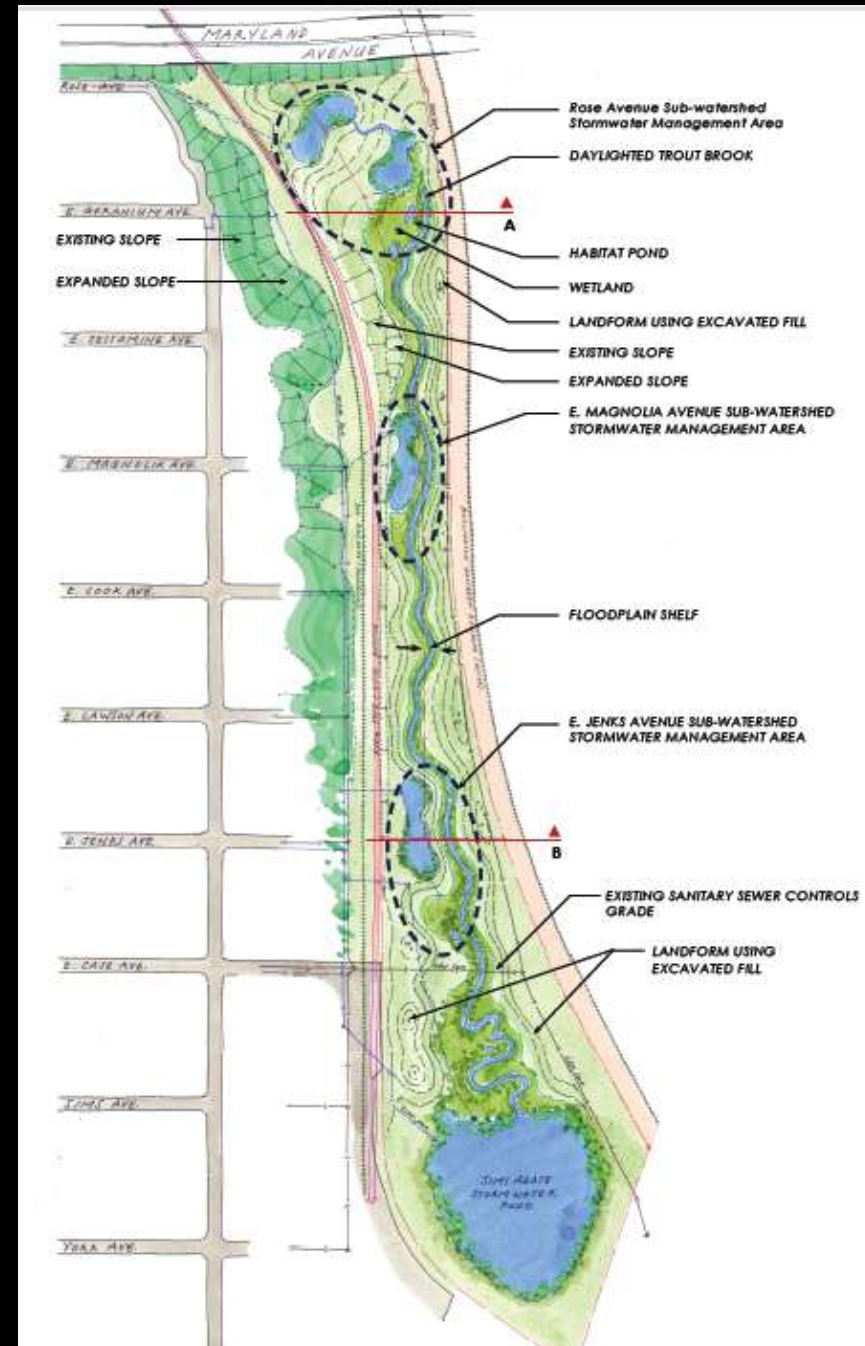




- Trout Brook
 - 1800s—6-12' channel
 - 1880s—1920s- 8-20' storm tunnel

Overview

- Feasibility Study
 - Design Criteria development
 - Preferred Sources of Water
 - Water Feature Sizing/Siting
- InterFluve and HR Green



Design Process

- Kickoff – April 2011
- 15 meetings of stakeholders
 - Met Council, MNDOT, Ramsey County, Neighborhood Groups, MPCA, City of St. Paul
- Finalize Preliminary Design March 2012



Site Constraints

- Existing Topography
- Soil Contamination
- Railroad
- Existing Utilities
- Upstream/Downstream Connectivity







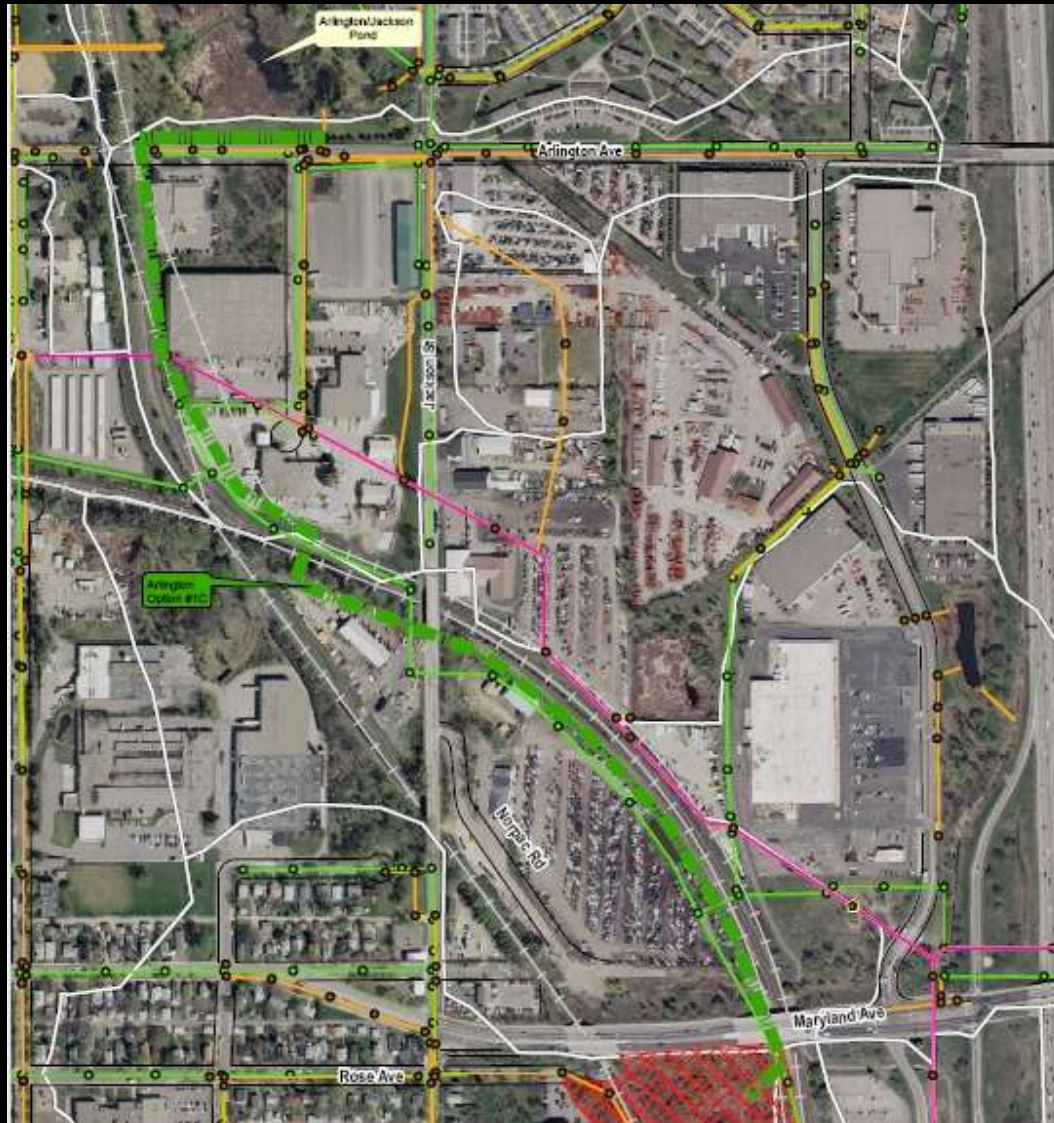




Water Sources Analyzed



Proposed Baseflow Source



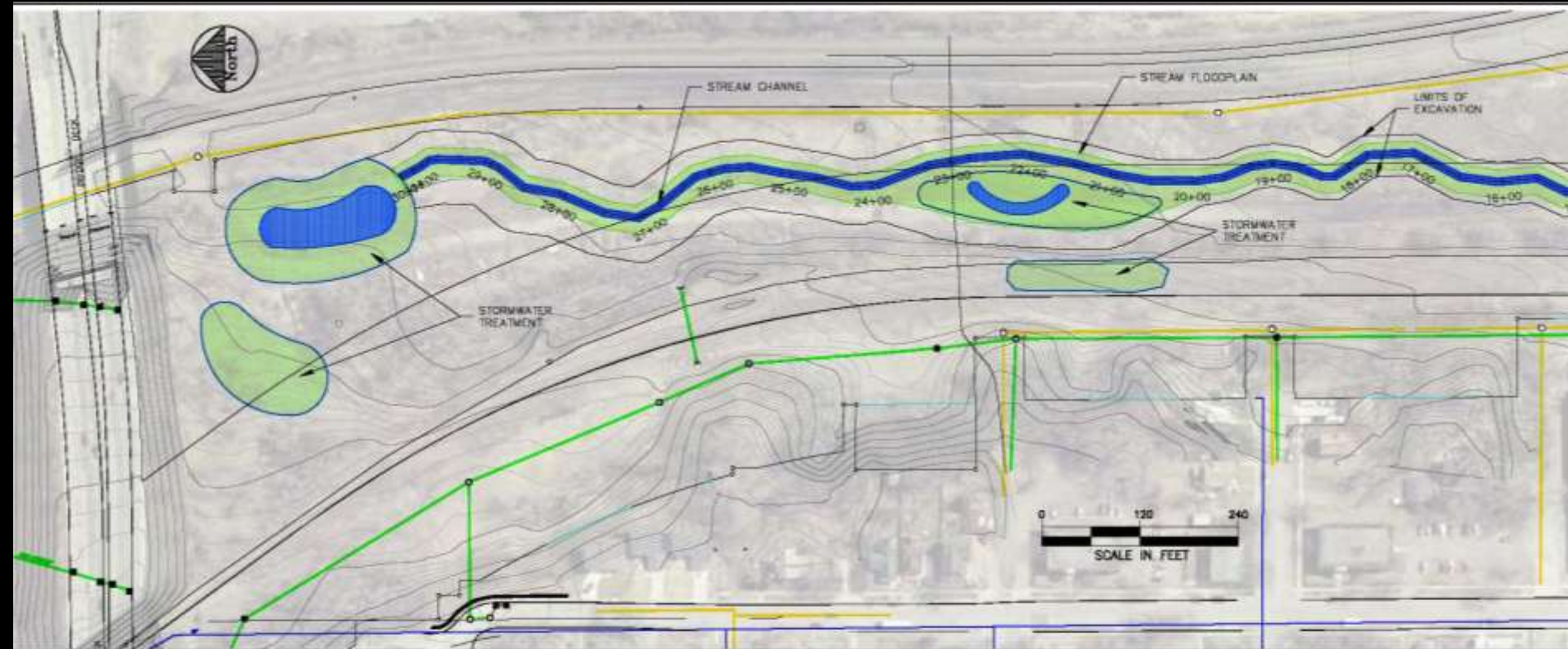
- Continuous flow
- Good water quality during low flow
- Low maintenance

Proposed Stormwater Source

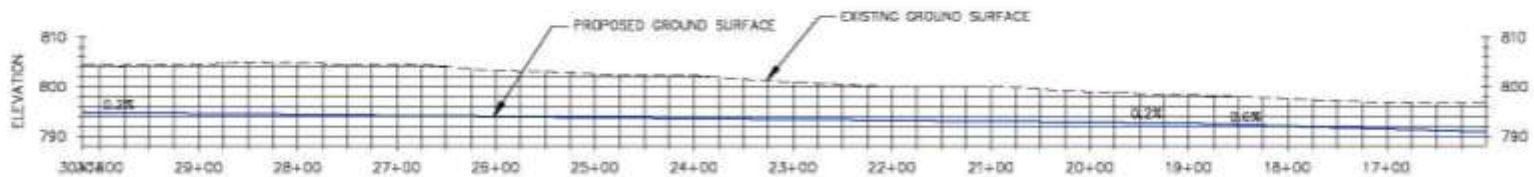


- Higher stream flow during wet seasons
- Better water quality during storm flows
- Treatment of stormwater

Site Plan and Profile

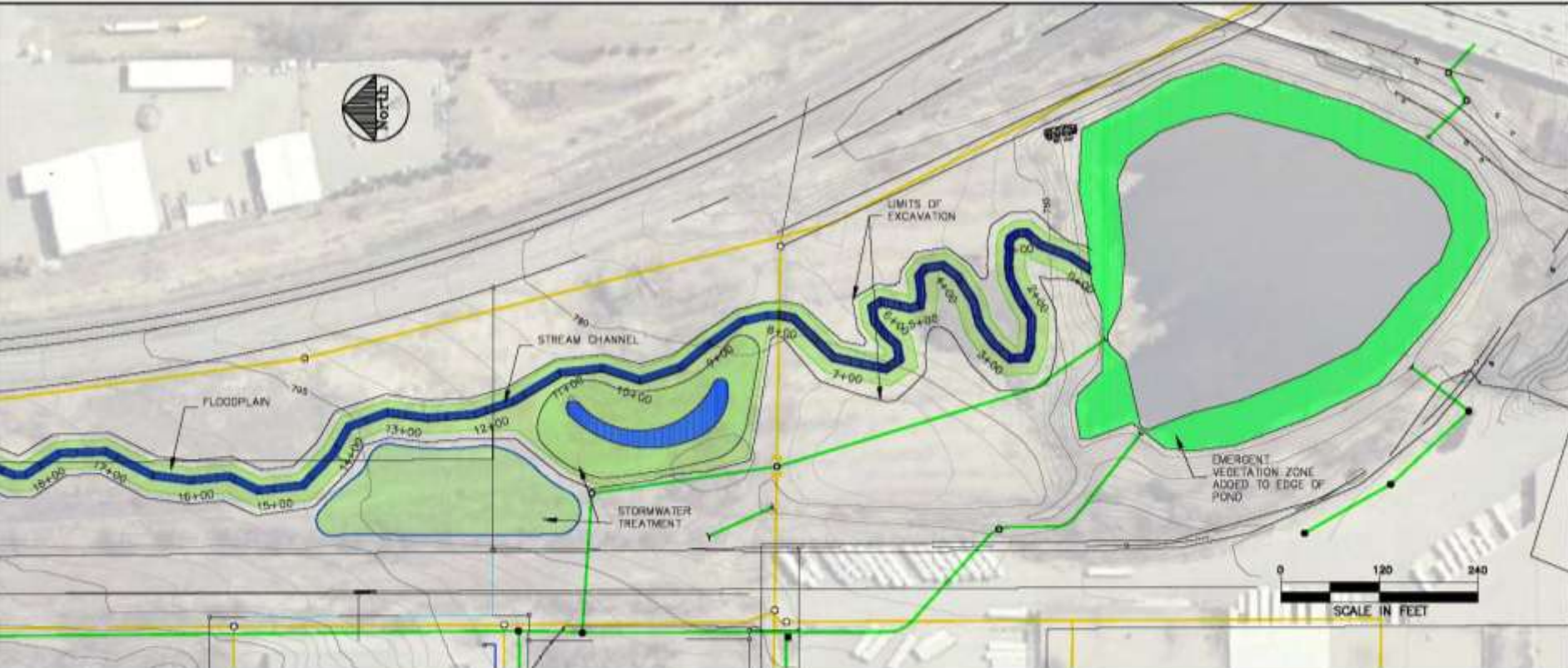


PLAN VIEW

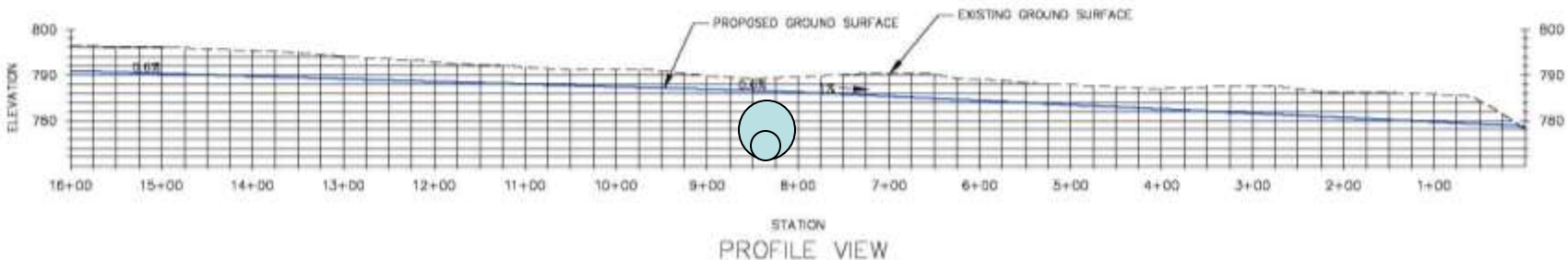


PROFILE VIEW

Site Plan and Profile

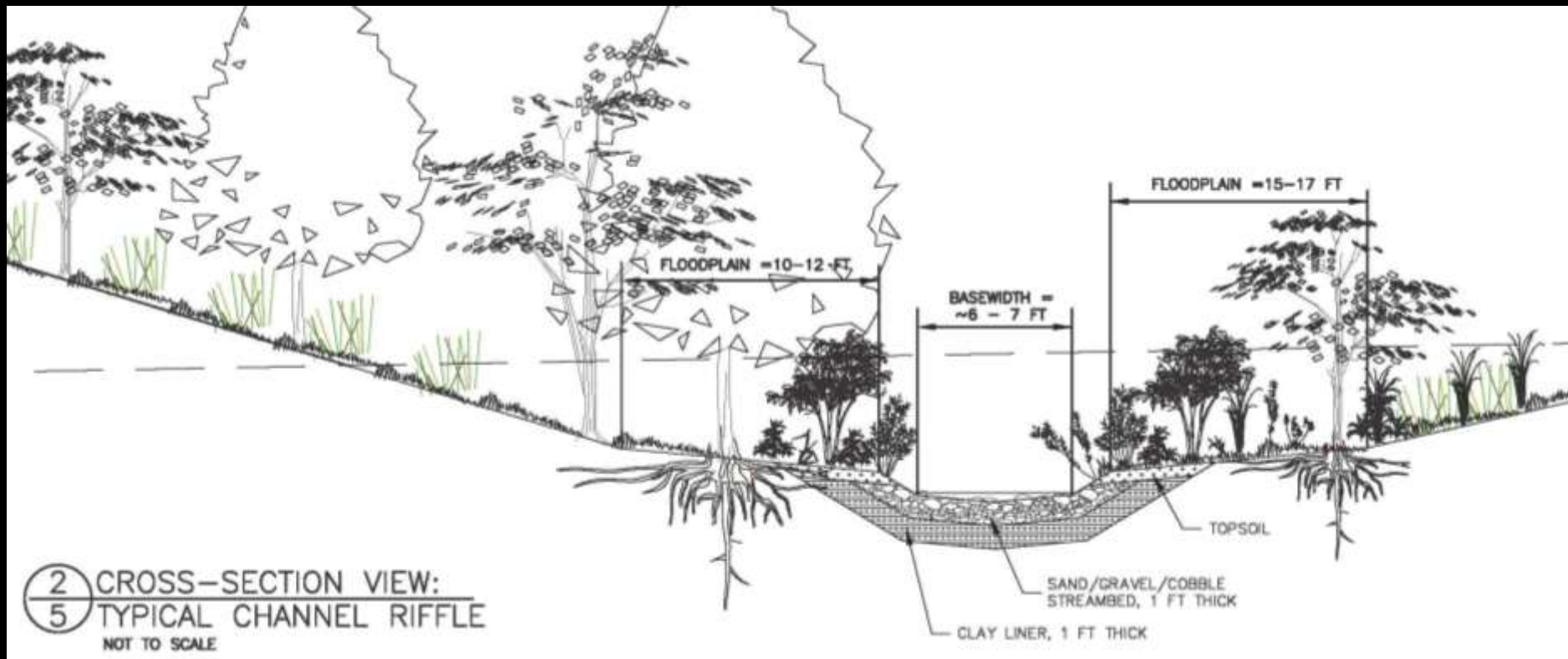


PLAN VIEW

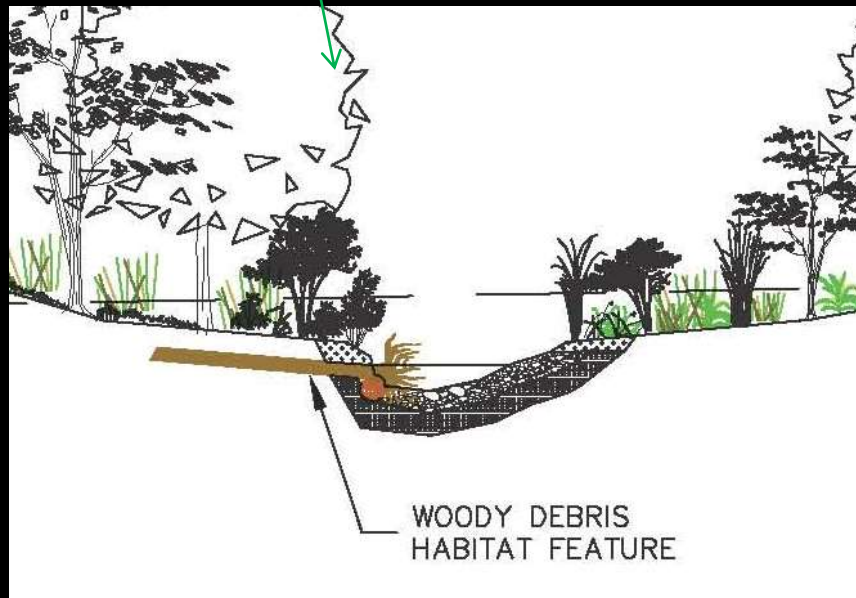
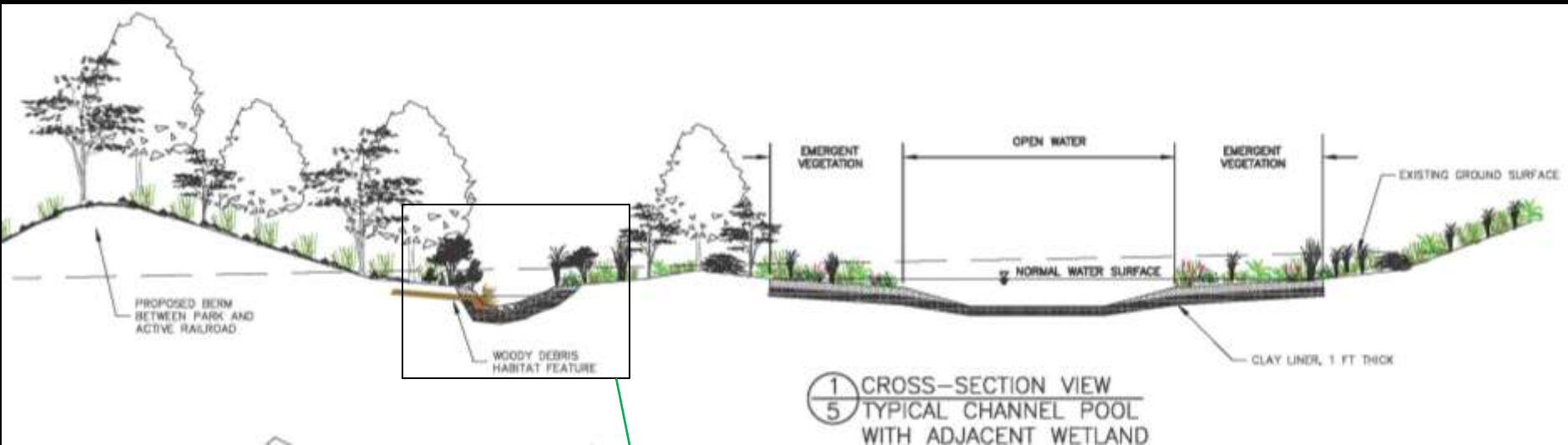


PROFILE VIEW

Stream Geometry – Cross Section



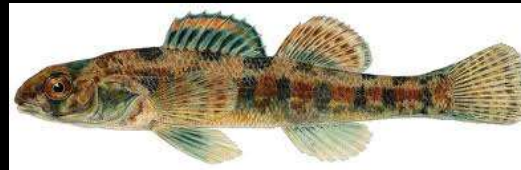
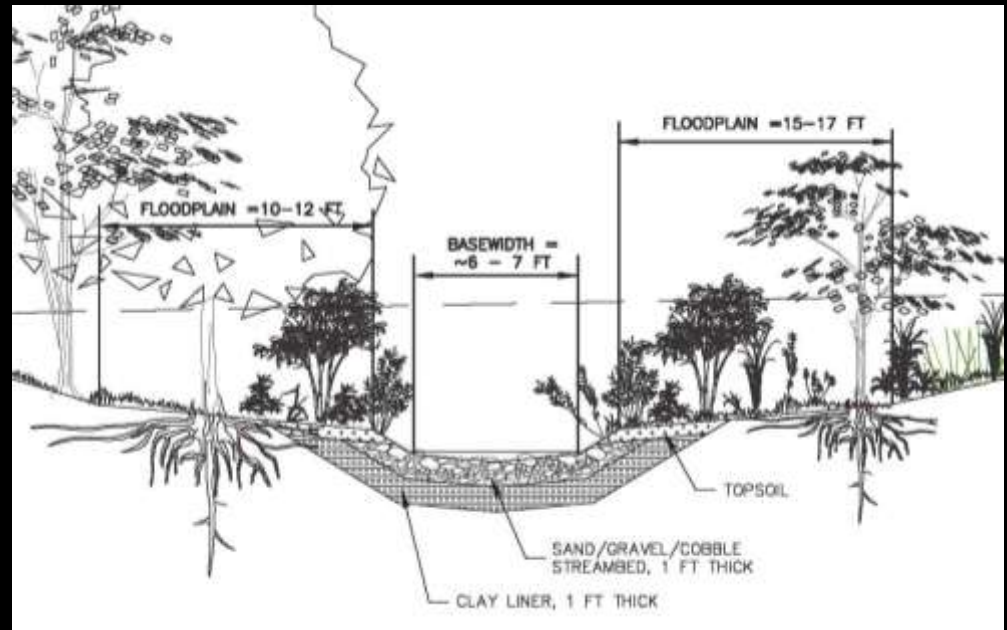
Stream Geometry – Cross Section



Design Criteria

Stream Ecology

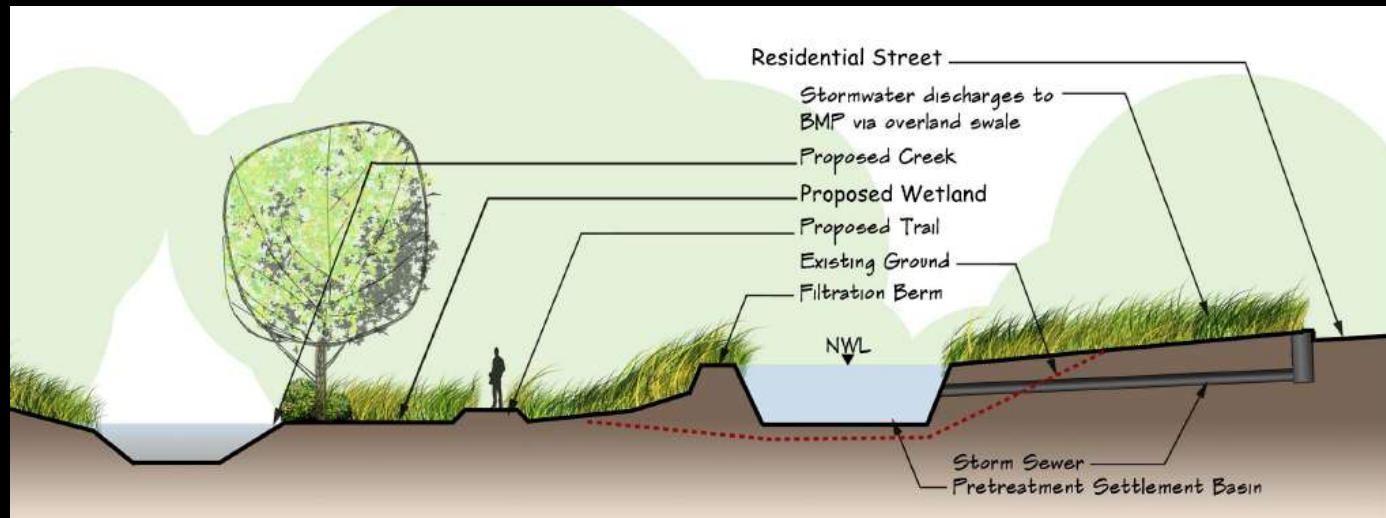
- Natural Aesthetic and Function
 - Geometry (1.1)
 - Hydrology (1.2)
- Supports aquatic life
 - Good water quality (2.1)
 - Aquatic community potential defined (2.2)
- Consistent with vision for expansion
 - Geometry (3.1)
 - Flow capacity (3.2)



Design Criteria

Stormwater Management

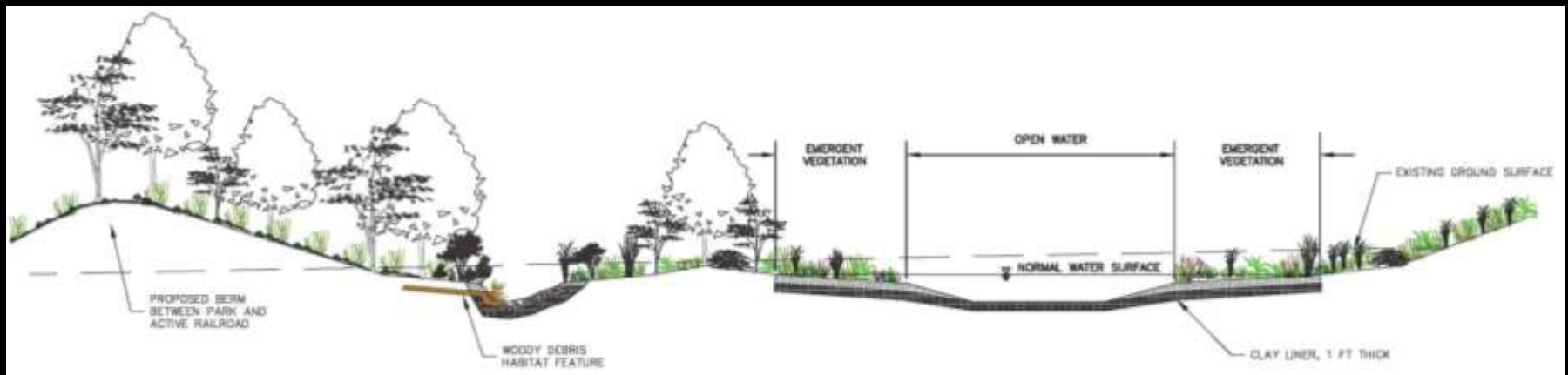
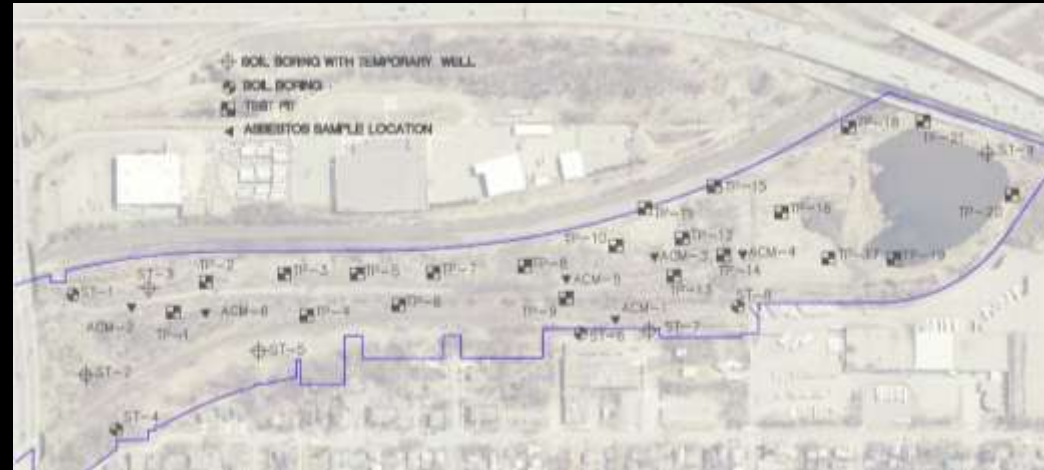
- Treat stormwater from neighborhood (4.1)
- Utilize stormwater as water source for stream (5.1)
- Maintain existing storm sewers to convey large flows (5.2)
- Minimize risk of erosion (6.1)



Design Criteria

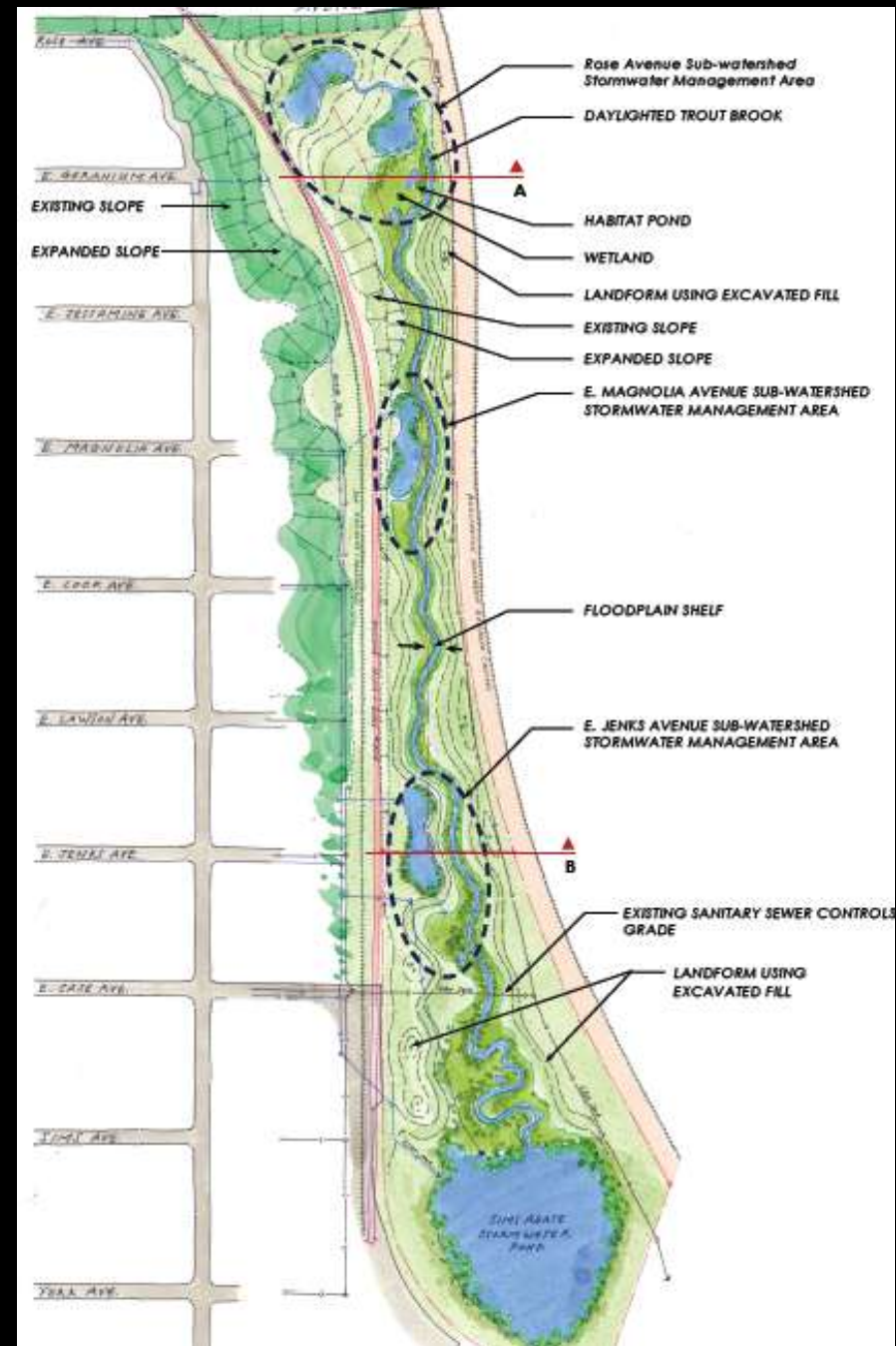
Wetland and Upland Ecology

- Diversity - vegetation communities and fish and wildlife (7.1)
- Compatible with soil remediation (8.1)
- Vegetation communities compatible with vision for long term expansion (9.1)

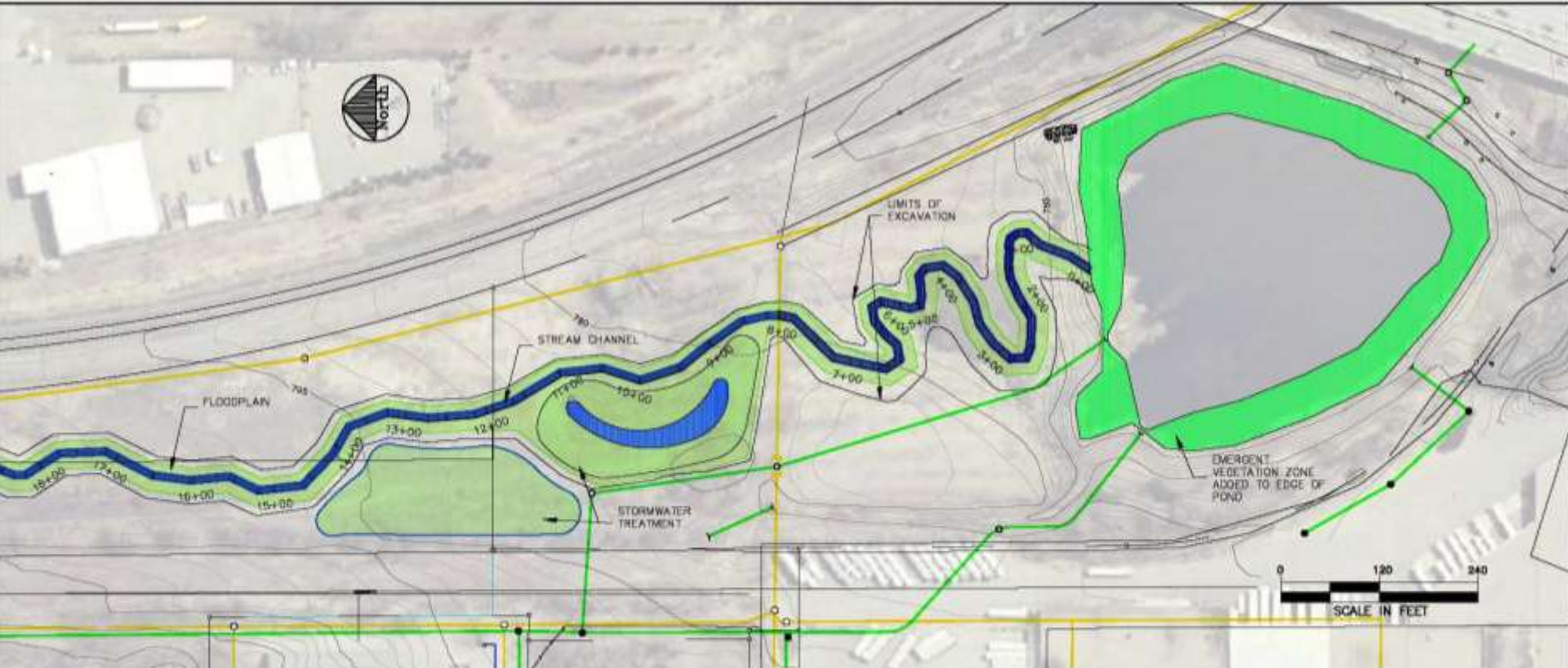


Design Criteria Education, Recreation, and Aesthetics

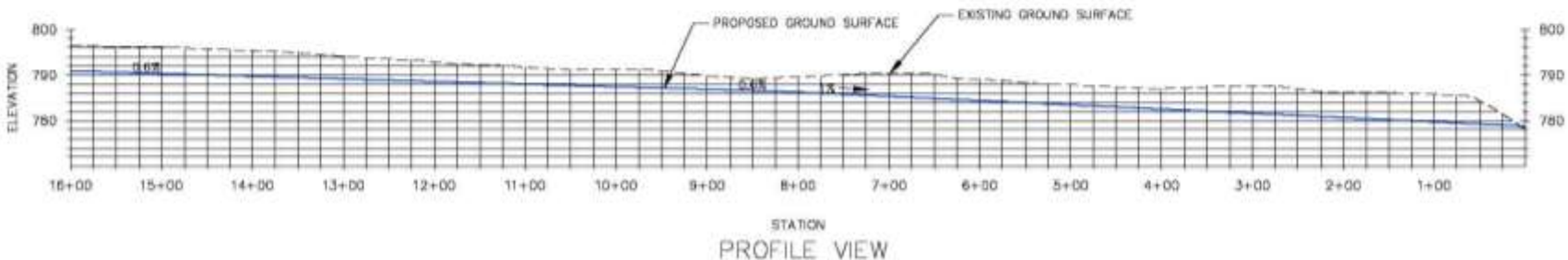
- Bike path (10.1)
- Viewscapes (11.1)
- Screen railroad (11.2)
- Access to water features (12.1)
- Minimize mosquitoes
 - Maximize duration of flowing water (13.1)
 - Provide suitable habitat for mosquito predators (13.2)



Site Plan and Profile



PLAN VIEW



PROFILE VIEW

Design Criteria

Operations and Maintenance, General

- O&M included in alternatives analysis (14.1)
- Access suitable for maintenance (15.1)
- Model for multi-partner cooperation (16.1)
- MPCA regulatory implications of new stream documented (17.1)



Costs

Trillium Site Feasibility Study 30% Design Level Costs

Description	Capital Cost	Easement Cost	Annual O&M
Gravity Drain from Arlington Jackson	\$950,000	\$320,000	\$11,000
Stream Construction	\$460,000	-	-
Stormwater Management	\$340,000	-	\$7,500
TOTAL	\$1,750,000	\$320,000	\$18,500

** Does not include engineering or items associated with park development, such as erosion control, clearing, planting, costs associated with contaminated sediment, etc.

Construction Schedule

7. Schedule

The preliminary schedule for completing design and construction of the Trillium Nature Sanctuary site is as follows:

Begin final analysis and design	February 2012
Submit 60% plans for permitting	September 2012
Complete final construction documents	December 2012
Construction bidding	January 2013
Award construction contract	February 2013
Begin construction	April 2013

Questions?

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