# TORBERT H. MACDONALD PARK
## MEDFORD, MA

# VEGETATION MANAGEMENT

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# Commonwealth of Massachusetts

Governor
**Maura Healey**

Lieutenant Governor
**Kim Driscoll**

Energy and Environmental Secretary
**Rebecca Tepper**

Department of Conservation and Recreation Commissioner
**Brian Arrigo**

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# DCR MISSION STATEMENT

To protect, promote and enhance our common wealth of natural, cultural and recreational resources for the well-being of all

# MEETING LOGISTICS

- **You will have the opportunity to submit comments over the course of the next two weeks at:**
  - DCR Public Comments
    https://www.mass.gov/forms/dcr-public-comments
- **Two ways to ask questions during the meeting**
  - Use chat feature
  - Raise your hand using the Zoom function, and you will be given permission to unmute and speak.
- ***Please note that this public information meeting will be recorded; the recording will be a public record.***

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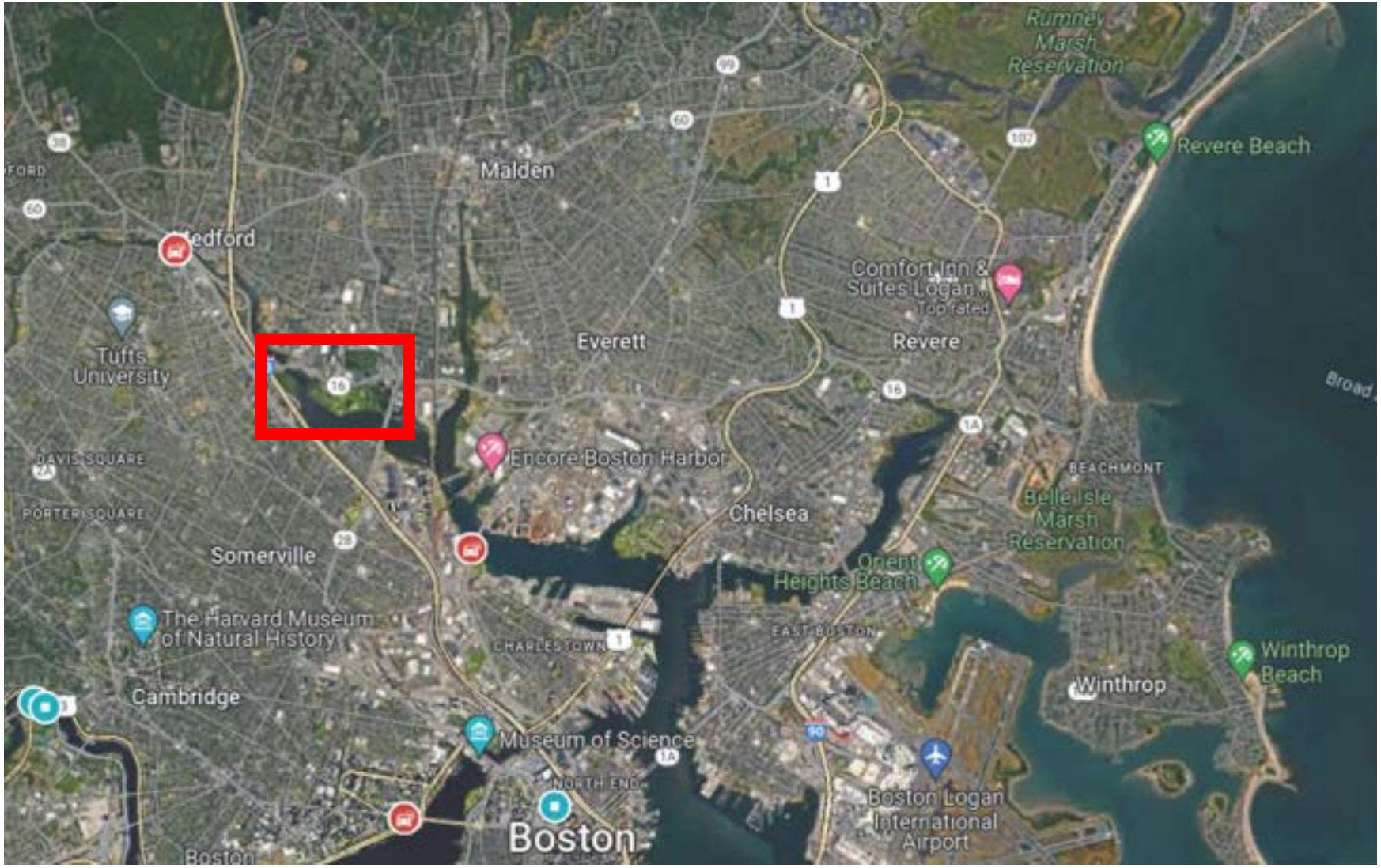
# PROJECT BACKGROUND

## CURRENT PROJECT: VEGETATION MANAGEMENT PLAN UPDATE

Funded by an earmark and supplemented by DCR capital funds in response to the need for vegetation management in the park for both invasive plant species control and widespread tree replacement


# REGIONAL CONTEXT

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# MYSTIC RIVER RESERVATION

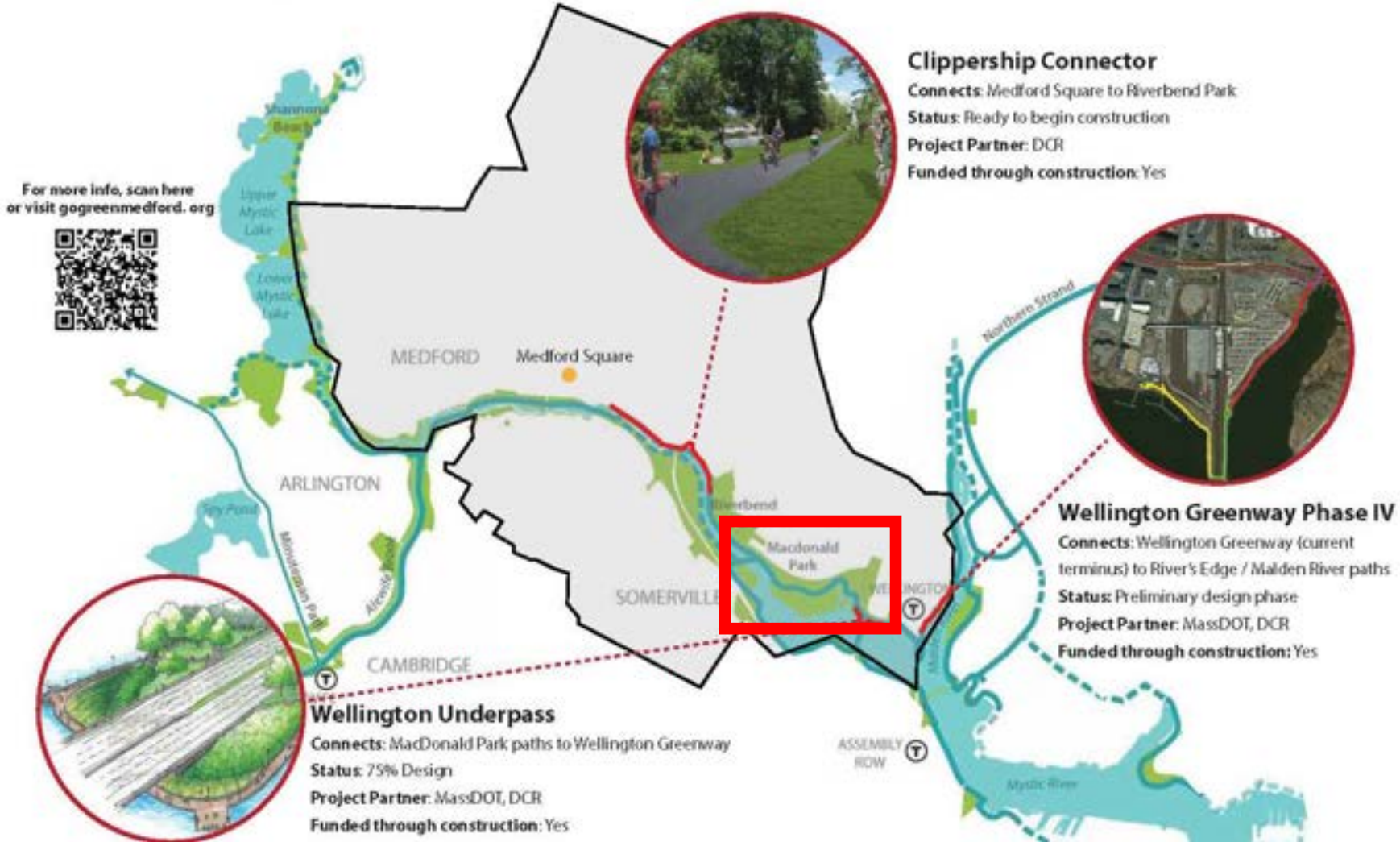


IMAGE CURTESY OF GO GREEN MEDFORD

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# MACDONALD PARK TIMELINE

**1893**

The Metropolitan District commission approves creation of the Mystic River Reservation

**1970s**

Carol Johnson's landscape architecture firm designs Macdonald Park based on Charles Elliott's vision for passive recreation and public open space along the Mystic River

**2009**

DCR finalizes the Mystic River Reservation Master Plan to revitalize the parks, paths, and trails along the Mystic River

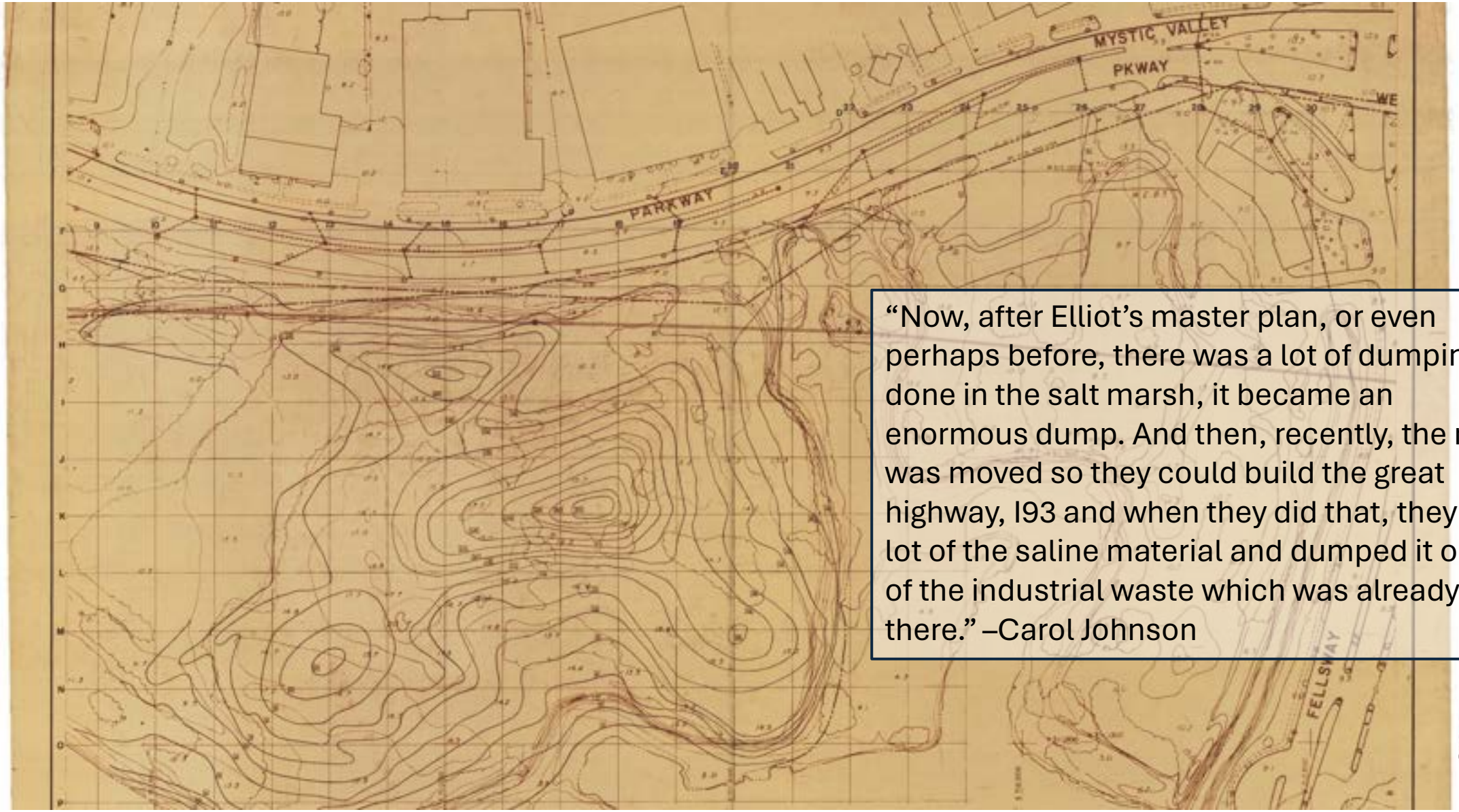
**2016-18**

Park improvement projects include shoreline invasive management, improved circulation and signage, renovations to 3 structures, a new boat landing and plans for continued vegetation management

**2024-26**

Removal of Ash and Cottonwood trees provide new opportunities for tree revitalization, invasive management and new plantings

# FINAL GRADING PLAN 1977




"Now, after Elliot's master plan, or even perhaps before, there was a lot of dumping done in the salt marsh, it became an enormous dump. And then, recently, the river was moved so they could build the great highway, I93 and when they did that, they dug a lot of the saline material and dumped it on top of the industrial waste which was already there." –Carol Johnson

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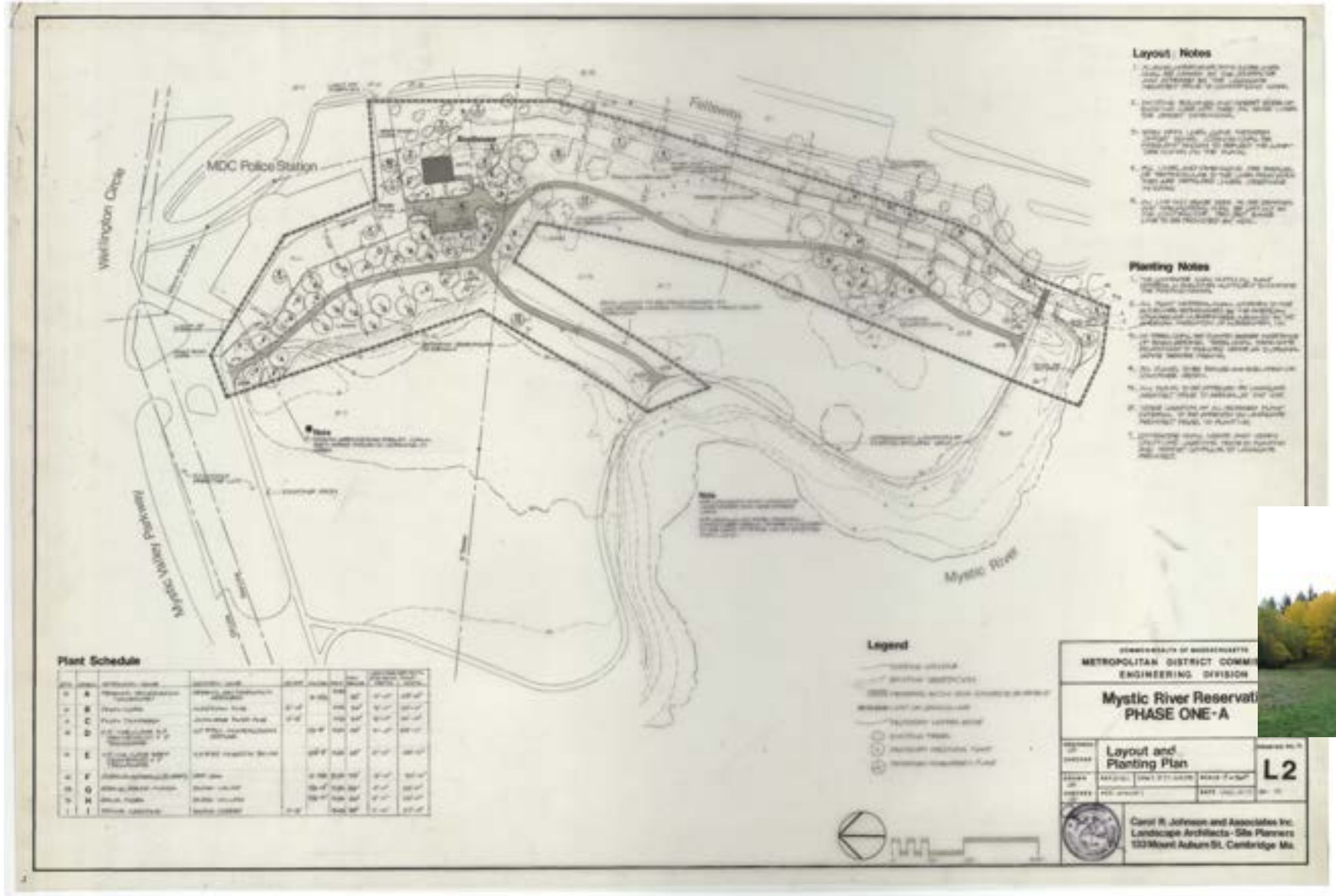
# PHASE 1 LAYOUT & PLANTING 1977




"The trees are still a bit small, we tried to put in some fast-growing trees, some Androscoggin poplars, which make wonderful trees very quickly, but they die early. We had slower growing oaks, maples as well as the poplars." - Carol Johnson

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# CURRENT CONDITIONS

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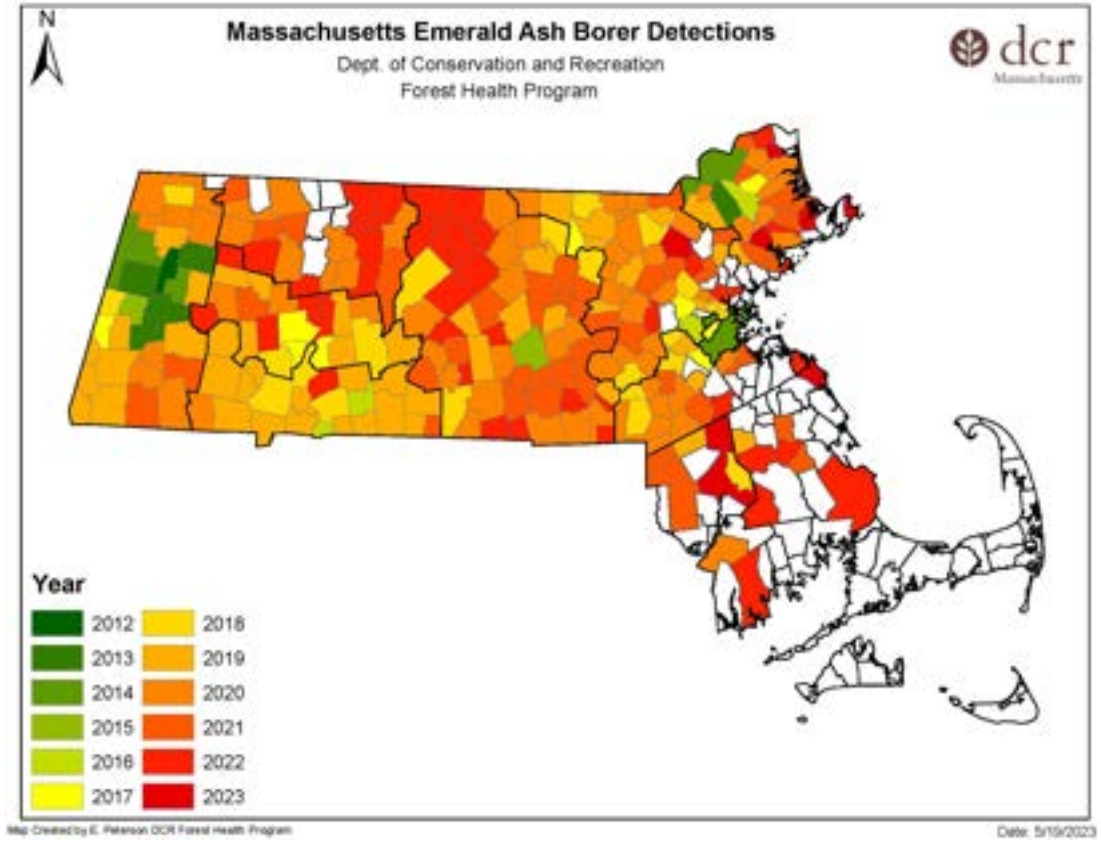
# EMERALD ASH BORER

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# EMERALD ASH BORER

**Forest Pest Fact Sheet**
Massachusetts Dept. of Conservation and Recreation
Forest Health Program

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## Emerald Ash Borer
*Agrilus planipennis*

### Background

The emerald ash borer (EAB) was first found in Massachusetts in August 2012 in the town of Dalton. The destructive beetle poses a threat to ash trees statewide, EAB infest all ash species (*Fraxinus* spp.). Common native hosts in Massachusetts are white ash, green ash, and black ash. Ash trees can be found throughout state, but the highest densities are in Berkshire County.

### Life Cycle and Identification

The EAB undergoes four distinct life stages: egg, larvae, pupae, and adult (beetle). In Massachusetts, EAB will typically complete one generation in one year, however, life cycles can exhibit variation in new infestations with low population density.

Eggs are laid on the bark of ash trees by female beetles from May to September; eggs are laid between layers of bark or in cracks and crevices for protection. Eggs are very small (~1/32 inch), flat ovals, that are initially white colored but develop into a reddish brown. Eggs take approximately two weeks to hatch.

Emerging larvae will tunnel below the bark and into the outer cambium layer of the tree. Here the larvae will feed upon the nutrient rich phloem. The larvae form S-shaped galleries as they feed, they increase in size as the larvae grows.

EAB larvae can be identified by their brown head, white flat body and ten bell shaped body segments. Larvae will undergo 4 instars, reaching a final size of about 1-1.25 inches long. Larvae continue feeding until November when the mature larvae will overwinter in a J shaped pupation chamber.

These mature larvae overwintering in pupal chambers will begin pupation in the spring, typically starting in late April- early May. Pupation will take approximately two weeks to complete. When adult beetles are ready to emerge they will chew out through the bark and create D shaped exit holes.

Adult beetles begin to emerge in late May-June and continue through August (initial emergence at 400-500 GDD base 50°F, with peak emergence by 1000 GDD). EAB adults will feed on ash foliage but minimal damage to the ash trees occur in this feeding stage. Adults will mate about 1 week after emergence and females will typically lay 30-100 eggs. Adult beetles are about 0.5 inches long and can be identified by their iridescent jewel green color with a coppery, purple reddish dorsal surface color visible under the wings. It is possible to find active beetles until the first hard frost.

### Identifying Infestations

EAB introduction sites are usually infested for 3 to 5 years before there is noticeable tree mortality. Early stages of infestation in a tree will focus in the canopy and upper trunk, but as the population density grows, EAB will infest the lower trunk. Tree damage and eventual mortality is caused by the larval feeding. The EAB larval galleries disrupt the translocation of water and nutrients through the tree. Extensive cambium feeding will eventually girdle an ash tree, causing mortality.

As EAB disrupts a tree's nutrient movement, canopy dieback will be noticeable. Leaves will become discolored, the canopy will thin, and eventually upper branches of the tree will begin to die. The ash tree may also begin to produce epicormic shoots; these are new growth sprouts low on the truck, below the disruptive feeding galleries. The bark may begin to split above the S-shaped galleries.

Additionally, EAB infested trees can often be identified by heavy woodpecker feeding. Woodpecker feeding can cause easily recognizable damage: in the upper canopy they can cause blonding, exposure of the light colored inner bark, and flecking, the appearance that strips of bark have been removed.

EAB will infest any species of ash that is greater than 2.5 inch diameter. EAB are attracted to pheromones produced by stressed trees, but they will infest both healthy and stressed ash trees.

### Management

EAB populations are challenging to eradicate once established due to the difficulty to detect EAB presence until populations densities are high and the ability of the beetle to travel long distances to new host trees. A natural EAB population front moves approximately 2 miles per year.

Under federal regulations, the entire state of Massachusetts is quarantined in an effort to slow the national spread of the EAB. The interstate movement of all hardwood species firewood and nursery stock, green lumber and other plant material of any ash species is restricted. Though EAB is already present in multiple counties in Massachusetts, a conscious effort to prevent the movement of ash materials will stop this destructive insect from infecting ash stands in new locations in our state. In Massachusetts' state parks, the transportation of any firewood into or out of a campground is prohibited.

The Massachusetts DCR Forest Health Program is working with USDA APHIS to establish biocontrol species in multiple locations in the state. Three EAB specific parasitoids are utilized to control the spreading invader's populations: *Oobius agrili*, *Tetrastichus planipennisi*, and *Spathius galinae*. The goal is to develop a biocontrol population that can minimize EAB population to manageable levels and allow ash species to develop resistance.

Individuals with concern for ash trees on their property can consult a certified arborist. Preventative pesticide treatments can be used for individual trees in close proximity to know infestations. However, pesticide application should be performed by a licensed pesticide applicator; pesticide applications do carry risks to the native insect community.

### For more information:

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**DCR Forest Health Program**
**Phone:** (413) 253-1798 x204
**Website:** http://www.mass.gov/dcr/forest-health

MDAR

**MDAR Pesticide Program**
**Phone:** (617)626-1700
**Website:** http://www.mass.gov/eea/agencies/agr/pesticides/

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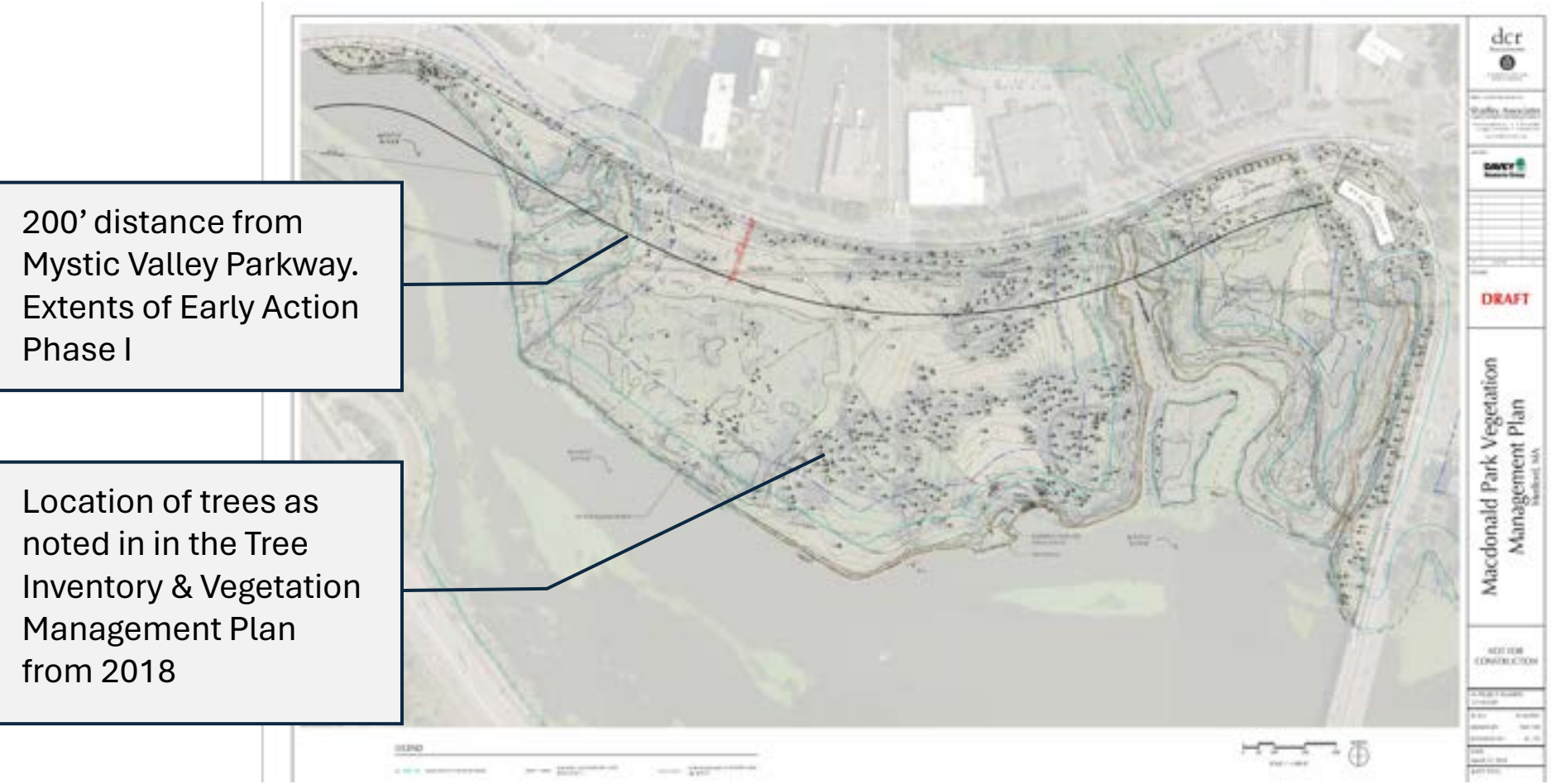
https://www.mass.gov/guides/emerald-ash-borer-in-massachusetts#-slowing-the-spread-

# VEGETATION MANAGEMENT
## EARLY ACTION PHASE
### WITHIN 200’ OF MYSTIC VALLEY PARKWAY

200’ distance from Mystic Valley Parkway. Extents of Early Action Phase I

Location of trees as noted in in the Tree Inventory & Vegetation Management Plan from 2018

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# VEGETATION MANAGEMENT

## EARLY ACTION PHASE

## WITHIN 200' OF MYSTIC VALLEY PARKWAY

### REMOVALS:

- TOTAL NUMBER OF TREES TO BE REMOVED-102
- TREES TO BE REMOVED IN RESOURCE AREAS- 34
  - TREES TO BE REMOVED IN 100' INNER RIPARIAN ZONE 16
  - TREES TO BE REMOVED IN 200' RIVERFRONT AREA 18

### PLANTING:

- TOTAL NUMBER OF PROPOSED TREES- 208
- TOTAL NUMBER OF PROPOSED TREES IN RESOURCE AREAS- 58
  - PROPOSED TREES IN 100' INNER RIPARIAN ZONE-18
  - PROPOSED TREES IN 200' RIVERFRONT AREA- 37
- RATIO OF PROPOSED TREES : TREES TO BE REMOVED- 2:1
- TREES TO BE PLANTED BEFORE TREE REMOVALS- 60

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# VEGETATION MANAGEMENT

## EARLY ACTION PHASE

## WITHIN 200' OF MYSTIC VALLEY PARKWAY

## PLANT LIST

| SPRING 2024 MACDONALD PARK EARLY ACTION PLANTING | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| **DECIDUOUS SHADE TREES** | | | | | |
| **SYM** | **TOTAL QTY** | **Botanical Name** | **Common Name** | **Size (Caliper/ Height)** | **Rootball Size** |
| AR | 4 | Acer rubrum | Red Maple | 1.5-2" cal/ 14-16' ht | B&B, 24" dia. |
| AOG | 12 | Acer rubrum 'October Glory' | October Glory Maple | 1.5-2" cal/ 14-16' ht | B&B, 24" dia. |
| CK | 2 | Cledrastis kentukea | Yellowwood | 1.5-2"cal/10-12' ht. | B&B 24" dia. |
| GD | 3 | Gymnocladus dioicus 'Espresso' | Kentucky Coffee Tree | 1.5-2" cal/ 14-16' ht | B&B, 24" dia. |
| LT | 2 | Liriodendron tulipifera | Tulip Poplar | 1.5-2" cal/ 14-16' ht | B&B, 24" dia. |
| NS | 6 | Nyssa sylvatica* | Black Gum | 1.5-2"cal/10-12' ht | B&B, 24" dia. |
| OV | 4 | Ostrya virginiana | AmericanHophornbeam | 1.5-2"cal/10-12' ht | B&B, 24" dia. |
| PO | 4 | Platanus occidentalis | American Sycamore | 1.5-2"cal/10-12' ht | B&B, 24" dia. |
| **ORNAMENTAL TREES** | | | | | |
| AC | 10 | Amelanchier canadensis* | Serviceberry | 6-7' ht clump | B&B, 24" dia. |
| CE | 6 | Cercis canadensis | Eastern Redbud | 1.5-2" cal/ 8-1 O' ht | B&B, 24" dia. |
| CA | 4 | Cornus alternifolia | Pagoda Dogwood | 1.5-2" cal/ 8-1 O' ht | B&B, 24" dia. |
| **EVERGREEN TREES** | | | | | |
| PW | 3 | Pinus strobus* | White Pine | 6'-7' ht | B&B, 24" dia. |
| **TOTAL** | **60** | | | | |

## TIMELINE

| **Early Action Tree Work** | | |
|---|---|---|
| Removals | 102 Trees, mainly Ash | June-September 2024 |
| Planting | 60 trees pre removal | May 2024 |
| Planting | 140 Early Action Trees | Starting Fall 2024 |

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# VEGETATION MANAGEMENT

## SECOND PHASE

### APRIL 2024- JANUARY 2025

### TASK 1- INITIAL INVESTIGATIONS

- Tree inventory, invasive species inventory, soil testing

### TASK 2- DRAFT PLAN & STRATEGIES

- Draft planting plan, plant list, invasive species management plan & soil management plan

### TASK 3- DRAFT MAINTENANCE PLAN

- Drafts of monitoring schedule, assessment program, maintenance plan for trees and invasives and volunteer opportunities

### TASK 4- FINAL VEGETATION MANAGEMENT PLAN

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# Additional Information

- Recording and tonight's slide deck will be available at:
  - www.mass.gov/dcr/past-public-meetings
- If you have comments on this project:
  - *Submit online:* www.mass.gov/dcr/public-comment
  - *Deadline: Tuesday, June 25, 2024*

*Please note: the contents of comments submitted to DCR, including your name, town and zip code, will be posted on DCR's website. Additional contact information provided, notably email address, will only be used for outreach on future updates to the subject project or property.*

- If you wish to subscribe to a DCR general information or project-related listserv: contact DCR's Office of Community Relations via email at mass.parks@mass.gov