

Yarmouth Greenway Streambank Stabilization

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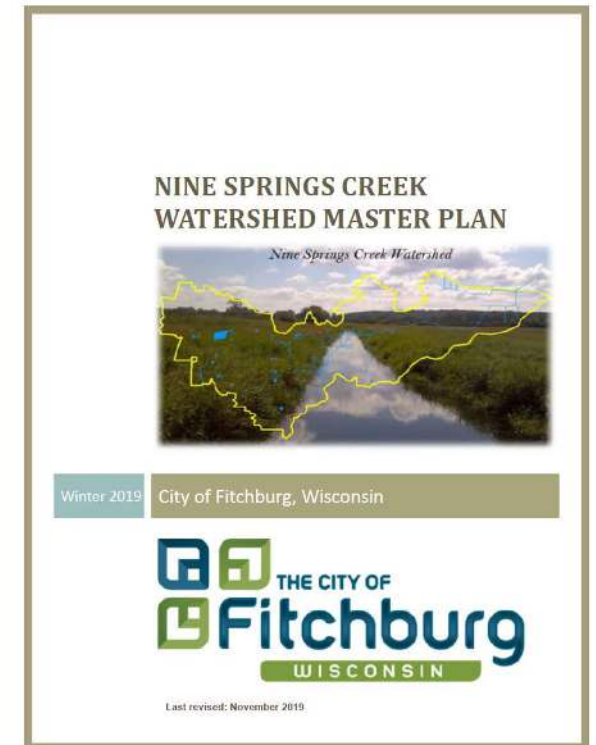


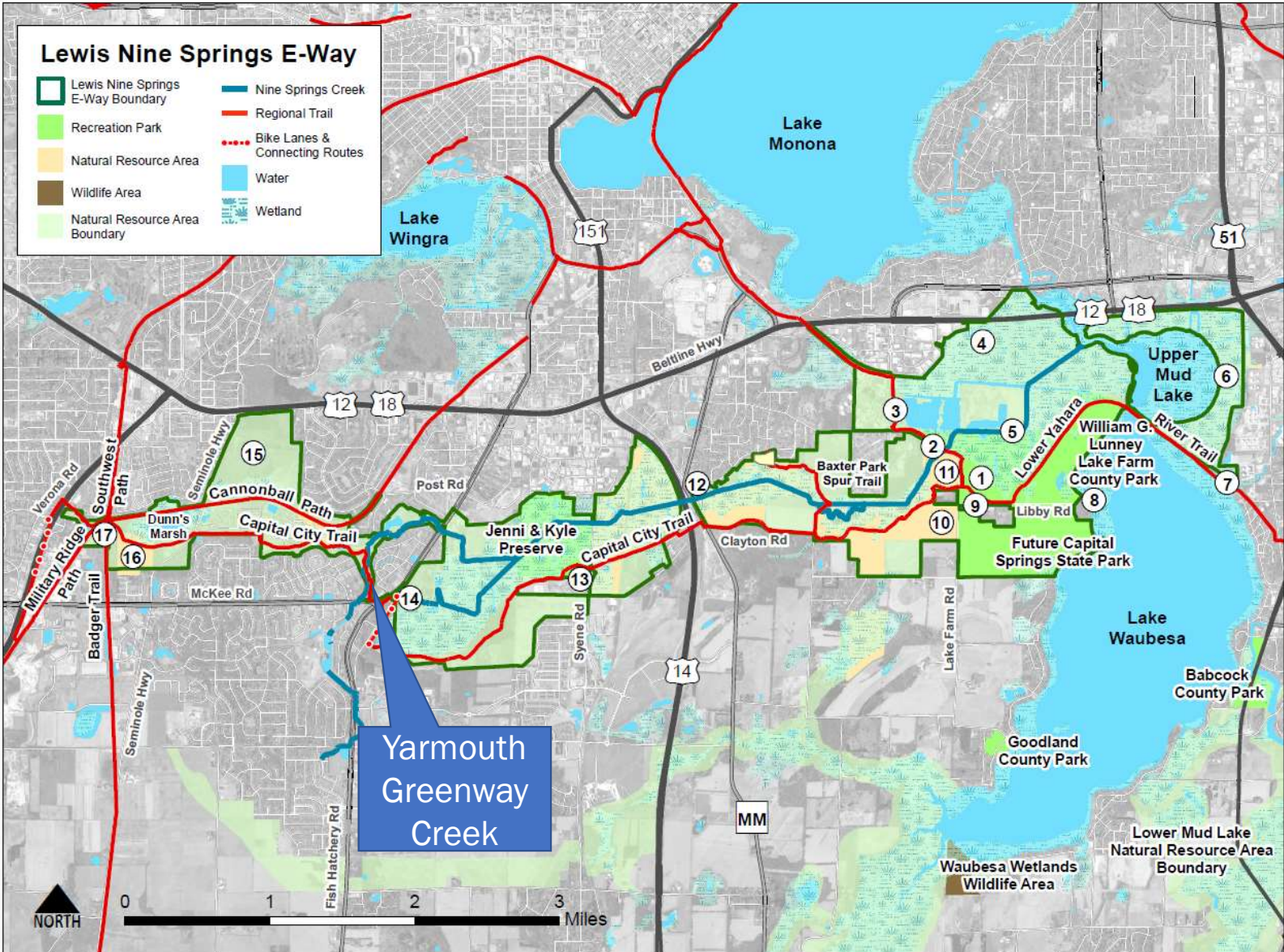
Outline

- Overview
- Phosphorous Data
- Yarmouth Greenway Streambank Project
- Draft Timeline
- Funding
- Next Steps
- Roles

Overview

- 9,000 acres (~14 sq. miles)
- Drains to Upper Mud Lake/Yahara River
- Watershed Plan (2019)
- Streambank Inventory (2013)
- Thirty years rapid development
- Documented water quality concerns
 - Phosphorus/TSS
- Watershed approach – start upstream





Lewis Nine Springs E-Way

| | |
|-----------------------------------|--------------------------------|
| Lewis Nine Springs E-Way Boundary | Nine Springs Creek |
| Recreation Park | Regional Trail |
| Natural Resource Area | Bike Lanes & Connecting Routes |
| Wildlife Area | Water |
| Natural Resource Area Boundary | Wetland |

Points of Interest

- ① Lussier Family Heritage Center
- ② Lewis Nine Springs E-Way Trailhead
- ③ Capital City State Trail
- ④ Monona Wetlands Conservancy
- ⑤ Madison Metropolitan Sewerage Dist. Wildlife Observation Area
- ⑥ Upper Mud Lake Parking Lot
- ⑦ McDaniel Park Village of McFarland
- ⑧ Lake Farm Park Boat Launch
- ⑨ Lake Farm Campground
- ⑩ Dog Park
Disc Golf
Gilman Mounds
- ⑪ Lower Yahara River Trailhead
- ⑫ Nine Springs Creek Canoe Landing
- ⑬ Syene Road Trailhead
- ⑭ WDNr Nevin Fish Hatchery
- ⑮ UW Arboretum
- ⑯ Dawley Bike Hub
Seminole Mtn Bike Trails
- ⑰ Bicycle Roundabout

Yarmouth Greenway Creek



1/10/2020

Nine Springs- 1939



Nine Springs- 1992



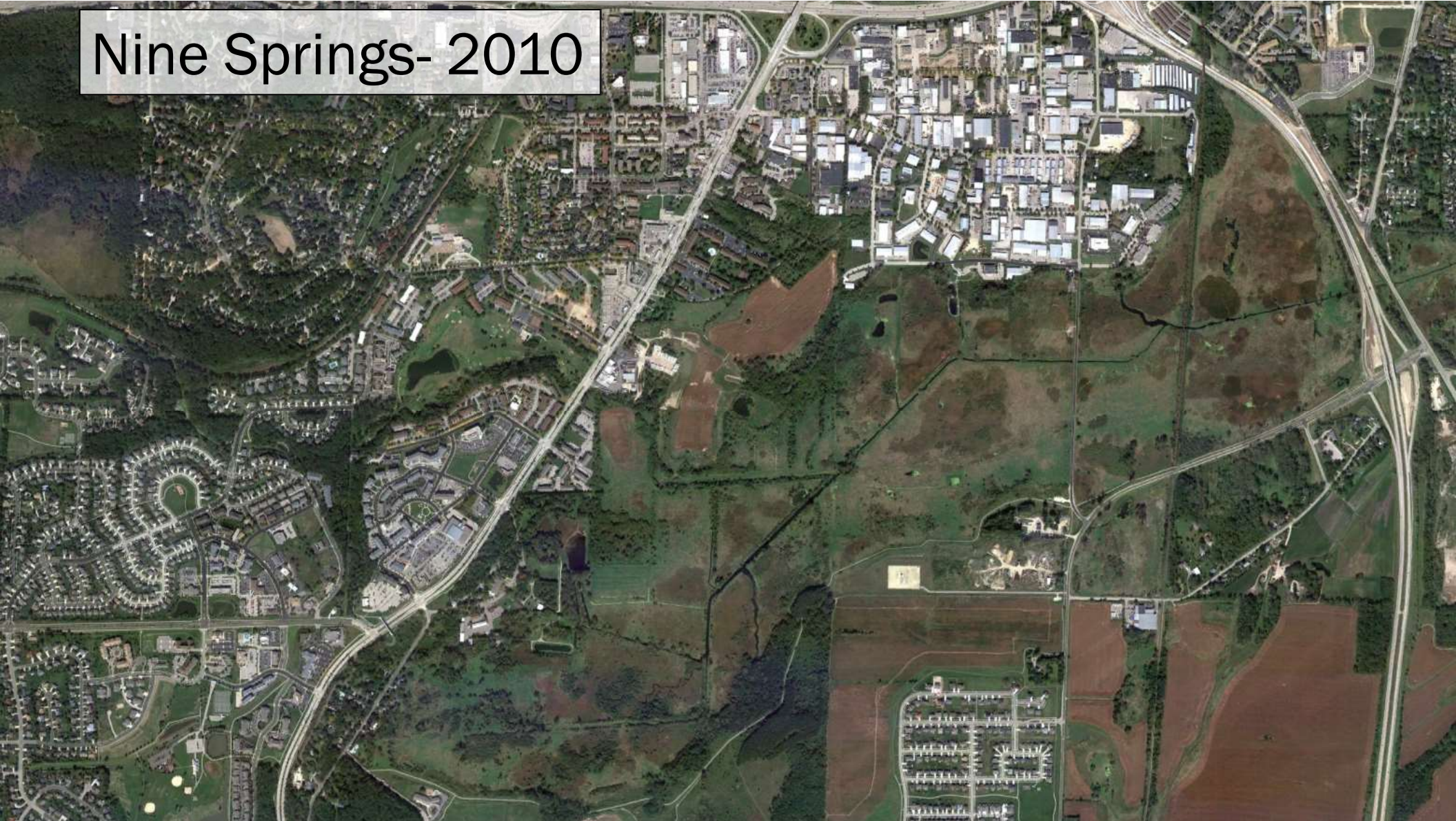
Image U.S. Geological Survey

Nine Springs- 2000



Image U.S. Geological Survey

Nine Springs- 2010



Nine Springs- 2020





TP = 0.07-0.7
Consistent high values

TP = 0.04-0.38
High winter
Low summer

TP = 0.03-0.07
Hatchery Site
Mean Discharge TP = 0.06

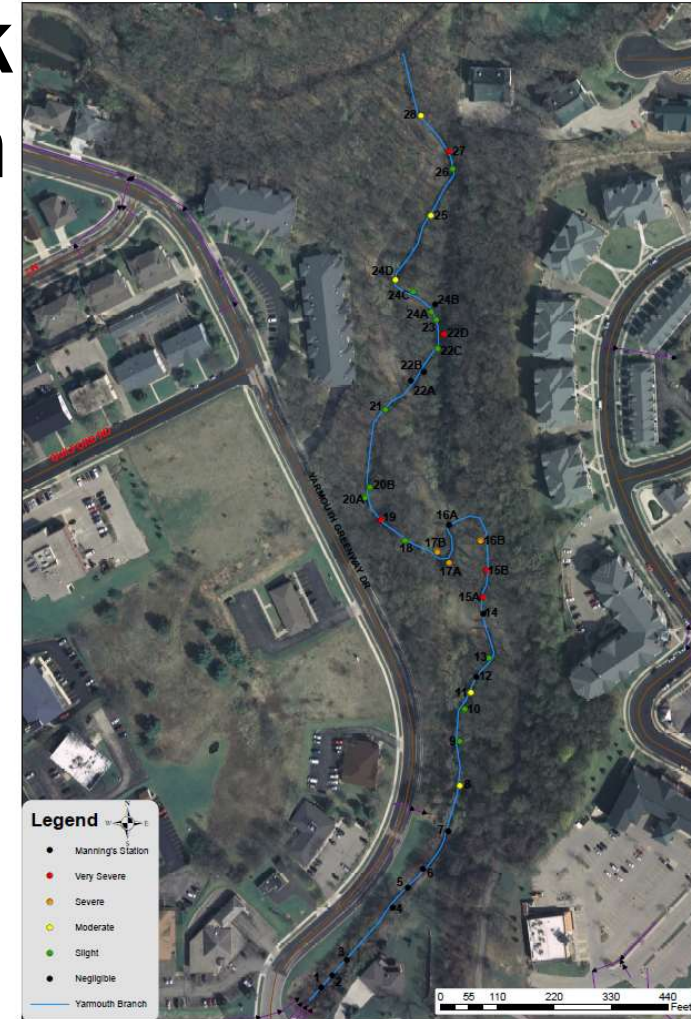
Project Ideas

- Brainstorming (Jan-Apr)
- Vetting (May-Sept)
 - Permit requirements
 - Fitchburg MS4
 - Nevin Hatchery
 - Cultural/value-based “Fit”
 - Holistic
 - Eco-services & sustainability
 - Community benefits
 - Prevention vs. Treatment
 - Logistics
 - Access
 - Permitting
 - Upstream - > Downstream
- Yarmouth Greenway Streambank Stabilization/Habitat Restoration
- Possible future projects
 - Nine Springs Restoration
- Other considered projects
 - Fish Hatchery Road Stormwater Pond (“Muskie Pond”)
 - Dunn Marsh
 - Pond Dredging
 - Pond Alum Treatments
 - P-Adsorption Devices
 - New Stormwater Treatment Ponds/Devices

Yarmouth Greenway Streambank Stabilization/Habitat Restoration

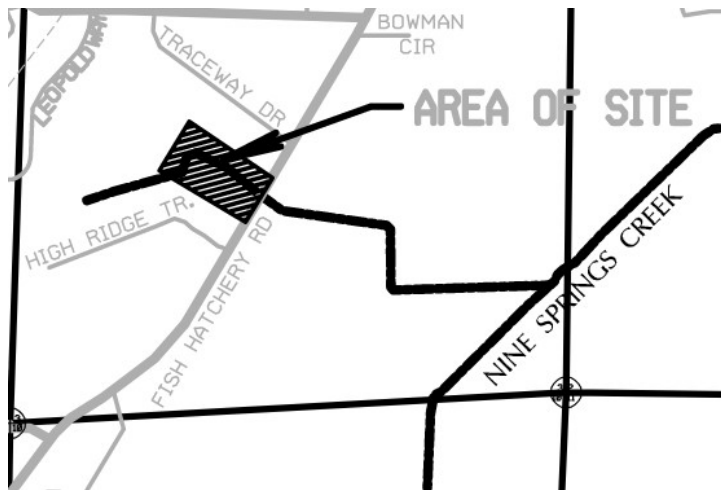
- Review past work
 - Golf course
 - Master plan
 - Stream inventory
- Overview of Area
- Site specifics
- Proposed stabilization practices

Erosion Sites City of Fitchburg



Past Streambank Projects

NINE SPRINGS CREEK - STREAMBANK RESTORATION
FOR THE
CITY OF FITCHBURG
DANE COUNTY, WISCONSIN
JANUARY 2002

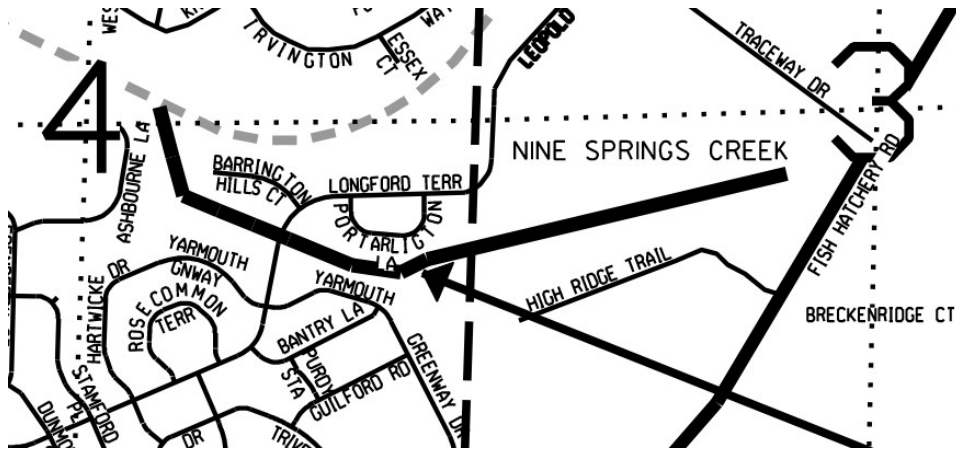


Past Streambank Projects

CONSTRUCTION DRAWINGS
FOR
DUNN'S MARSH AND NINE SPRINGS PHASE II
STREAMBANK STABILIZATION

CONTRACT SWU-5113-02 & SWU-5109-02

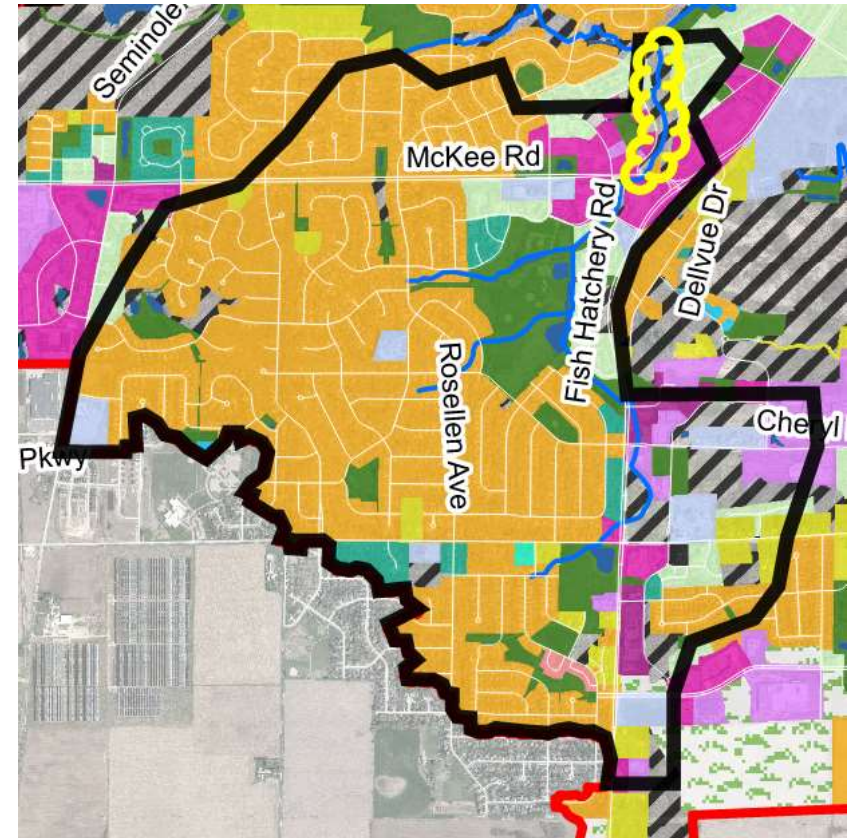
CITY OF FITCHBURG
DANE COUNTY, WISCONSIN
NOVEMBER, 2002





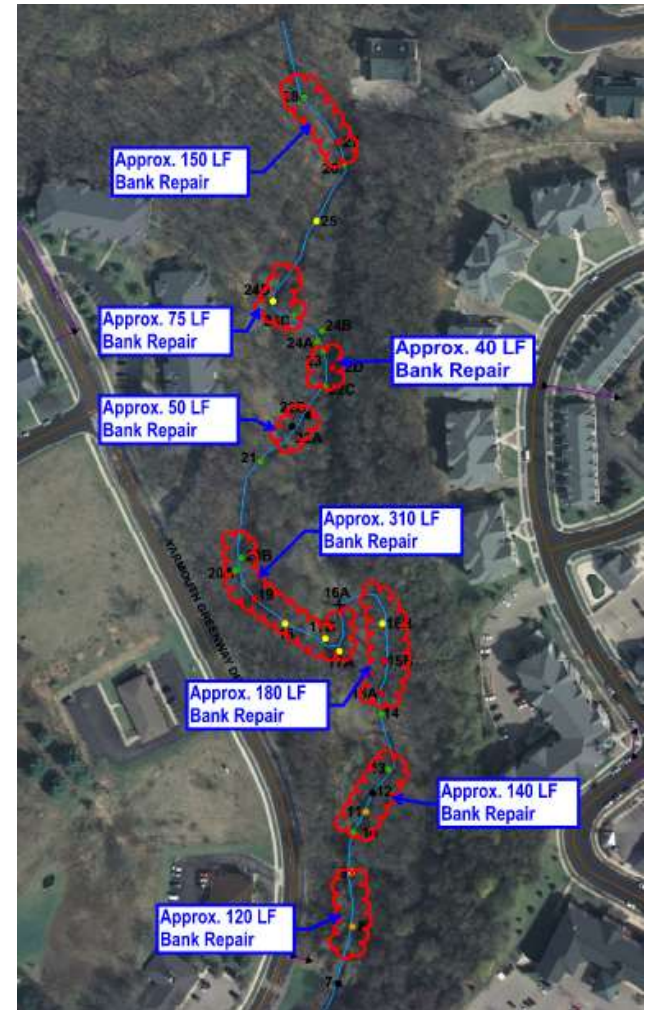
Yarmouth Greenway – Overview

- Ephemeral – flow only following rain events
- Conveys runoff from ~1,500 acres
- Land use predominantly single-family residential
- ~2,400' from McKee RD (PD) to confluence with Nine Springs tributary
- Assessment completed in 2013 as part of Nine Springs Masterplan
- Last segment to stabilize west of Fish Hatchery



Site Specifics

- Roughly 1,050' across 8 locations were identified for stabilization work
- Selected location exhibit moderate to severe erosion
- Varying soils – Silty loam, sandy loam, loamy sand with gravel
- Soil samples from 2013 - ~50 ppm TP
- Estimated LRR and direct field measurements used for soil loss estimates
- 130 tons/yr
- 13 lbs/yr TP



Example sites – Sta. 9



Example sites – Sta. 17b



Example sites – Sta. 18



Example sites – Sta. 19



Example sites – Sta. 24d



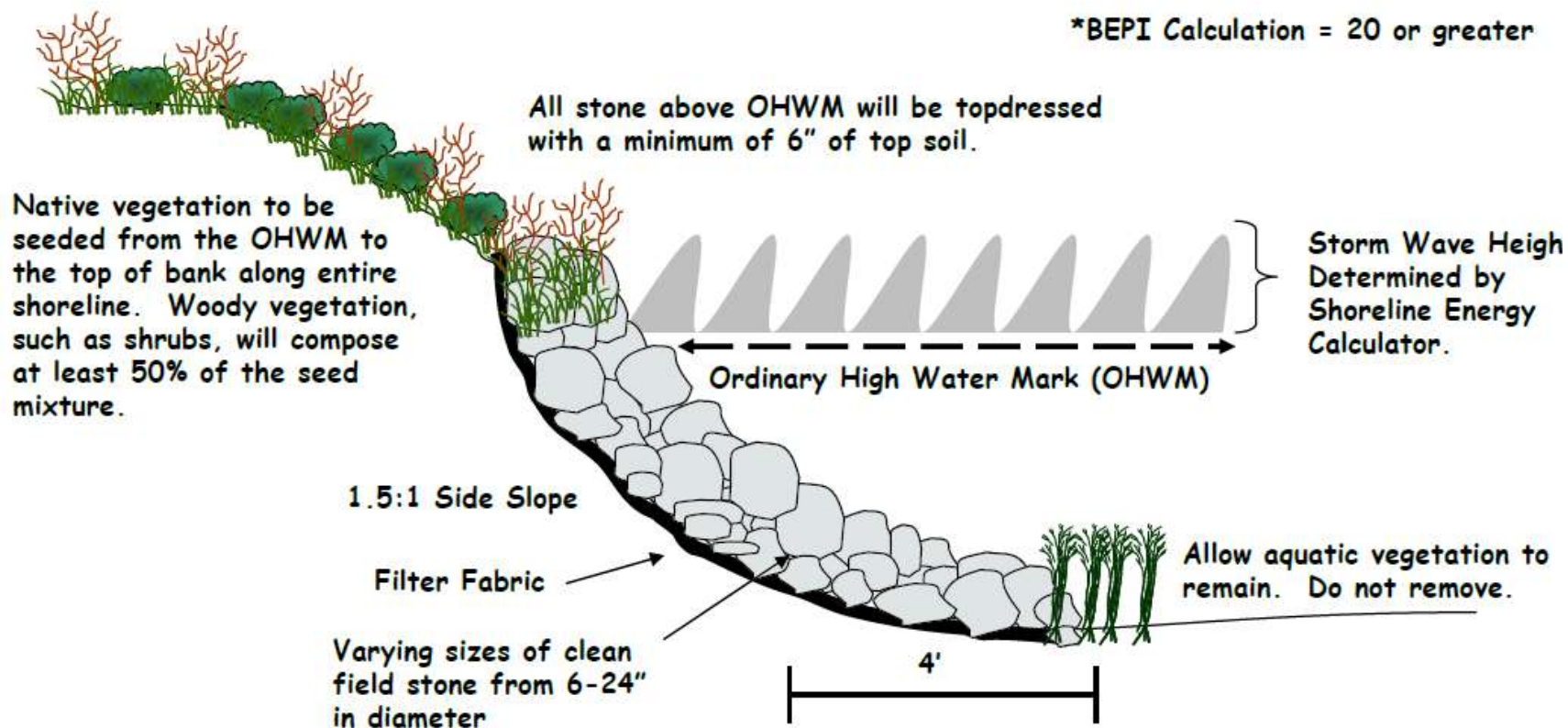
Proposed Stabilization Practices

- Removal of invasive, woody species along bank (buckthorn, black locust, etc.)
- Regrade vertical slopes to 2:1 max
- “Floodplain” connection where feasible
- Hard armor banks, native vegetation above OHWM
- Determine where hard armoring may not be necessary – attempt to limit extent.
- Flattened slopes + coir log may be sufficient at select locations



DNR General Permit Integrated Streambank Restoration

*BEPI Calculation = 20 or greater



DNR General Permit Integrated Streambank Restoration



Preliminary Timeline

- 2023
 - Prioritize, vet, and select conceptual projects
 - Develop Pre-proposal for Yahara WINS (Dec 19 meeting)
 - Yahara WINS support to move forward
- 2024
 - Develop 30% feasibility/scoping design (1st, 2nd qtr)
 - Identify financial resources/support (1st, 2nd qtr)
 - DNR & Fitchburg Staff “in-kind”
 - Yahara WINS Support (est. 2025)
 - Grants
 - Other?
 - Issue RFP (Fitchburg) (3rd qtr?)
 - Final design (4th qtr, into 2025)
- 2025 – Begin work

Anticipated Roles

- Project scope, conceptual/feasibility design - Fitchburg/DNR
- Field reconnaissance - Fitchburg/DNR
- Financial support/grants - Fitchburg/DNR
- Habitat, construction advising – DNR
- Permitting, cultural/endangered resources – DNR
- Final design – Fitchburg, DNR, consultant
- RFP, consultant management - Fitchburg

Questions?

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"WILD WISCONSIN:
OFF THE RECORD"