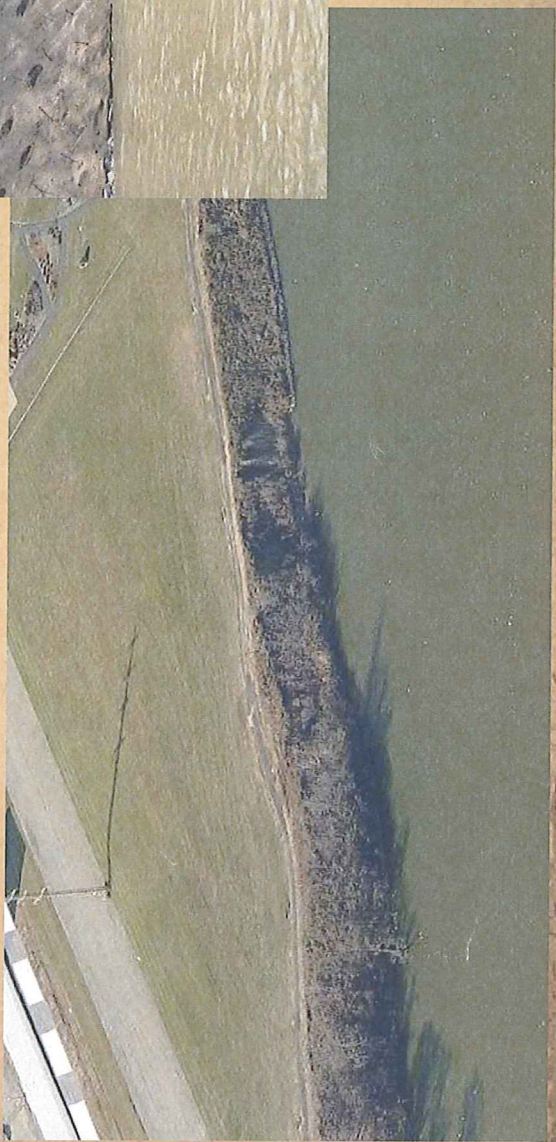


Black River Landing and Heron Rookery Habitat Restoration Project

Project Kickoff Meeting
January 23, 2015



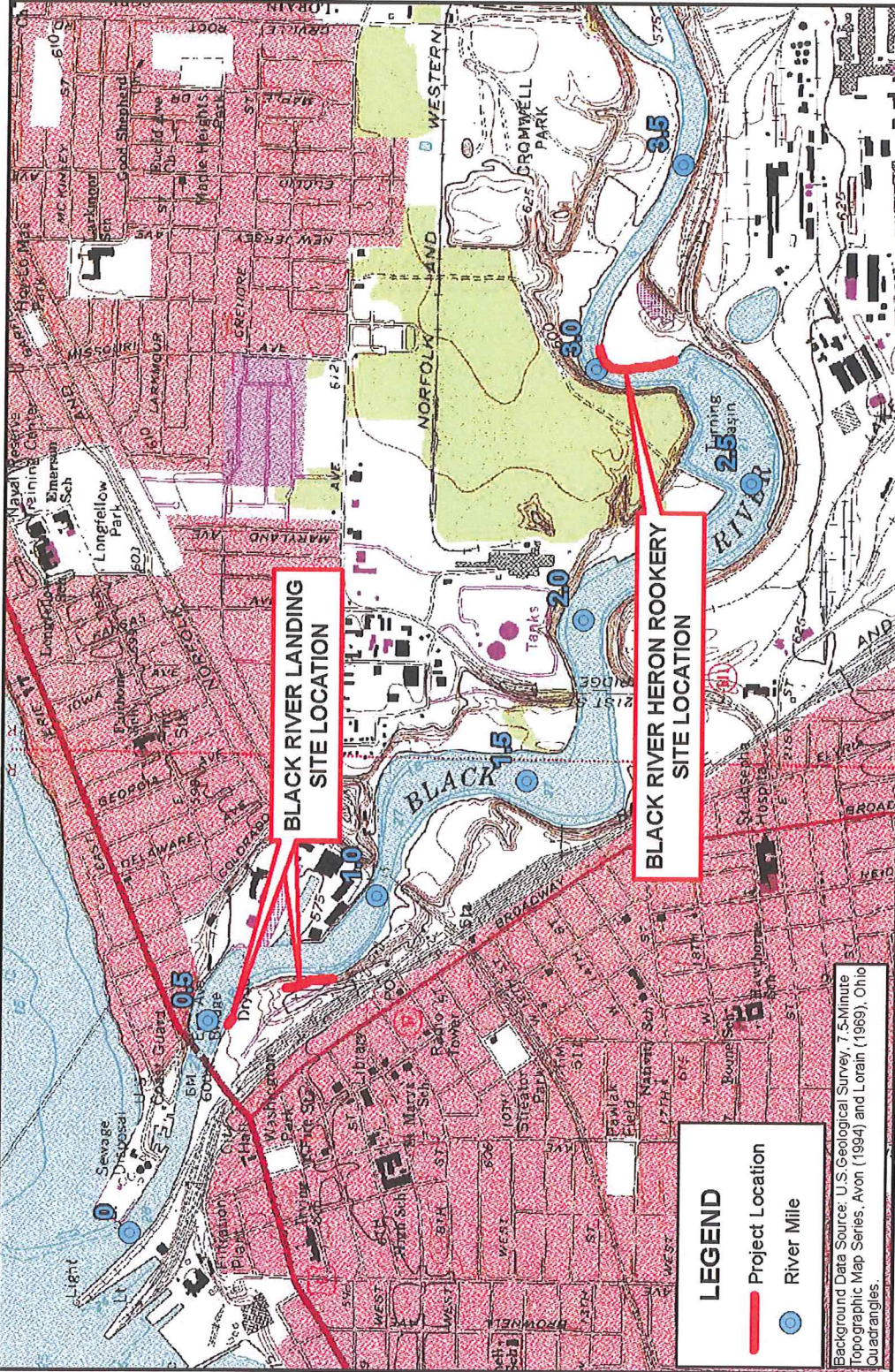
Today's Agenda

- Project Overview
- Typical Improvement Details
- Coldwater Scope-of-Work
- Anticipated Permit Conditions
- Draft Schedule
- Input and Reviews from City and Port Authority

Project Overview

- Funded by NOAA Great Lakes Habitat Restoration Program
- Continuation of previous Black River restoration improvements (funded by NOAA, USFW, Ohio EPA, ODNR)
- Ecological and recreation benefits:
 - advance delisting of habitat and non-habitat BUIs
 - advance delisting of Black River AOC
 - improve L-QHEI and L-IBI scores
- Construction Budget - \$1,017,761
- Project duration: November 2014 through October 2016
- Bank stabilization, habitat restoration, and riparian restoration in two areas:
 - between RM 0.5 and 0.8 (Black River Landing)
 - between RM 2.8 and 3.1 (Heron Rookery)

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LEGEND

- Project Location
- River Mile

Background Data Source: U.S. Geological Survey, 7.5-Minute Topographic Map Series, Avon (1994) and Lorain (1969), Ohio Quadrangles.



BLACK RIVER LANDING AND HERON ROOKERY RESTORATION

CITY OF LORAIN, OHIO

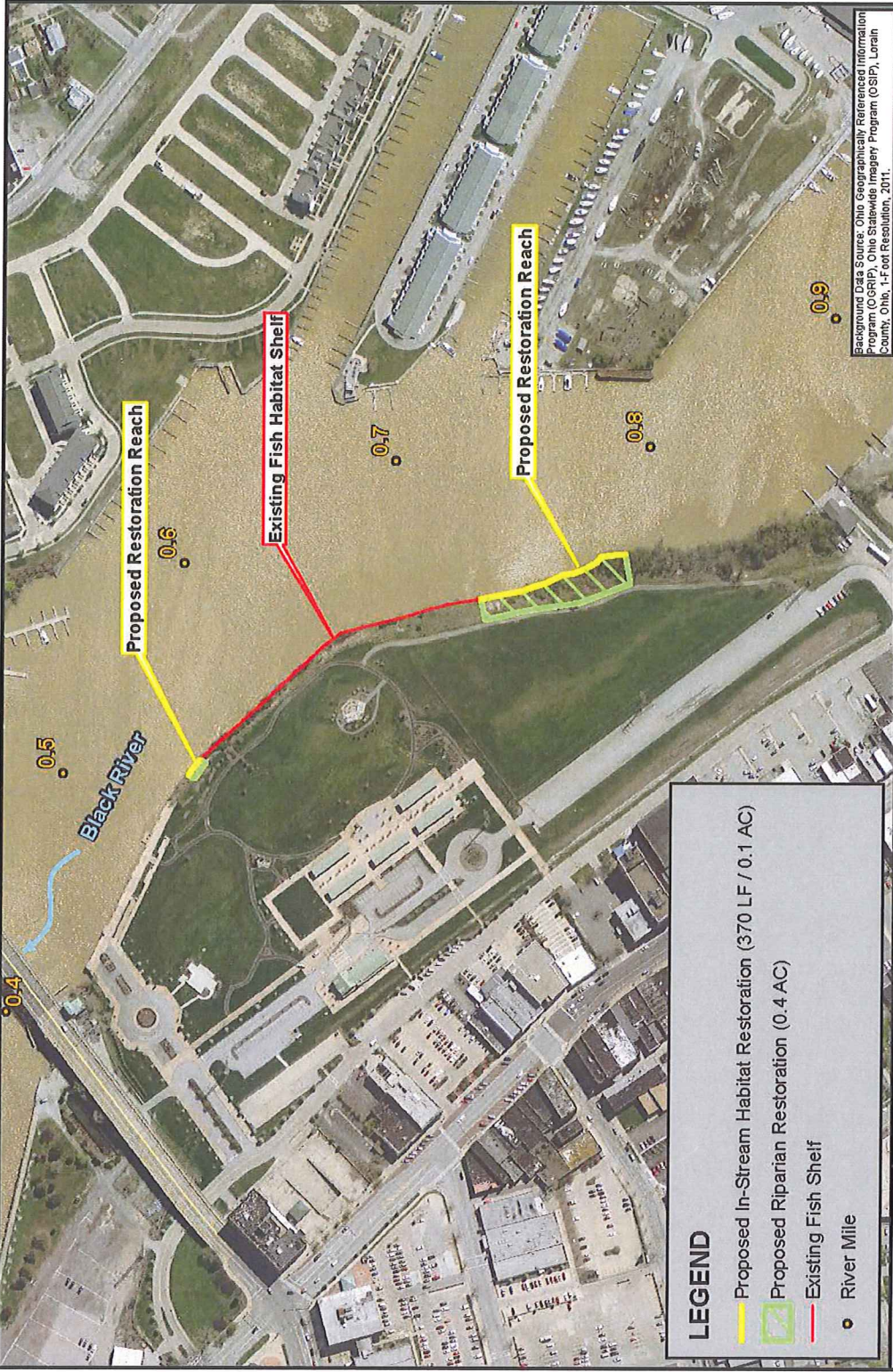
SITE LOCATION MAP

FEBRUARY 2014

FIGURE 1

0 750 1,500 Feet

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Background Data Source: Ohio Geographically Referenced Information Program (GRIP), Ohio Statewide Imagery Program (OSIP), Lorain County, Ohio, 1:4000 Resolution, 2011.

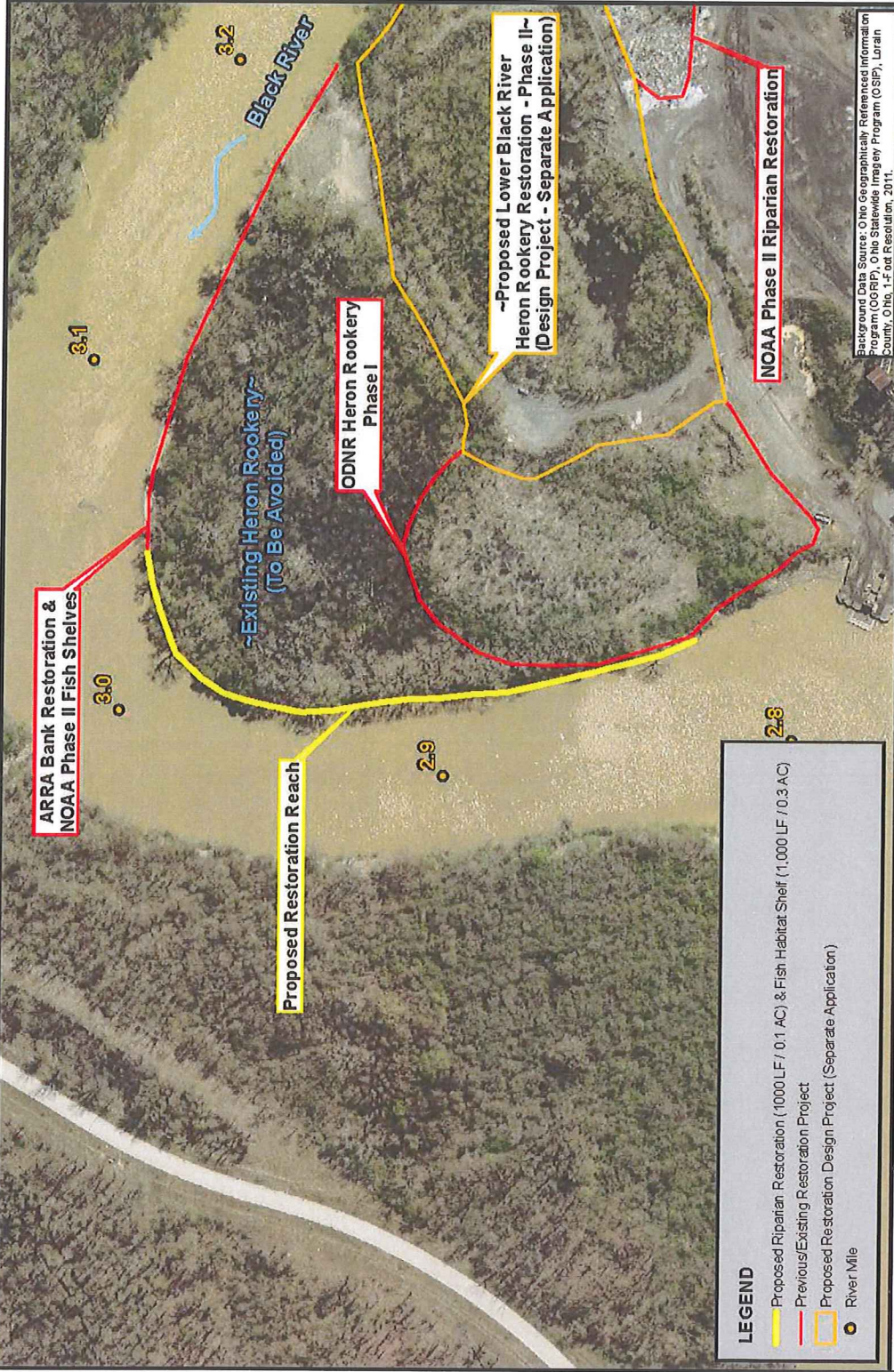
FEBRUARY 2013
FIGURE 3
0 150 300 Feet

BLACK RIVER LANDING
EXISTING AND
PROPOSED CONDITIONS

BLACK RIVER LANDING AND HERON
ROOKERY RESTORATION
CITY OF LORAIN



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LEGEND

- Proposed Riparian Restoration (1000 LF / 0.1 AC) & Fish Habitat Shelf (1,000 LF / 0.3 AC)
- Previous/Existing Restoration Project
- Proposed Restoration Design Project (Separate Application)
- River Mile



BLACK RIVER LANDING AND HERON ROOKERY RESTORATION
CITY OF LORAIN

BLACK RIVER HERON ROOKERY EXISTING AND PROPOSED CONDITIONS

FEBRUARY 2013
FIGURE 4
 0 100 200 Feet

Background Data Source: Ohio Geographically Referenced Information Program (GRIP), Ohio Statewide Invasive Program (OSIP), Lorain County, Ohio, 1:4 foot Resolution, 2011.

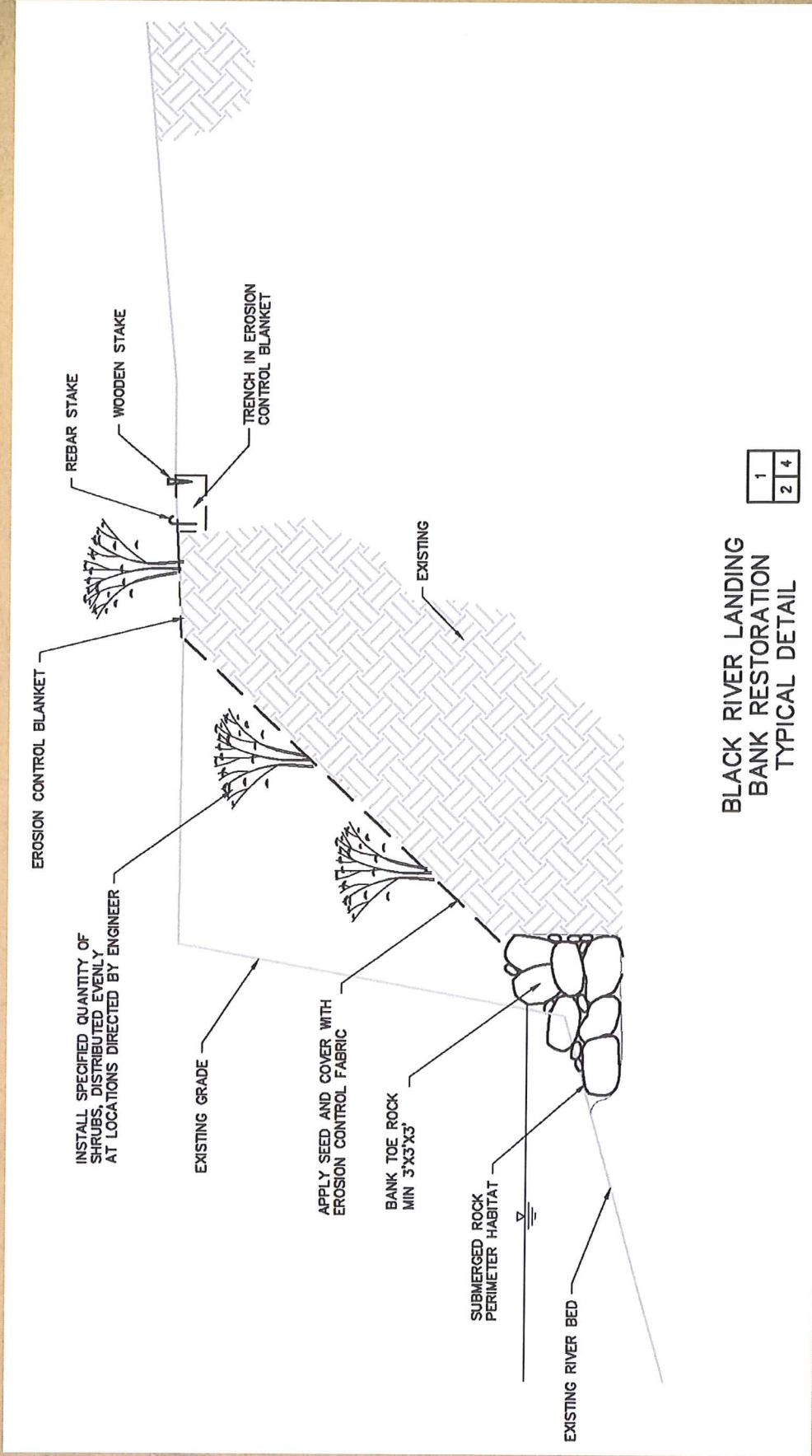
Typical Improvement Details

Bank Stabilization and Riparian Restoration

- Rock toe and bank grading (final slope of 3:1)
- Installation of shrubs, erosion control blanket, and native seeding
- Reduced erosion and improved aquatic habitat

Typical Improvement Details

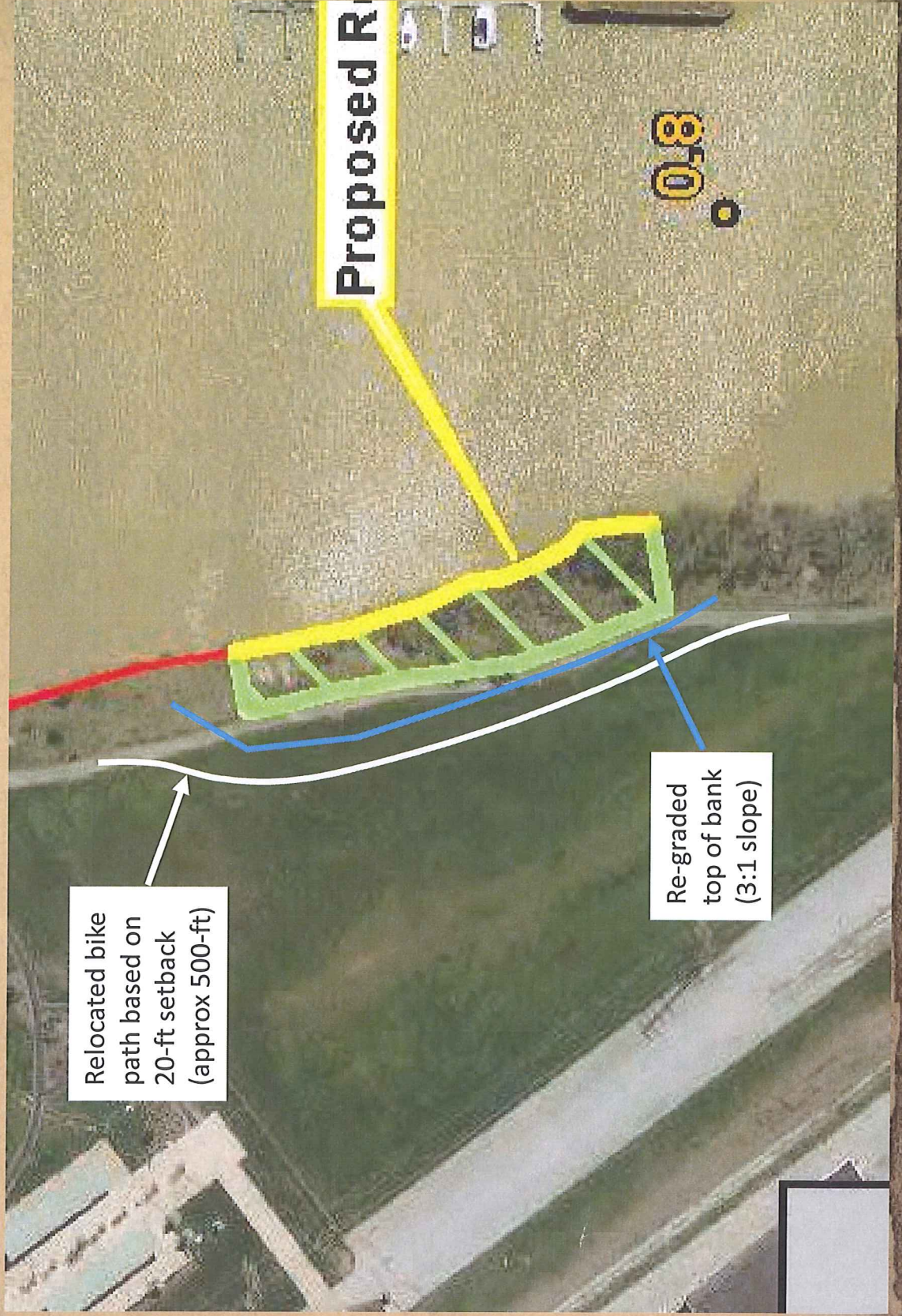
Bank Stabilization and Riparian Restoration



BLACK RIVER LANDING
BANK RESTORATION
TYPICAL DETAIL

Typical Improvement Details

Bank Stabilization and Riparian Restoration



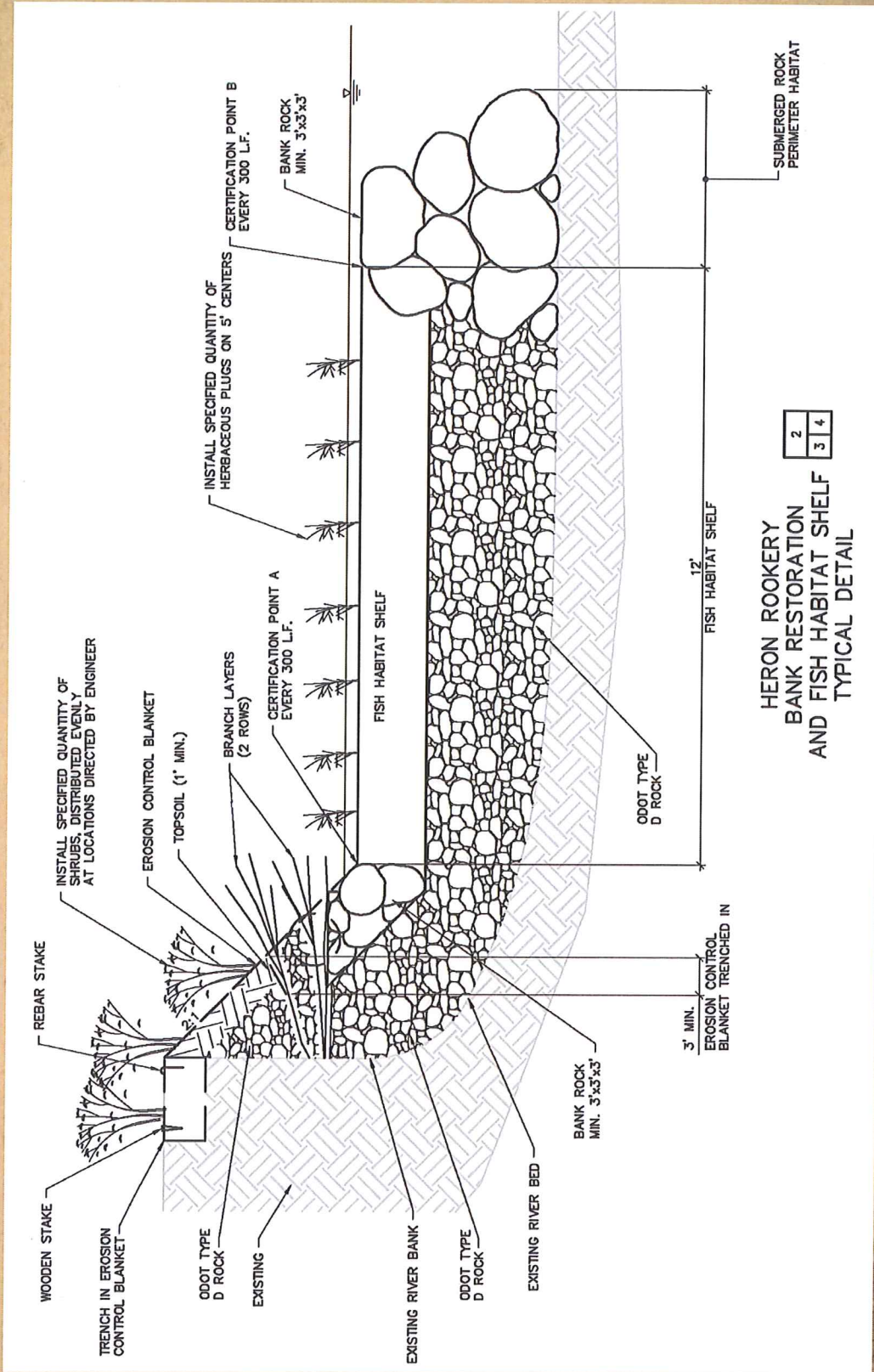
Typical Improvement Details

Aquatic Habitat Restoration

- Fish shelves with shallow, underwater ledge
- Aquatic vegetation and rock piles
- “Living shoreline” to stabilize banks and provide habitat for fish, macroinvertebrates, and other biota

Typical Improvement Detail

Aquatic Habitat Restoration



HERON ROOKERY
 BANK RESTORATION
 AND FISH HABITAT SHELF
 TYPICAL DETAIL

2
3 4

Coldwater Scope-of-Work

1. Grant and Project Management
2. Public Outreach (Kayak-a-Thon, web-page)
3. Biological and Habitat Monitoring (with Midwest Biodiversity Institute)
4. QAPP and HASP
5. Site Assessment (including bathymetric and topographic surveys)
6. Permitting (404, Local Floodplain, Ohio EPA NPDES construction)
7. Construction Plans and Specs (deliverables at 50%, 90%, and final)
8. Construction Administration / Resident Engineering

Anticipated Permit Conditions

- Fish Spawning (no construction between 4/15 and 6/30)
- Indiana and Northern long-eared bat (No tree removal between 4/1 and 9/30)
- Kirtland's warbler – no clearing of shrubs or trees from:
 - 4/22 through 6/1
 - 8/15 through 10/15
- Heron rookery – no work within 660-ft of rookery between 1/15 and 7/15
- Bald eagle – avoid work near rookery from late January to late July
- Worst case scenario: **90-days of active construction** (10/16/2015 to 1/14/2016)

Input and Reviews from City and Port Authority

- Lorain Port Authority:
 - Future development plans?
 - Restrictions on construction dates
 - Bike path construction (pavement design detail, setback from relocated top of bank, management of trail traffic, use of temporary trail)
- City of Lorain:
 - Access to Heron Rookery site
- Both:
 - Staging areas
 - Excess material disposal site(s)
 - Design Reviews at 50% (March) and 90% (April)

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