

# Malden River Ecosystem Restoration Project



New England District  
U.S. Army Corps of Engineers  
696 Virginia Road  
Concord, MA 01742-2751

# Ecosystem Restoration Authorities

- Specifically Authorized Projects – General Investigations
- Aquatic Ecosystem Restoration – Section 206
- Project Modifications to Improve the Environment – Section 1135
- Beneficial Uses of Dredged Material – Section 204



# Program

- Aquatic Ecosystem Restoration Program  
(Section 206 of WRDA 1996)
  - Local Sponsor:
    - Mystic Valley Development Commission
  - \$10 million Federal cost limit
    - Total Project Cost Estimate = \$3,000,000
  - 65% Fed:35% Non-Fed Cost Sharing
    - Federal Cost Estimate = \$1,950,000
    - Non-Federal Estimate = \$1,050,000 (including Work-In-Kind and Real Estate Credits)

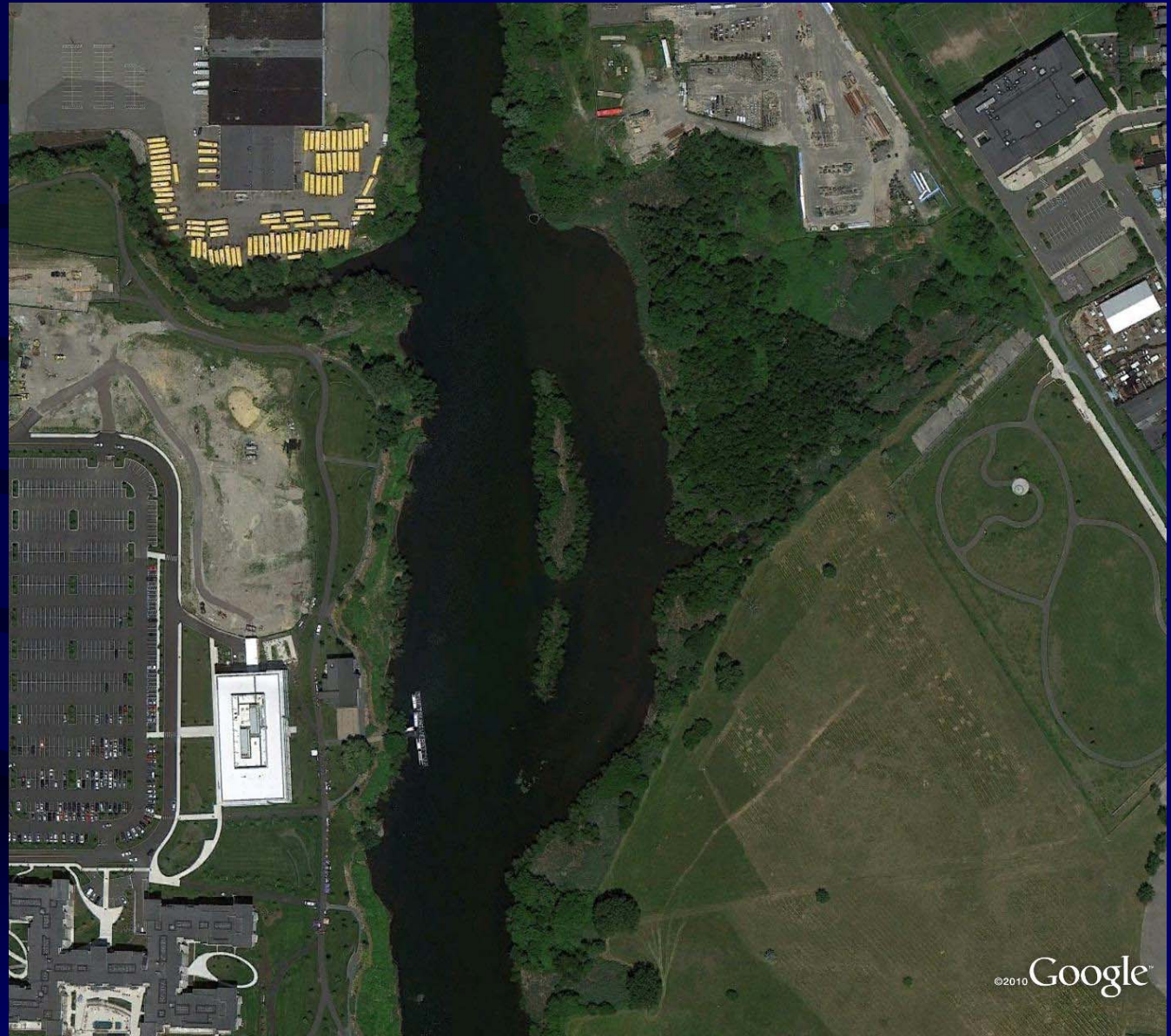


# Project Phases

- Feasibility Study – June 2008
  - Detailed Project Report and EA, June 2008
- Project Partnership Agreement
  - PPA signed October 2009 with MVDC
  - Funding provided by MVDC and Corps to fund plans and specifications
- Plans & Specifications – Draft Fall 2018
- Construction – Fiscal Year 2019-2020
- Monitoring – Fiscal Years 2021-2024



# Project Area



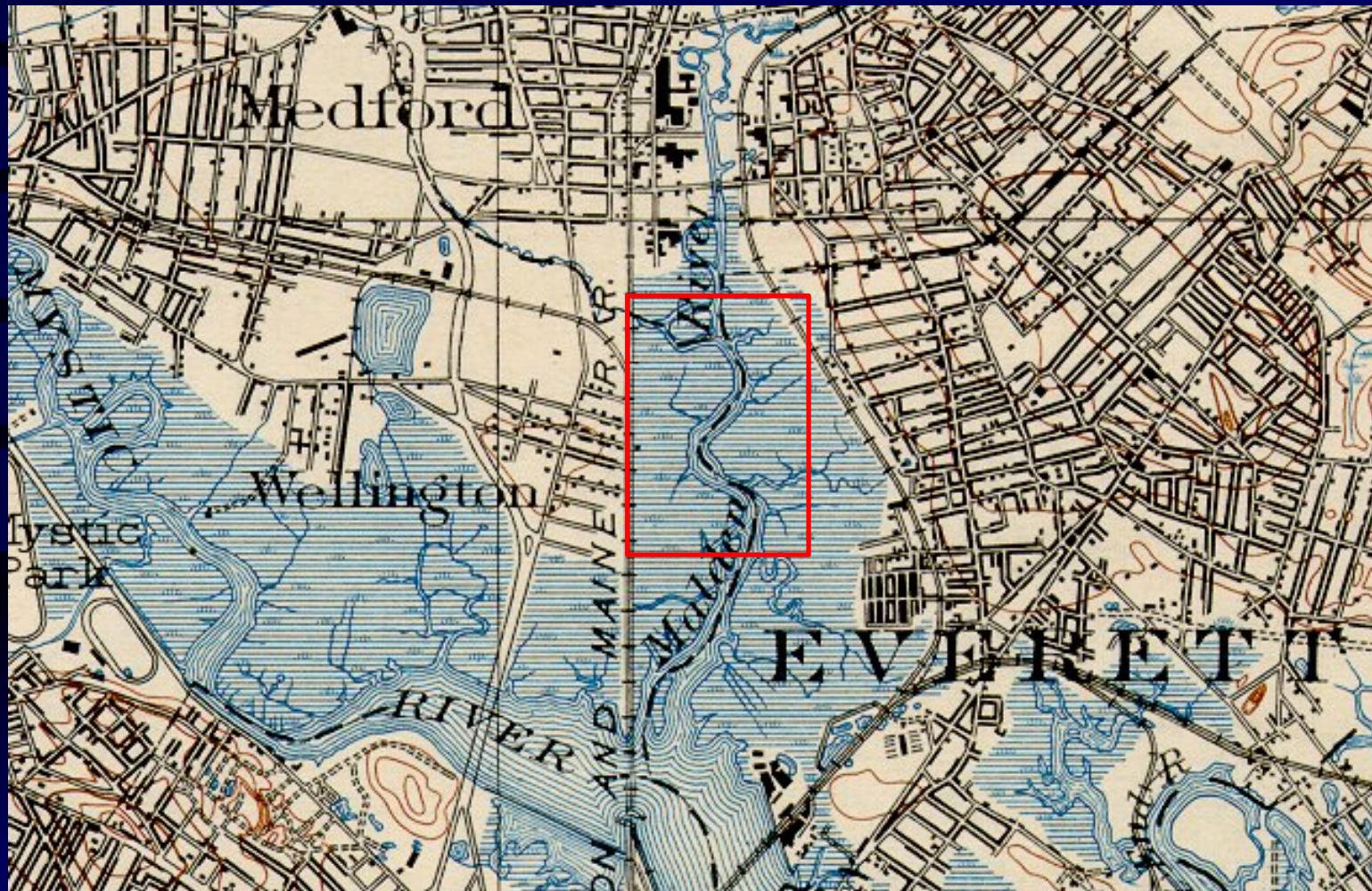


## *Downstream Entrance to Oxbow*





# 1903 Topographic Map



# Problems

- Filled wetlands and riparian areas
- Dam effects on hydrology
- Loss of emergent wetlands
- Non-native invasive species
- Stagnant water





# *Phragmites*





# *Loss of emergent wetlands*





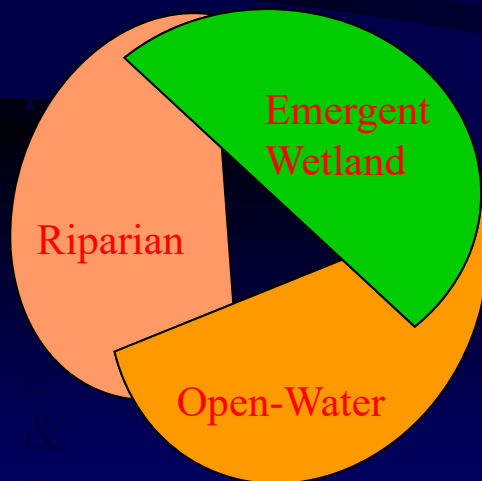
# *Stagnant Water choked with Aquatic weeds*



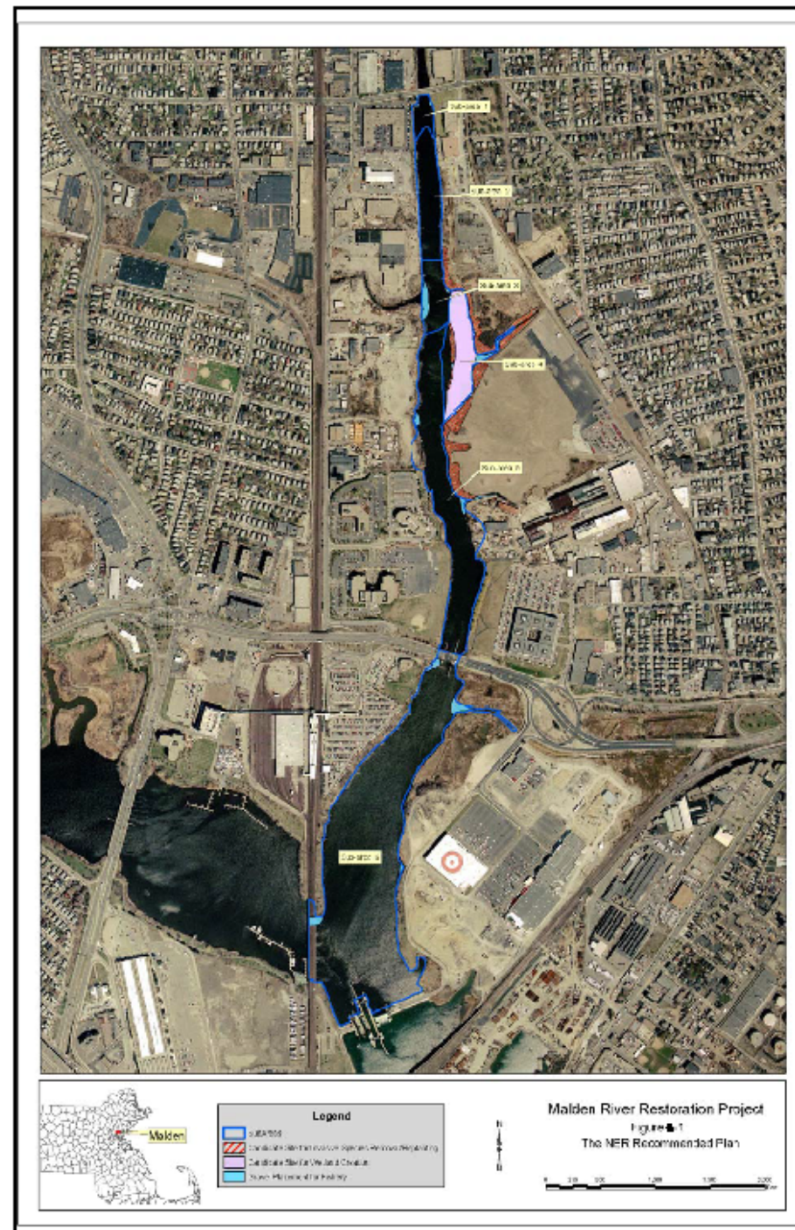


# Project Measures – Developing a Proposal

- ❖ Enhance Aquatic Habitat for Fisheries
- ❖ Improvement of Waterfowl Habitat
- ❖ Improvement of Benthic Habitat
- ❖ Improvement of Water Quality
- ❖ Restore a Balanced Diversity among Habitats



# 2009 Feasibility Study Plan

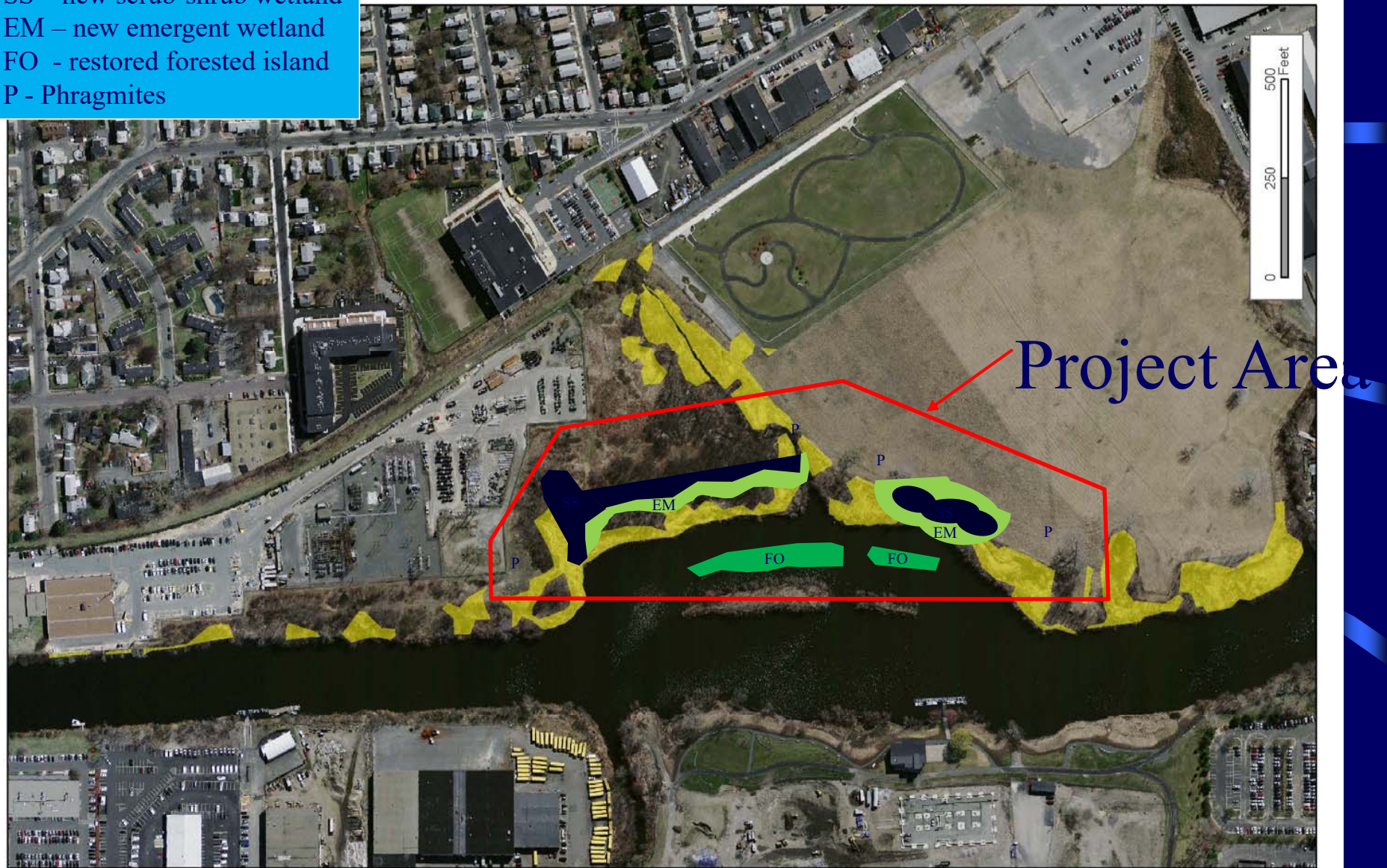


study\malc102.s02 2/13/2007 3:42:57 PM



# 2018 Concept Restoration Plan

SS – new scrub-shrub wetland  
EM – new emergent wetland  
FO – restored forested island  
P – Phragmites





# 2018 Restoration Plan

- **Create emergent and shrub wetlands in the oxbow area**
  - Construct shallow earthen terraces into open water connected to east shoreline
  - Preserve most of the open water habitat in the oxbow and maintain flow through the oxbow

- **Phragmites Control and Replanting**

- Eradicate Phragmites in riparian areas along river and tributary and islands,
- Replant with native trees, shrubs, and wetland plants
- Post restoration invasives control required

# Design Issues - Wetland Creation in the Oxbow

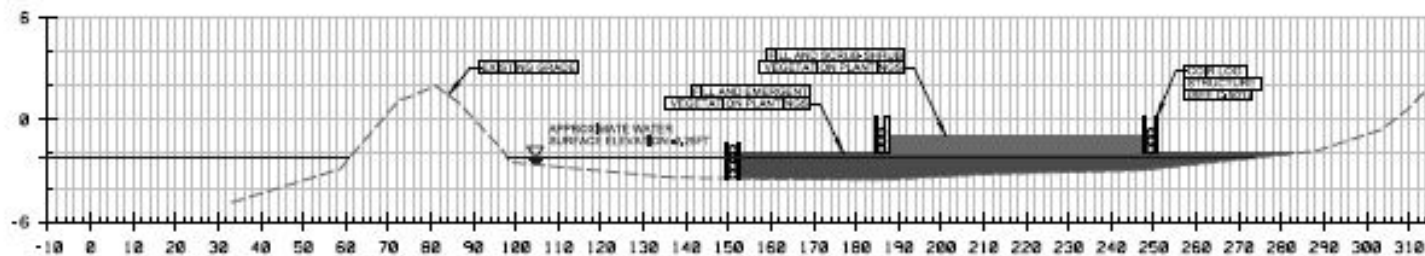
- Exposure to +/- 1.5 foot seasonal water level fluctuation due to operation of DCR's Amelia Earhart Dam
- Difficult to construct due to subsidence
- Difficult access for construction equipment
- Polluted sediments and fill have to be controlled
- Emergent plantings susceptible to herbivory
- Invasive species returning (Phragmites, knotweed)



# Fill Terrace Cross-section



# Fill Terrace Cross-section



SECTION A (STA. 11+80)

**E1 STACKED COIR LOG BARRIER**  
SCALE: NTS



# Coir Log Perimeter



# Lonsdale Marsh





# Lonsdale Marsh





# Planted Cattail and Scirpus



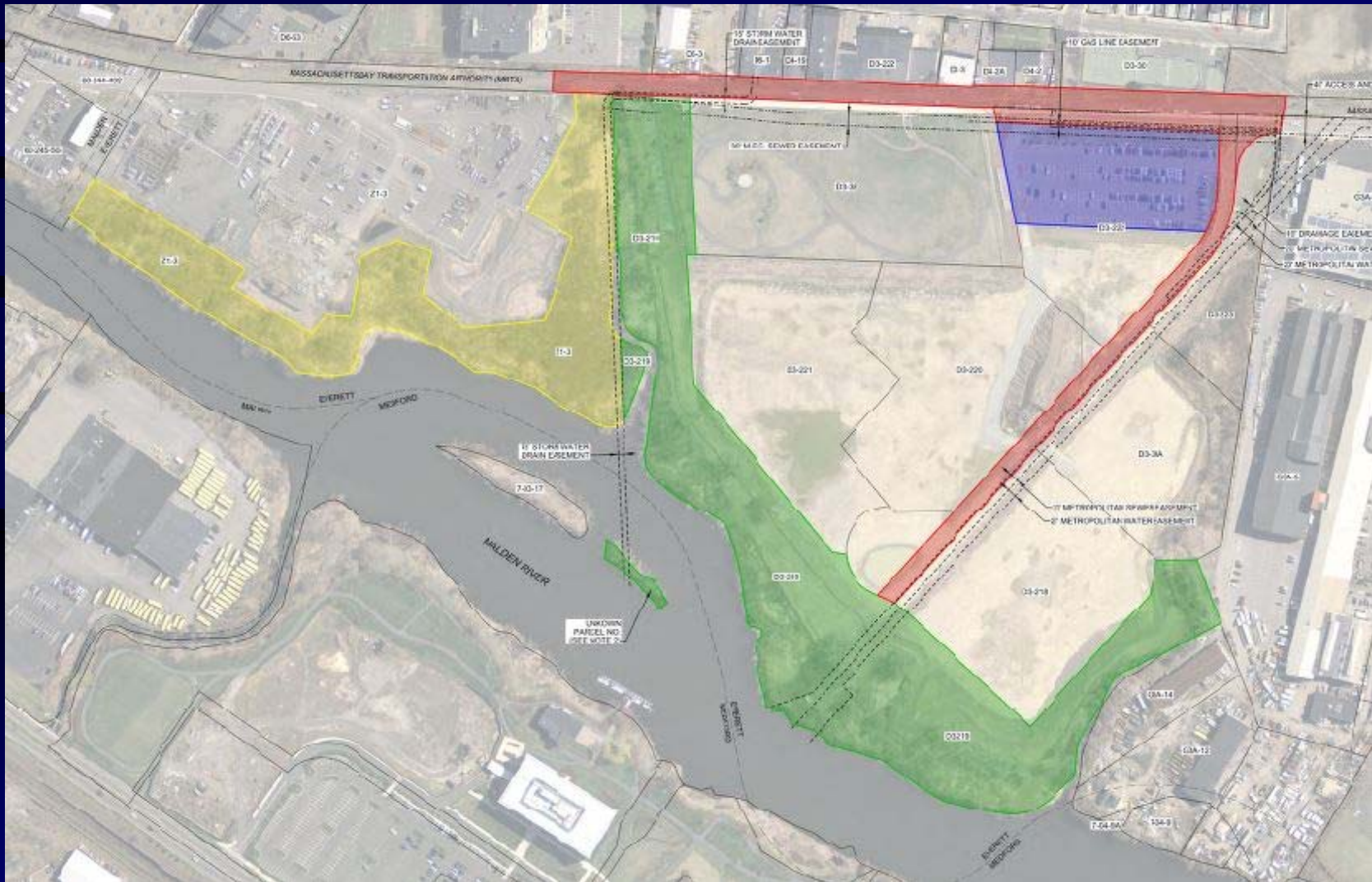


# Planted Cattail and Woolgrass

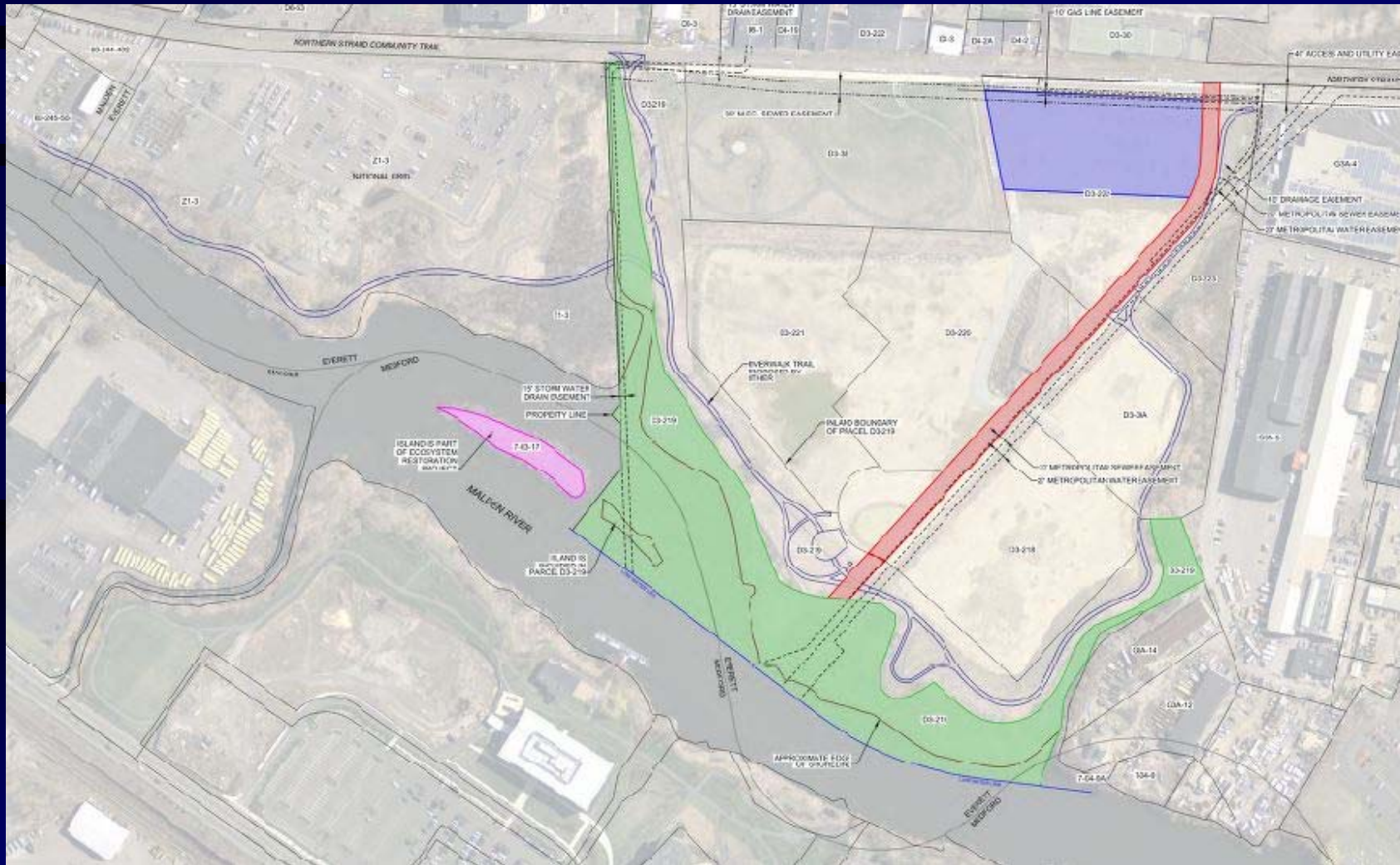




100



# Real Estate Acquisition – Wynn Property and MVDC





# Questions

Adam Burnett – 987-318-8547

Nick Pernice – 781-324-5720 ext. 5728

