



City of Ann Arbor

Barton Intake and Raw Watermain Replacement Project

May 16, 2017

Project Description:

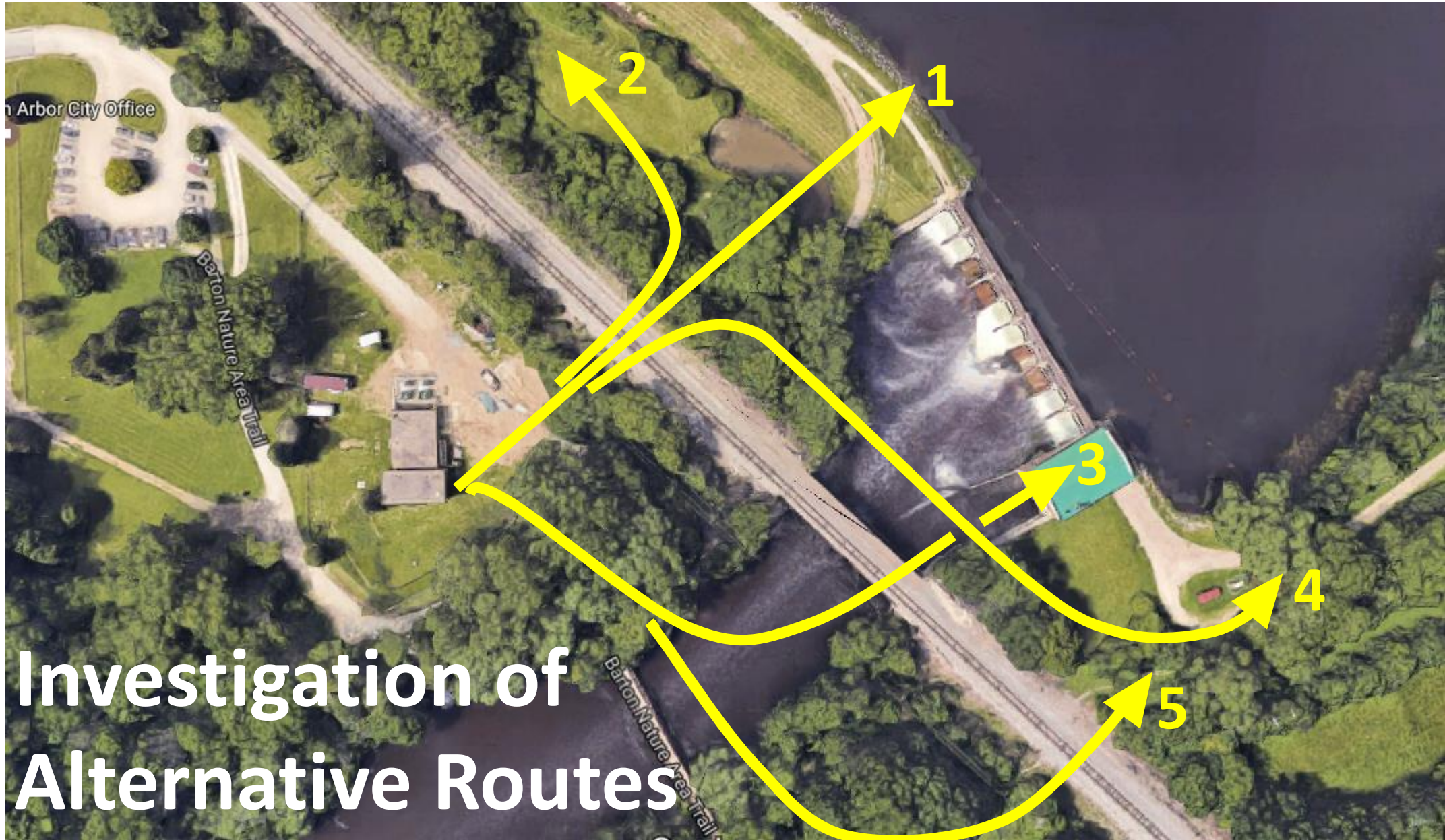
Replace the 20” Raw Watermain and Intake Structure from Barton Pond, serving as one of the raw water supplies for the Water Treatment Plant (WTP).

Determination of Need:

- Is a high-ranked CIP critical infrastructure project
- Provides raw water suction supply to the Barton Pump Station and WTP
- Is currently undersized to meet the demands of the City
- Has segments that are over 100 years old.
- Recent problems with leaking joints and maintenance issues

Overview of Project Site





Investigation of Alternative Routes

Investigation of Alternative Routes

Route 1

Shortest route

Disturbance to embankment and foundation

Potential impact to embankment stability and dam safety

Significant regulatory (FERC/FEMA) requirements for passage through a regulated embankment

Disturbance to trail system

Route 2

Avoids regulated embankment

Least disturbance to trail system

Longest route (>3x)

Potential water quality impacts

Significant disturbance in Barton Pond

Increased long term maintenance

Investigation of Alternative Routes

Route 3

Avoids embankments and railroad crossing

Utilizes existing Powerhouse for improved accessibility to piping

Reliant upon existing 100-year old structure.

Reduced redundancy

Increased vulnerability

Disturbance to trail system

Route 4

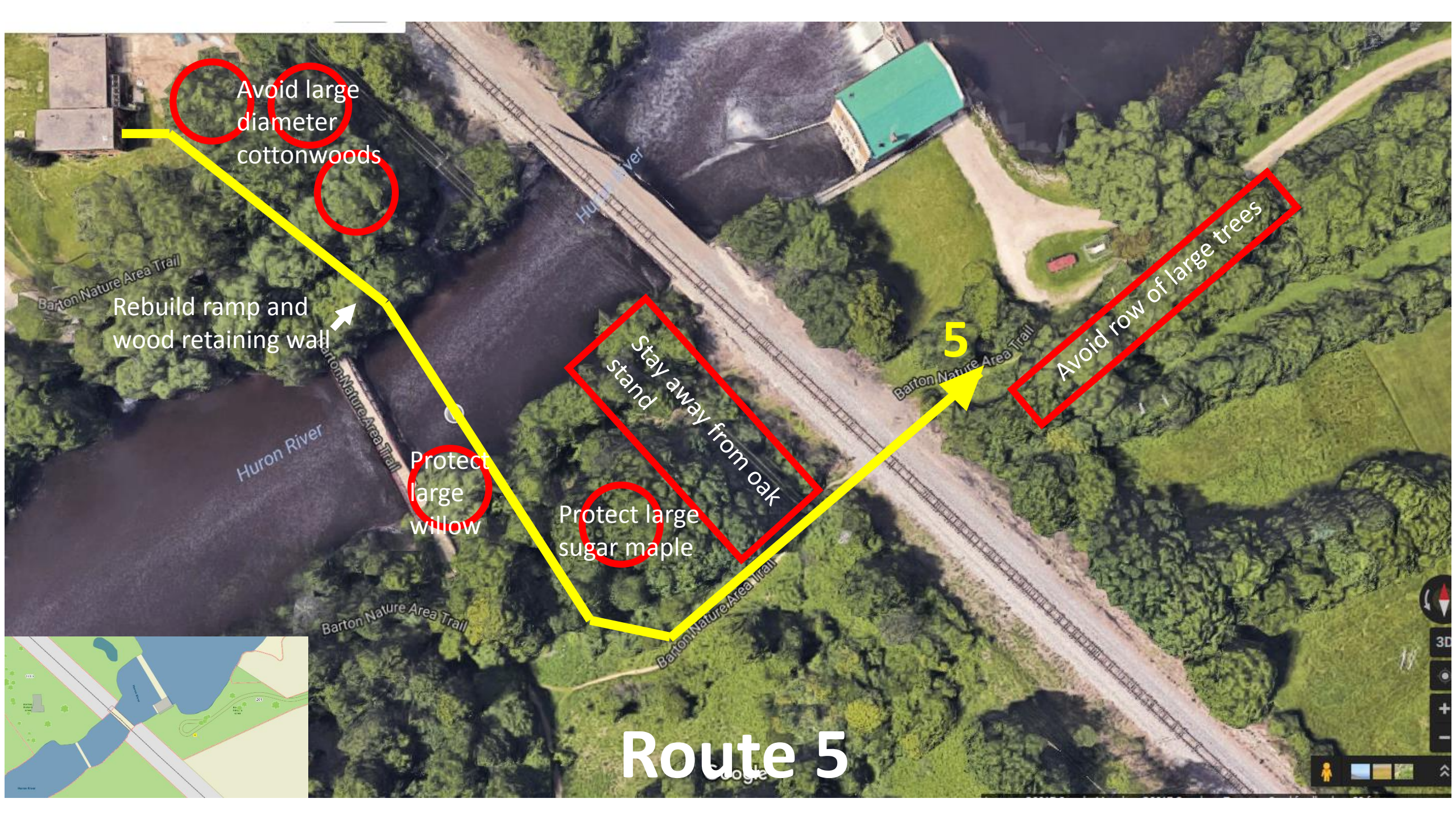
Does not completely avoid the regulated embankment

Complex construction efforts

Construction impacts structural components of tailrace

Possible piles could prohibit construction

Disturbance to trail system



Avoid large diameter cottonwoods

Rebuild ramp and wood retaining wall

Protect large willow

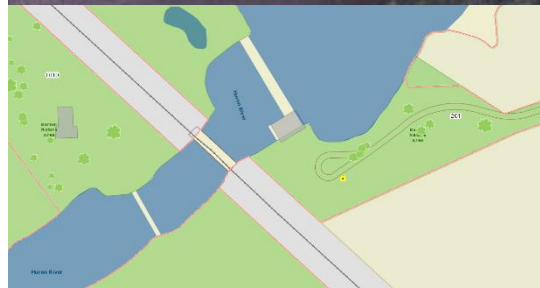
Protect large sugar maple

Stay away from oak stand

Avoid row of large trees

5

Route 5



Investigation of Alternative Routes

Route 5

Avoids left embankment

Lowest construction risk

Lowest long term risk to the stability of the dam/embankment

Disturbance to trail system and Preserve

Barton Priority Areas



0 250 500 750 1,000 Feet

Natural Area Preservation, City of Ann Arbor
2012 Aerial Imagery
Created June, 2015



Alternative - Route through Barton Nature Preserve



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Project Details

Schedule

- Design: Complete 2017
- Construction: Dependent upon available funding
Currently Budgeted in FY 21-22

Construction Duration

- Approx. 18 month total project.
- Impact to preserve approx. 8 – 12 months

Impact to Nature Preserve

- Main trail and pedestrian bridge to remain open
- Safety fencing and barricades for pedestrian safety
- Trenchless construction techniques being investigated
 - Large bore pits still required
 - Complete restoration however route to remain clear of trees

Summary

Route through Barton Nature Preserve

Replaces critical infrastructure that has exceeded its typical service life

Results in the lowest construction risk

Results in the lowest long term risk to the stability of the dam/embankment

Effort to minimize impact to Preserve and trail system

Effort to minimize disturbance to vegetation and trees