404 Wyman Street, Ste. 375
Waltham, MA 02451
T 781.419.7696
TRCcompanies.com

December 22, 2023

Andrew Hultin
Conservation Administrator
Town Hall
75 Middle Street
Weymouth, Massachusetts 02189

Re: ***Whitman's Pond Annual Work Plan – 2024 (MassDEP File No. 81-1300)***
Weymouth, Massachusetts
TRC Project No. 479512.0000.0000

Dear Mr. Hultin,

In accordance with the Superseding Order of Conditions (SOC) issued by MassDEP (MassDEP File No. 81-1300), TRC submits this Annual Work Plan for the 2024 management season at Whitman's Pond. This Annual Work Plan is provided pursuant to Pre-Work Condition 31 of the Order of Conditions issued by the Weymouth Conservation Commission, which is incorporated by reference into the SOC.

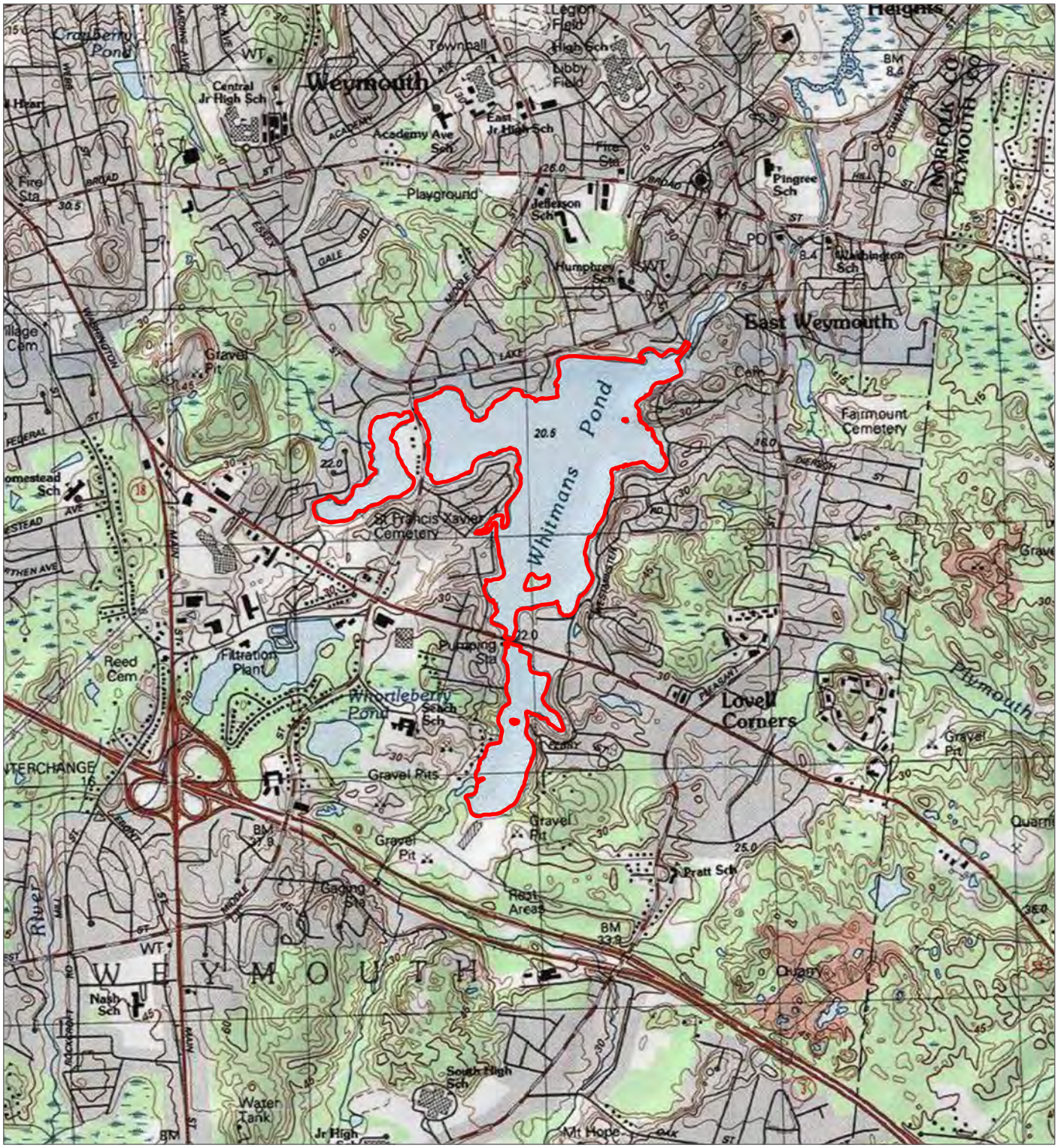
A brief description of existing conditions and past management actions is presented below, followed by the proposed management and monitoring activities for 2024.

Background

Whitman's Pond, located in the Town of Weymouth, is approximately 176 acres in size. The pond is comprised of three basins; the South Cove (located south of Washington Street), the West Cove (located west of Middle Street), and the Main Basin (located between Lake Street and Washington Street) (Figure 1). The pond supports outdoor recreation, wildlife habitat, and use as a drinking water supply (South Cove only). Whitman's Pond also provides spawning habitat for river herring.

TRC performed field monitoring activities in the summer of 2022 at Whitman's Pond. Results from the field activities guided the proposed management strategies described in the Notice of Intent (NOI) application for "Whitman's Pond Management Strategy" dated October 27, 2022 and were provided in TRC's "Whitman's Pond 2022 Annual Report" dated January 13, 2023. Several invasive aquatic plant species were observed at Whitman's Pond during the summer of 2022, including fanwort (*Cabomba caroliniana*), variable-leaf milfoil (*Myriophyllum heterophyllum*), curly-leaf pondweed (*Potamogeton crispus*), and brittle naiad (*Najas minor*).

An Order of Conditions was issued under MassDEP File No. 81-1300 by the Weymouth Conservation Commission on January 4, 2023. Following an appeal, MassDEP issued a SOC on May 5, 2023 affirming the original town-issued Order of Conditions, with the following modifications; 1) the work shall be completed within three years from the date of the Superseding Order, 2) requests for extensions, proof of recording, and requests for certificate of compliance shall be filed with MassDEP and 3) annual work plans, monitoring reports, vegetation surveys, and annual reports shall be sent to MassDEP in addition to the Weymouth Conservation Commission and the Division of Marine Fisheries (DMF).



PROJECT LOCUS

PROJECT:	**TOWN OF WEYMOUTH** **WHITMAN'S POND** **WEYMOUTH, MA**
TITLE:	**PROJECT LOCUS**
DRAWN BY: J. BERTHERMAN	PROJ. NO.: 479512.0000.0000
CHECKED BY: A. OCHS	**FIGURE 1**
APPROVED BY: M. LADEWIG	
DATE: DECEMBER 2023	

BASE MAP: USGS, TOPOGRAPHIC MAP, 2011
DATA SOURCES:
MASSDEP, HYDROGRAPHY, 2019

0 1,000 2,000 FEET

1:24,000 1" = 2,000'

TRC
10 HEMINGWAY DRIVE
2ND FLOOR
EAST PROVIDENCE, RI 02915
PHONE: 401.330.1236

FILE: 479512_WHITMANS_POND_FIG01

2023 Management and Monitoring Summary

Pre-management vegetation mapping in May 2023 identified continued, extensive growth of fanwort, variable-leaf milfoil, and curly-leaf pondweed in Whitman's Pond. At the time of survey, variable-leaf milfoil was the dominant species observed and formed dense beds in the West Cove, South Cove, and the western cove of the Main Basin (Figure 2). Growth of fanwort was also present but was observed to be less dense than variable-leaf milfoil (Figure 3). Curly-leaf pondweed was also observed in all three basins of Whitman's Pond, although it was generally observed at sparse densities.

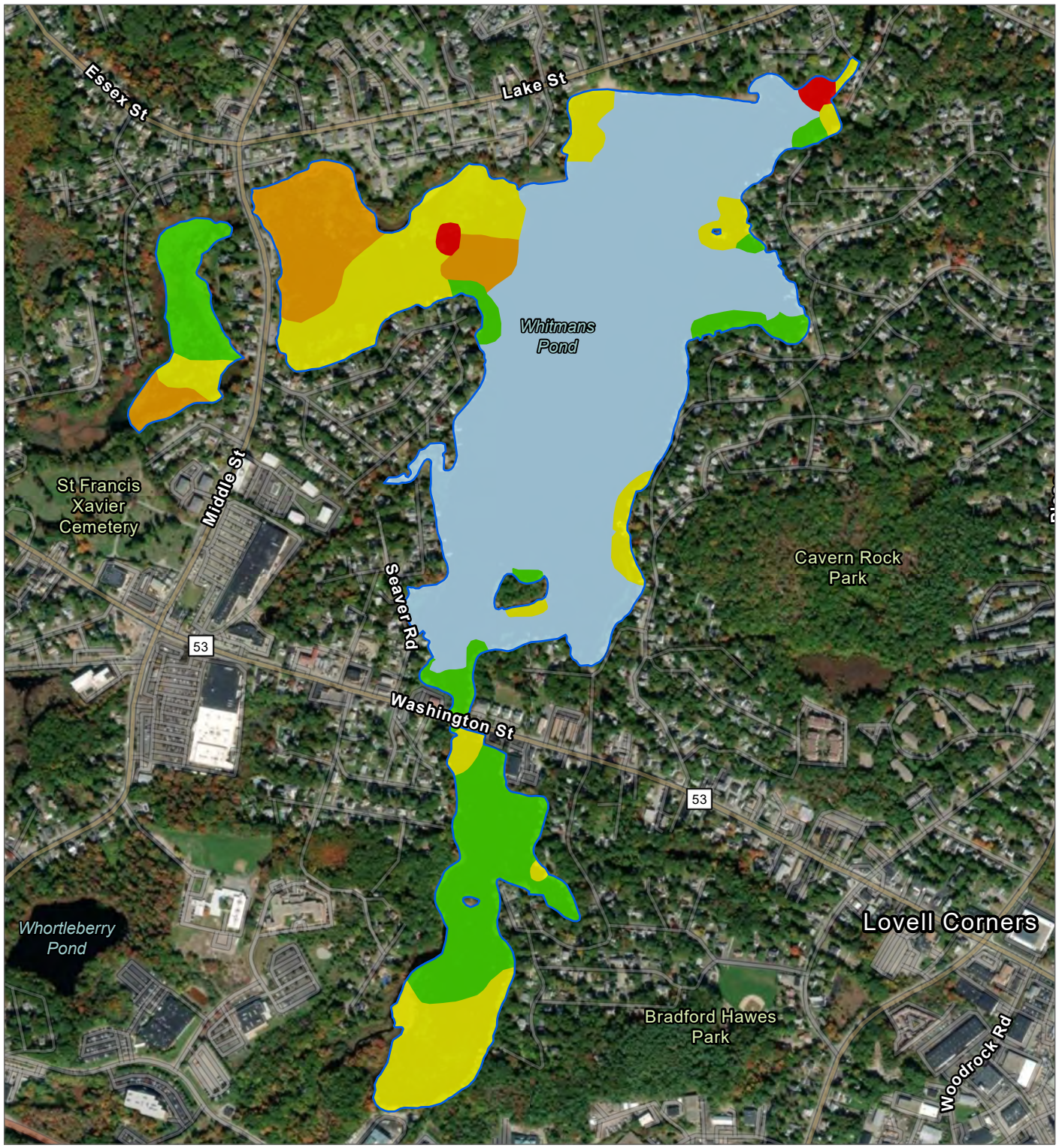
In response to the observed conditions and in accordance with the 2023 Annual Work Plan (submitted on May 26, 2023) and Superseding Order of Conditions, the Town initiated management of nuisance aquatic vegetation using mechanical harvesting and diver assisted suction harvesting (DASH). This included for mechanical harvesting and a pilot-scale DASH trial. The mechanical harvesting was focused primarily on the western cove of the Main Basin. Starting in July 2023, the Town operated the harvester for 316 hours over the course of 44 days and removed 276 cubic yards of aquatic vegetation. DASH harvesting was focused entirely within a subarea of the five-acre DASH Pilot Study Area located in the western cove of the Main Basin. The Town contracted with New England Aquatic Services to provide 70 hours of DASH over the course of eight days in August 2023. The result was the removal of 22.55 cubic yards of fanwort and variable-leaf milfoil from approximately 0.70 acres of the pond.

Post-management mapping was conducted on September 15, 2023, following the mechanical harvesting and DASH efforts. Aquatic plant growth remained extensive in Whitman's Pond at the time of the survey, covering nearly 90 acres, including all of the West Cove and South Cove, as well as large portions of the western cove of the Main Basin (Figure 4). The majority of the aquatic plant growth observed was very dense. However, significantly less dense areas were observed in the area where the DASH pilot study was conducted.

Fanwort was present in all three basins of Whitman's Pond, including the entirety of the West Cove and substantial portions of the Main Basin and most of the South Cove (Figure 5). Fanwort growth was denser compared to spring 2023 and was observed to be the dominant aquatic plant species in Whitman's Pond by September. The primary exceptions to this pattern were observed in areas where water lilies were dense enough to shade out fanwort (e.g., along the northern shoreline of the western cove of the Main Basin and the southern end of the South Cove), where DASH was used to directly remove fanwort from the DASH Pilot Study Area, and in the primary boating channel between the Middle Street access ramp and deep waters of the Main Basin.

Variable-leaf milfoil was still present in Whitman's Pond during the September survey. However, the extent and density both declined as fanwort growth surged (Figure 6). Some variable-leaf milfoil was also likely removed from the DASH Pilot Study Area, although the split between fanwort and variable-leaf milfoil volume was not explicitly tracked by the contractor.

Water quality monitoring in 2023 indicated that Whitman's Pond continues to be stressed, with low dissolved oxygen levels, excessive nutrient levels, and high turbidity. More details on observed vegetation and water quality are presented under separate cover in the 2023 Annual Monitoring Report, dated November 20, 2023.



FANWORT COVERAGE

- 0% (102.58 ACRES)
- 1% - 25% (29.70 ACRES)
- 26% - 50% (35.99 ACRES)
- 51% - 75% (16.05 ACRES)
- 76% - 100% (1.49 ACRES)

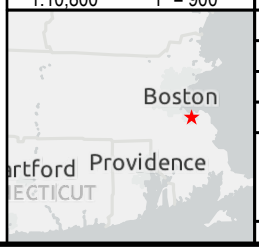
BASE MAP: ESRI WORLD IMAGERY 2022
DATA SOURCES: TRC, GPS LOCATIONS, 2023

N

0 450 900

FEET

1:10,800 1" = 900'



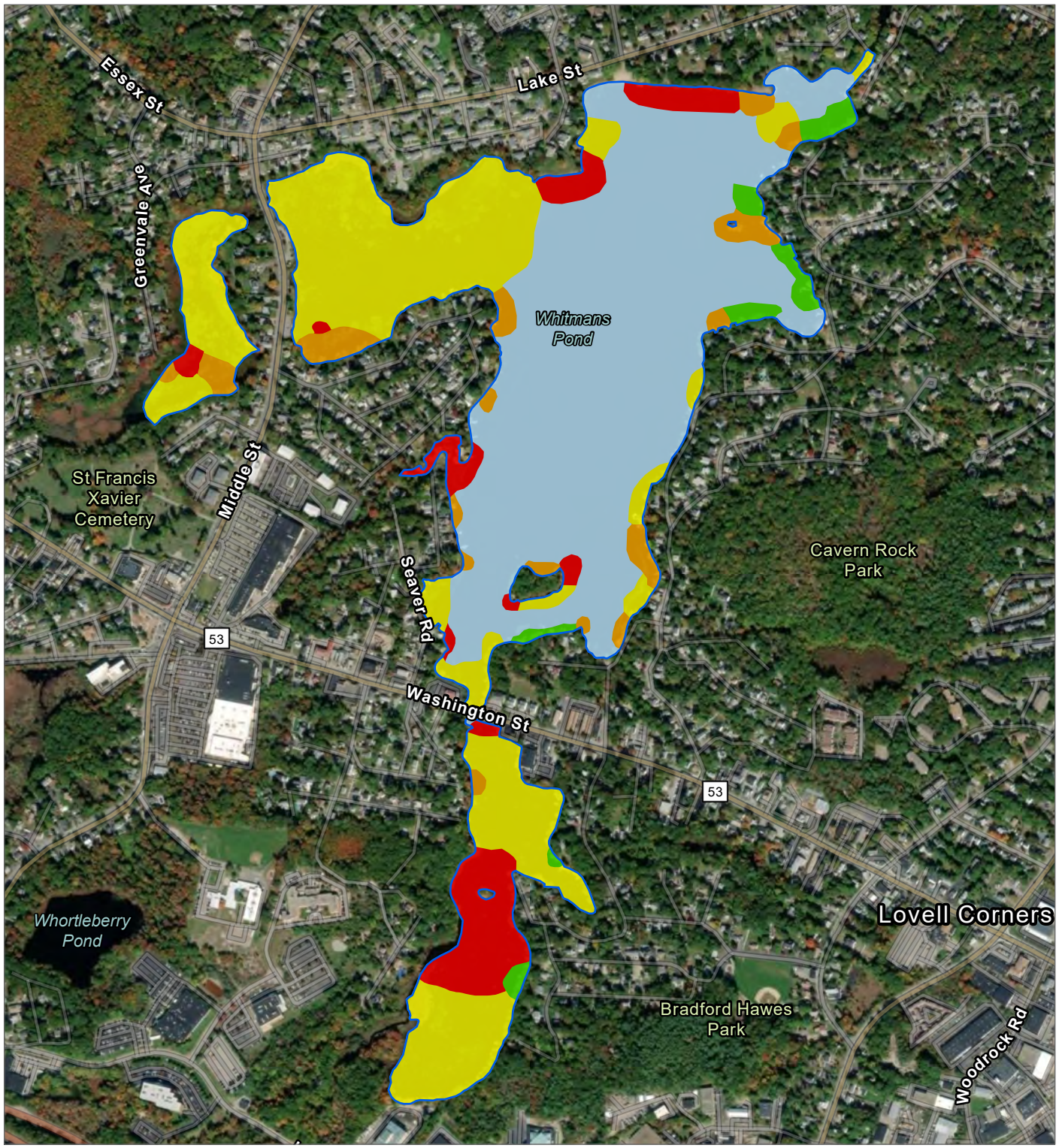
PROJECT: TOWN OF WEYMOUTH
WHITMAN'S POND
WEYMOUTH, MASSACHUSETTS

TITLE: 2023 PRE-TREATMENT FANWORT COVERAGE

DRAWN BY:	J. BERTHERMAN	PROJ. NO.:	479512.0000.0000
CHECKED BY:	A. OCHS		
APPROVED BY:	M. LADEWIG		FIGURE 2
DATE:	DECEMBER 2023		

TRC
10 HEMINGWAY DRIVE
2ND FLOOR
EAST PROVIDENCE, RI 02915
PHONE: 401.330.1236

FILE: 479512_WHITMANSPOND_PRETREATMENT_2023



VARIABLE-LEAF MILFOIL COVERAGE

- 0% (90.73 ACRES)
- 1% - 25% (5.19 ACRES)
- 26% - 50% (63.53 ACRES)
- 51% - 75% (9.99 ACRES)
- 76% - 100% (16.37 ACRES)

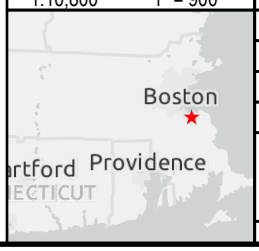
BASE MAP: ESRI WORLD IMAGERY 2022
DATA SOURCES: TRC, GPS LOCATIONS, 2023

N

0 450 900

FEET

1:10,800 1" = 900'



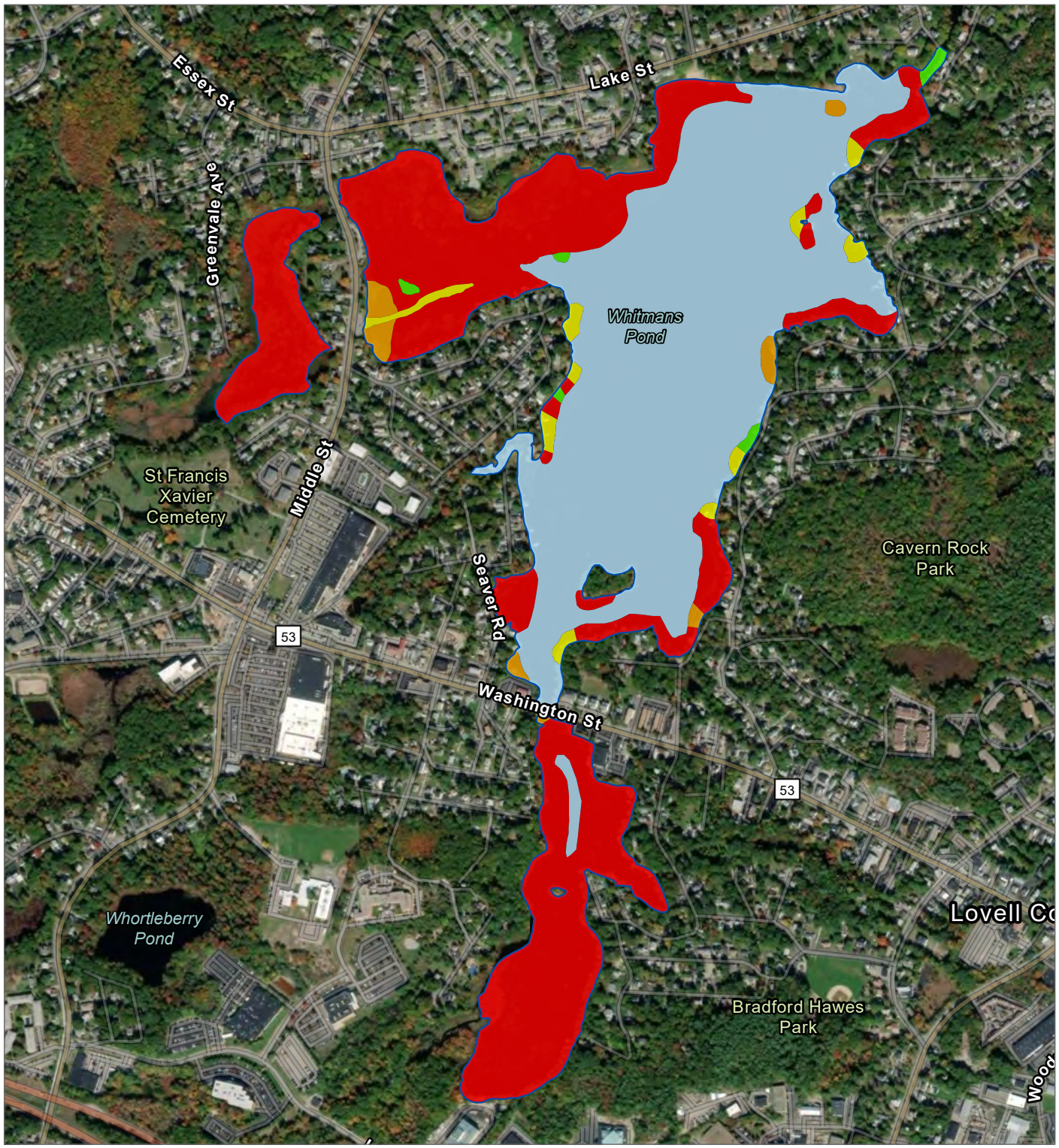
PROJECT: **TOWN OF WEYMOUTH**
WHITMAN'S POND
WEYMOUTH, MASSACHUSETTS

TITLE: **2023 PRE-TREATMENT VARIABLE-LEAF MILFOIL COVERAGE**

DRAWN BY:	J. BERTHERMAN	PROJ. NO.:	479512.0000.0000
CHECKED BY:	A. OCHS		
APPROVED BY:	M. LADEWIG		**FIGURE 3**
DATE:	DECEMBER 2023		

TRC
10 HEMINGWAY DRIVE
2ND FLOOR
EAST PROVIDENCE, RI 02915
PHONE: 401.330.1236

FILE: 479512_WHITMANSPOND_PRETREATMENT_2023



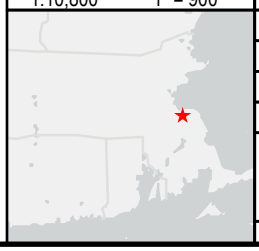
PLANT COVER

- 0% (99 ACRES)
- 1% - 25% (0.99 ACRES)
- 26% - 50% (3.5 ACRES)
- 51% - 75% (2.8 ACRES)
- 76% - 100% (80 ACRES)

BASE MAP: ESRI WORLD IMAGERY 2022
DATA SOURCES: TRC, GPS LOCATIONS, 2023

N

0 450 900
FEET
1:10,800 1" = 900'



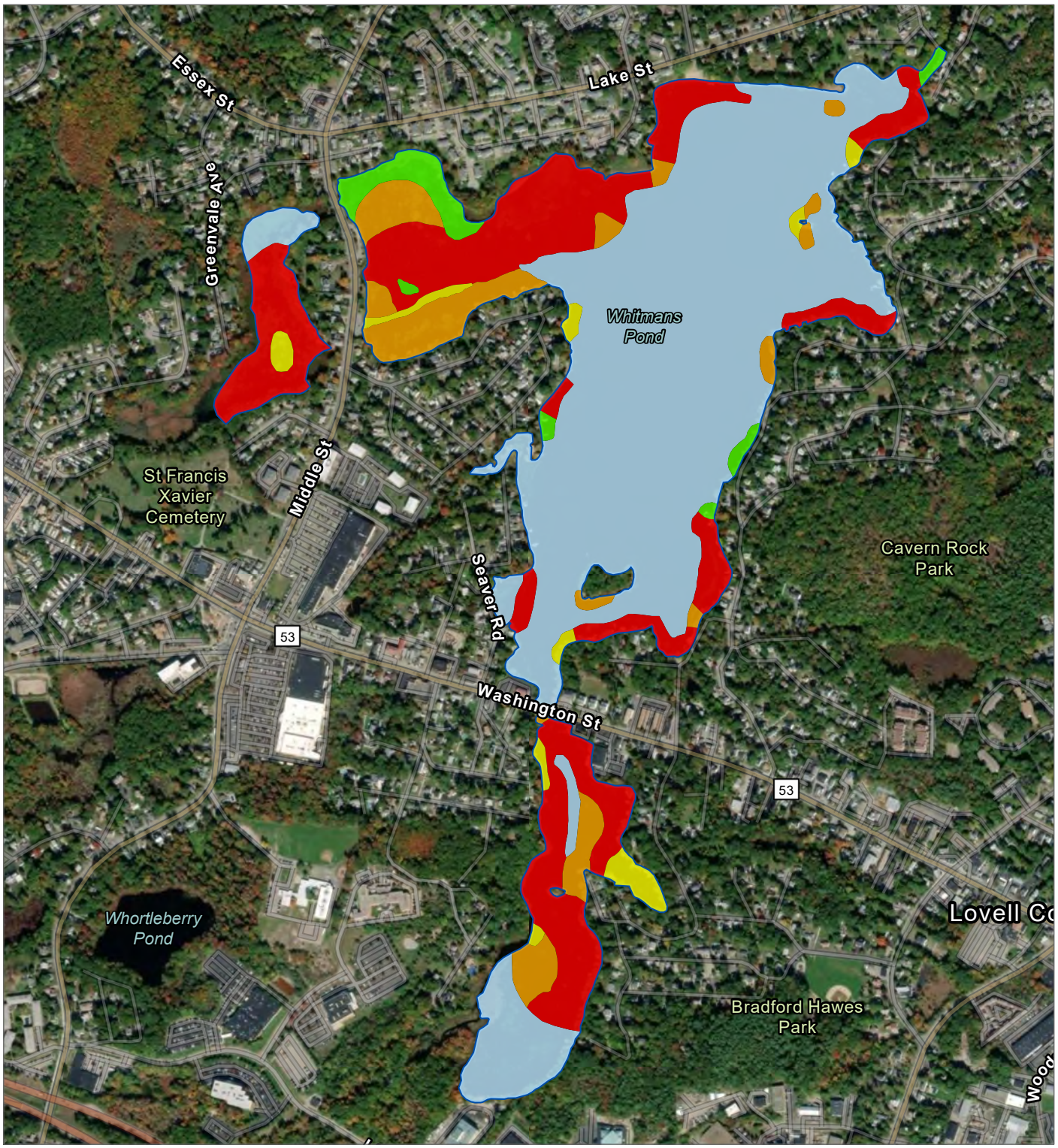
PROJECT: **TOWN OF WEYMOUTH**
WHITMAN'S POND
WEYMOUTH, MASSACHUSETTS

TITLE: **2023 POST-TREATMENT TOTAL PLANT COVERAGE**

DRAWN BY:	K. BACHAND	PROJ. NO.:	479512.0000.0000
CHECKED BY:	A. OCHS		
APPROVED BY:	M. LADEWIG		**FIGURE 4**
DATE:	DECEMBER 2023		

TRC
10 HEMINGWAY DRIVE
2ND FLOOR
EAST PROVIDENCE, RI 02915
PHONE: 401.330.1236

FILE: 479512_WHITMANSPOND_POSTTREAT_FIGS



FANWORT COVER

- 0% (111 ACRES)
- 1% - 25% (5.3 ACRES)
- 26% - 50% (4.9 ACRES)
- 51% - 75% (16 ACRES)
- 76% - 100% (49 ACRES)

BASE MAP: ESRI WORLD IMAGERY 2022
DATA SOURCES: TRC, GPS LOCATIONS, 2023

N

0 450 900

FEET

1:10,800 1" = 900'

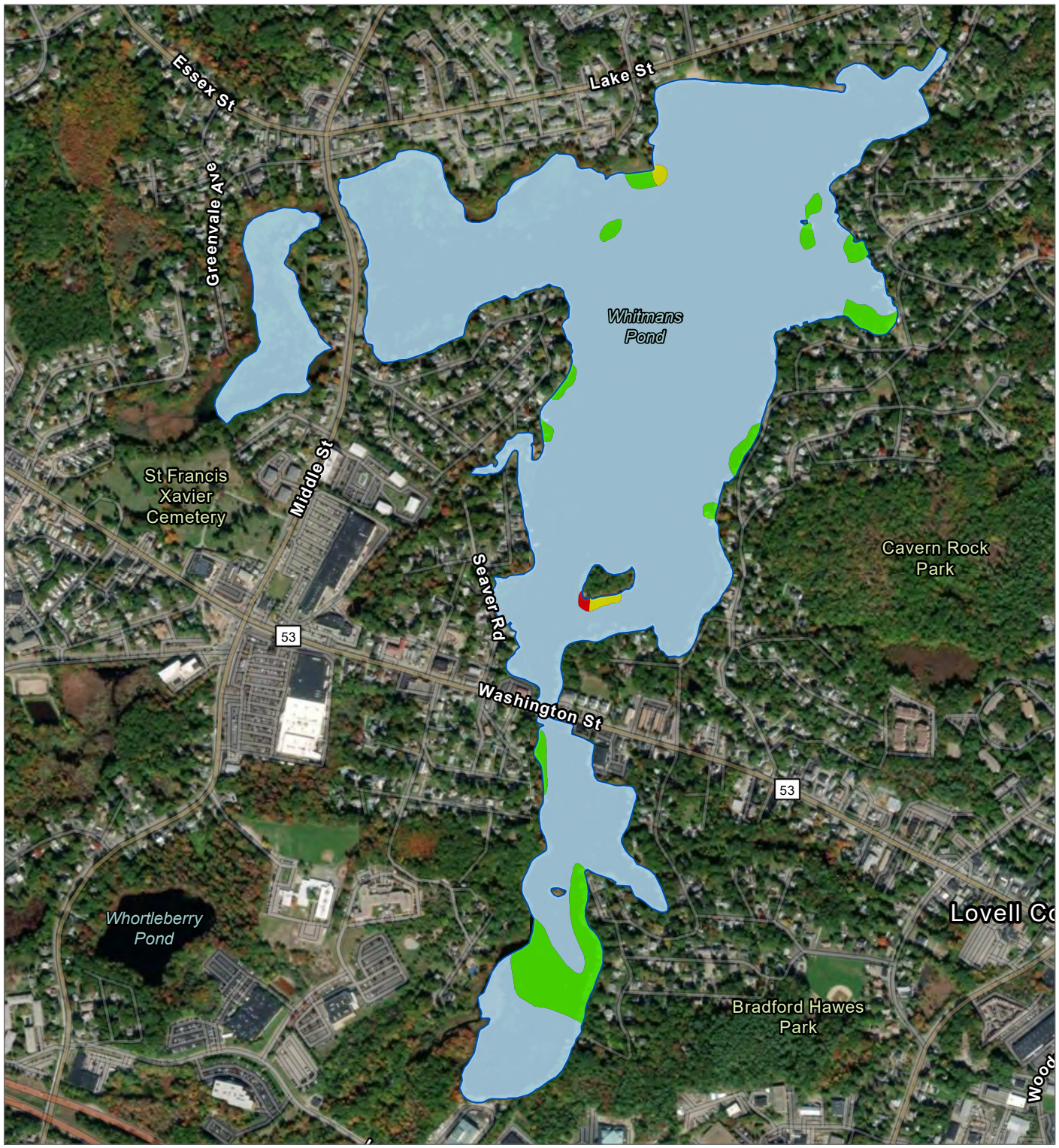
PROJECT: **TOWN OF WEYMOUTH**
WHITMAN'S POND
WEYMOUTH, MASSACHUSETTS

TITLE: **2023 POST-TREATMENT FANWORT COVERAGE**

DRAWN BY:	K. BACHAND	PROJ. NO.:	479512.0000.0000
CHECKED BY:	A. OCHS		
APPROVED BY:	M. LADEWIG		**FIGURE 5**
DATE:	DECEMBER 2023		

TRC
10 HEMINGWAY DRIVE
2ND FLOOR
EAST PROVIDENCE, RI 02915
PHONE: 401.330.1236

FILE: 479512_WHITMANSPOND_POSTTREAT_FIGS



VARIABLE LEAF MILFOIL COVER

- 0% (176 ACRES)
- 1% - 25% (9.6 ACRES)
- 26% - 50% (0.46 ACRES)
- 51% - 75% (0 ACRES)
- 76% - 100% (0.13 ACRES)

BASE MAP: ESRI WORLD IMAGERY 2022
DATA SOURCES: TRC, GPS LOCATIONS, 2023

N

0 450 900
FEET
1:10,800 1" = 900'

PROJECT: **TOWN OF WEYMOUTH**
WHITMAN'S POND
WEYMOUTH, MASSACHUSETTS

TITLE:
2023 POST-TREATMENT VARIABLE-LEAF MILFOIL COVERAGE

DRAWN BY:	K. BACHAND	PROJ. NO.:	479512.0000.0000
CHECKED BY:	A. OCHS		
APPROVED BY:	M. LADEWIG		**FIGURE 6**
DATE:	DECEMBER 2023		

TRC
10 HEMINGWAY DRIVE
2ND FLOOR
EAST PROVIDENCE, RI 02915
PHONE: 401.330.1236

FILE: 479512_WHITMANSPOND_POSTTREAT_FIGS

Proposed Management

For 2024, TRC recommends using both physical and chemical measures to control nuisance aquatic plant growth in Whitman's Pond. The recommended activities include mechanical harvesting, DASH, and herbicide treatments. More details about the location, extent, and duration of each activity are provided in the following sections. A schedule of the anticipated management activities is included in Table 1.

Mechanical Harvesting

Mechanical harvesting, which involves cutting and pulling aquatic plants using a specially equipped watercraft, is an effective short-term approach and is recommended for control of plant biomass in areas where vessel traffic is likely to be highest at Whitman's Pond. The Town owns and operates its own mechanical harvester, so contractor involvement is unlikely to be needed.

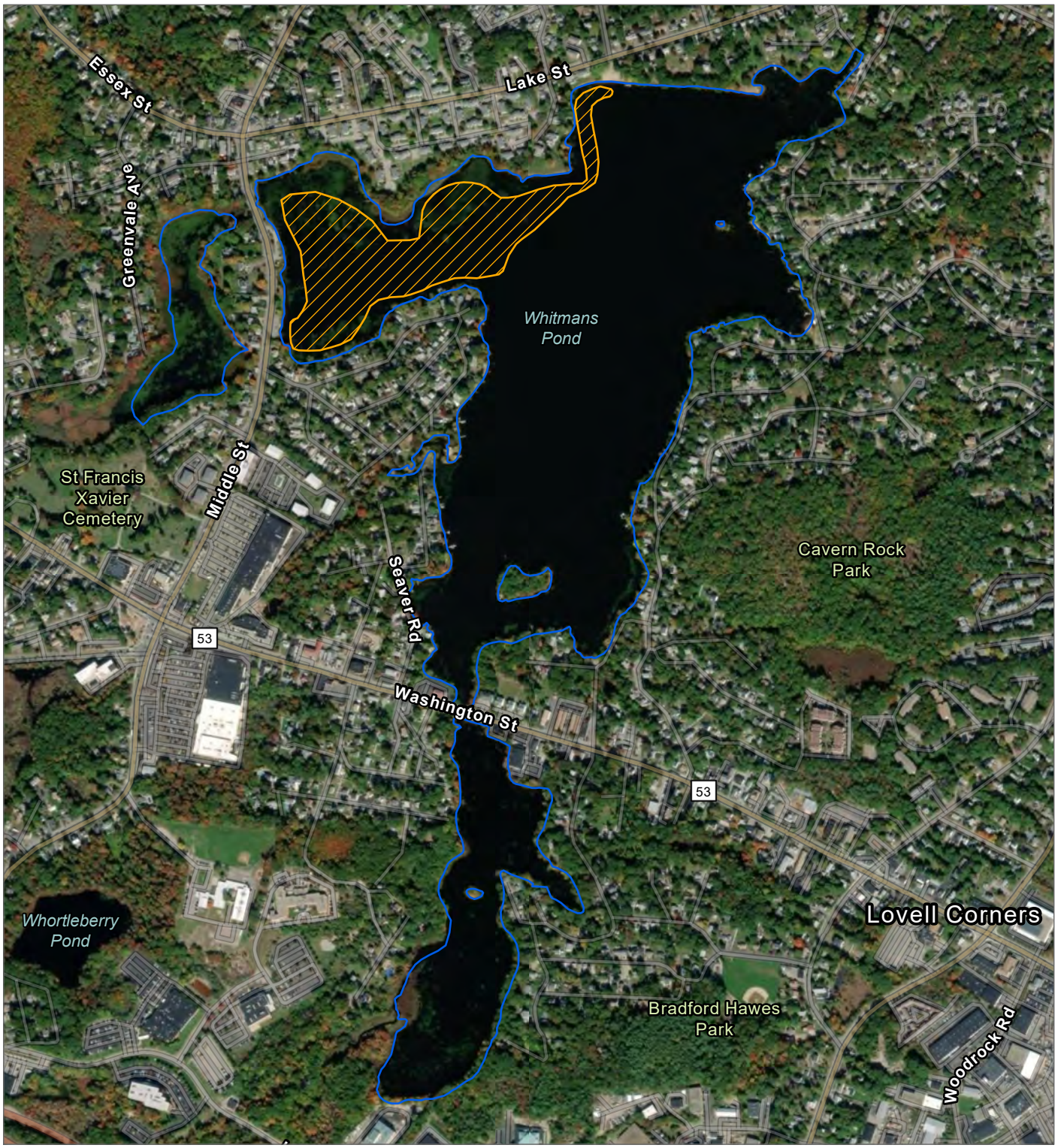
Mechanical harvesting is recommended for the area approximately along and north of a line between the Middle Street boat launch at the west end and the Lake Street public access at the north (Figure 7). The mechanical harvester may also be used to clear small portions of adjacent areas and areas targeted for DASH harvesting. TRC recommends using a GPS device to track the location of the mechanical harvester while in operation. The positional data would aid in mapping the areas treated by mechanical harvesting.

Harvesting in the target areas will help maintain clear boat channels from the Middle Street boat launch to deeper waters of the Main Basin and will help to maintain clear launch points at the Lake Street public access for canoes and kayaks. Aquatic vegetation has been mechanically harvested in this area by the Town in previous years, and TRC recommends that the Town continue this management approach in 2024. Harvesting is recommended for the period during which aquatic plant biomass is at its peak, from July through August and possibly into September, as the need for clearing arises and resources allow.

Diver Assisted Suction Harvesting (DASH)

During DASH operations, divers harvest plants by using a hose lift system to transport pulled plants to a collection vessel at the surface. DASH is effective in minimizing fragmentation that may occur during dive operations and is efficient in reducing the time it takes for divers to return to the water's surface with harvested plants. Unlike mechanical harvesting, DASH allows for more selective control of nuisance plants and can be used for precision management. DASH efforts in Whitman's Pond will primarily target fanwort but variable-leaf milfoil and other confirmed invasive species can also be removed if they are observed in the identified management area.

The DASH pilot project that was completed in 2023 demonstrated both the feasibility and limitations of using this approach at Whitman's Pond. If implemented in 2024, TRC recommends planning for a larger-scale DASH operation than the pilot project that was completed in 2023, focusing on a five-acre area in western cove of the Main Basin (Figure 8). By removing a larger and broader contiguous area of the target species, it is more likely that results will be sustained beyond the current growing season. Additionally, using mechanical harvesting to "pre-clear" this area of excessive biovolume a few days or weeks prior to DASH is expected to help improve the efficiency of the DASH operation. It is recommended that the Town require the selected contractor to delineate the extent of DASH operations so that harvested areas can be more readily compared to pre-management conditions as part of the monitoring program.



MECHANICAL HARVESTING AREA (22.5 ACRES)

0 450 900
FEET
1:10,800 1" = 900'

BASE MAP: USGS COLOR ORTHO IMAGERY
DATA SOURCES: TRC, MECHANICAL HARVESTING AREA, 2023

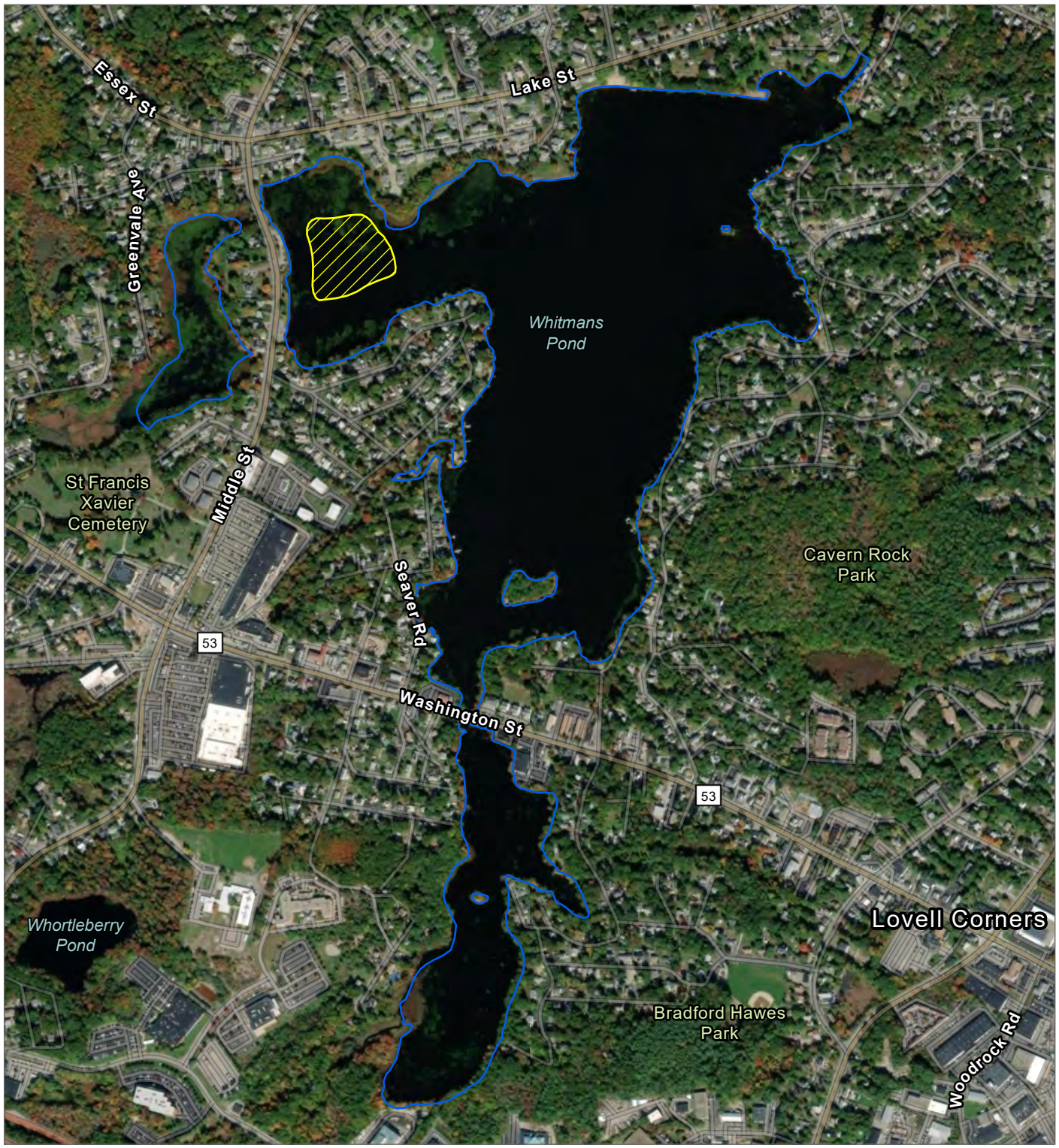
PROJECT: **TOWN OF WEYMOUTH**
WHITMAN'S POND
WEYMOUTH, MASSACHUSETTS

TITLE: **PROPOSED MECHANICAL HARVESTING AREA**

DRAWN BY:	J. BERTHERMAN	PROJ. NO.:	479512.0000.0000
CHECKED BY:	A. OCHS		
APPROVED BY:	M. LADEWIG		**FIGURE 7**
DATE:	DECEMBER 2023		

TRC
10 HEMINGWAY DRIVE
2ND FLOOR
EAST PROVIDENCE, RI 02915
PHONE: 401.330.1236

FILE: 479512_WHITMANS_OTHERFIGS_2023



DASH TREATMENT AREA (5.0 ACRES)

N

0 450 900

FEET

1:10,800 1" = 900'

BASE MAP: USGS COLOR ORTHO IMAGERY
DATA SOURCES: TRC, DASH TREATMENT AREA, 2023

PROJECT: **TOWN OF WEYMOUTH**
WHITMAN'S POND
WEYMOUTH, MASSACHUSETTS

TITLE: **PROPOSED DASH TREATMENT AREA**

DRAWN BY:	J. BERTHERMAN	PROJ. NO.:	479512.0000.0000
CHECKED BY:	A. OCHS		
APPROVED BY:	M. LADEWIG		**FIGURE 8**
DATE:	DECEMBER 2023		

TRC
10 HEMINGWAY DRIVE
2ND FLOOR
EAST PROVIDENCE, RI 02915
PHONE: 401.330.1236

FILE: 479512_WHITMANS_OTHERFIGS_2023

Herbicides

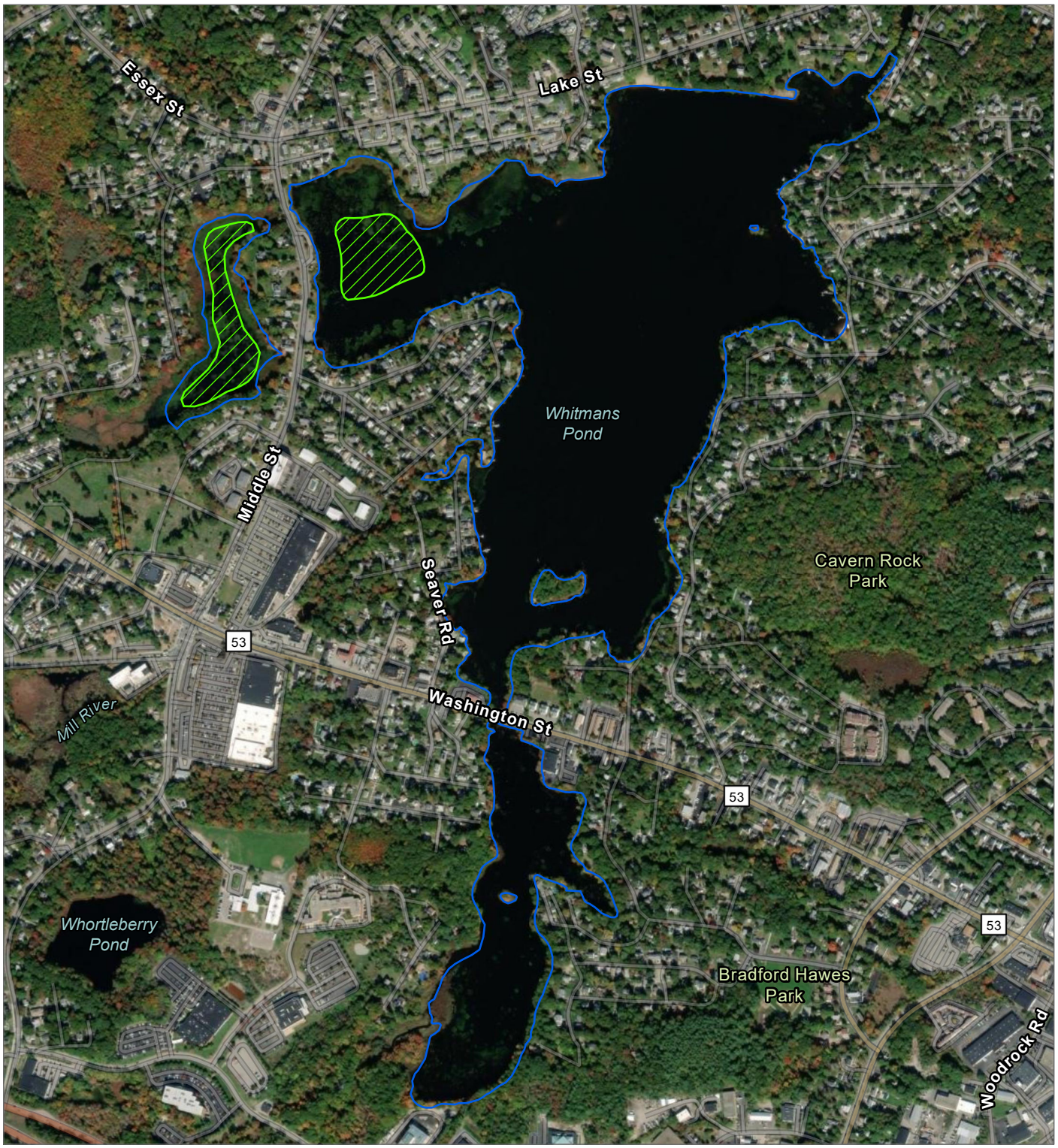
For 2024, TRC recommends pilot-scale herbicide treatments focused on the West Cove and the western cove of the Main Basin, both of which are areas known to contain very dense target species growth (Figure 9). The herbicides recommended for use are presented in the following paragraphs.

Flumioxazin – Western Cove of the Main Basin: Flumioxazin (trade name Clipper) is a fast-acting contact herbicide and works by inhibiting protoporphyrinogen oxidase (PPO), an enzyme necessary for photosynthesis. Inhibition of PPO causes destruction of plant cell plasma membranes in the presence of sunlight, resulting in rapid dieback of plant tissues. Flumioxazin's primary advantage is that it is highly effective on both fanwort and variable-leaf milfoil. Additionally, it requires very little contact time to be effective and can be successfully applied in summer, outside of the time-of-year restrictions for river herring.

For 2024, flumioxazin is recommended for use in controlling fanwort and variable-leaf milfoil in the western cove of the Main Basin, which is located in Herbicide Zone B, as defined in the *Whitman's Pond Management Strategy* (Figure 10). Where flumioxazin treatment is implemented, mechanical harvesting and DASH would not need to be used in 2024.

Fluridone – West Cove: Fluridone (trade name Sonar) is a systemic herbicide that acts as a carotenoid biosynthesis inhibitor, effectively leading to the depletion of chlorophyll. This results in chlorosis (bleaching) and the eventual starvation of the entire plant. Fluridone is highly effective on fanwort at low concentrations, with minimal impact to most other non-target plants. However, these target fluridone concentrations must be maintained for a relatively long period of time (at least 45 days) to achieve effective treatment.

For 2024, fluridone is recommended for use in controlling fanwort and other exotic species growth in the West Cove, which is located in Herbicide Zone A, as defined in the *Whitman's Pond Management Strategy* (Figure 10). To use this approach in the West Cove, the Town may first be required to temporarily screen the connecting culvert under Middle Street, in order to prevent entry of river herring into the West Cove. However, the details of the culvert screening requirement will be confirmed with DMF before proceeding with fluridone treatment in the West Cove.



HERBICIDE TREATMENT AREAS (10.0 ACRES)

0 450 900
FEET
1:10,800 1" = 900'

BASE MAP: USGS COLOR ORTHO IMAGERY
DATA SOURCES: TRC, HERBICIDE TREATMENT AREAS, 2024

PROJECT: **TOWN OF WEYMOUTH**
WHITMAN'S POND
WEYMOUTH, MASSACHUSETTS

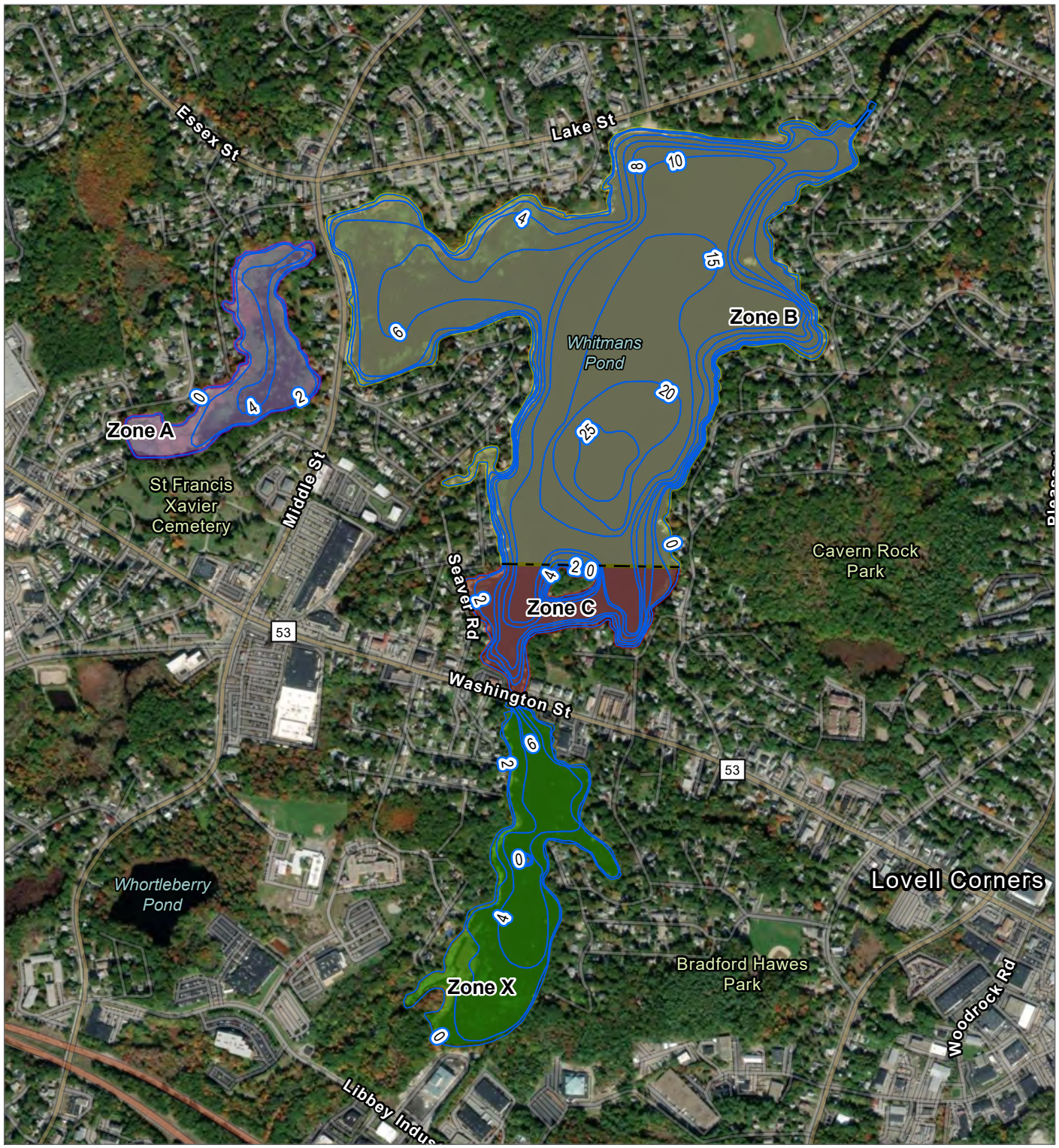
TITLE: **PROPOSED HERBICIDE TREATMENT AREAS**

DRAWN BY:	K. BACHAND	PROJ. NO.:	479512.0000.0000
CHECKED BY:	A. OCHS		
APPROVED BY:	M. LADEWIG		**FIGURE 9**
DATE:	JANUARY 2024		

TRC
10 HEMINGWAY DRIVE
2ND FLOOR
EAST PROVIDENCE, RI 02915
PHONE: 401.330.1236

FILE: 479512_WHITMANS_OTHERFIGS_2023

COORDINATE SYSTEM: NAD 1983 STATEPLANE MASSACHUSETTS MAINLAND FIPS 2001; MAP ROTATION: 0
-- SAVED BY: KBACHAND ON 1/23/2024 17:26:50 PM; FILE PATH: T:\1-PROJECTS\TOWNOFWEYMOUTH\479512_WHITMANS_POND\2-APRX\479512_WHITMANS_OTHERFIGS_2023\479512_WHITMANS_OTHERFIGS_2023.APRX; LAYOUT NAME: FIG09 HERBICIDE TREATMENT



TRANSITION ZONE

BATHYMETRY DEPTH CONTOURS (2 FT INTERVALS)

HERBICIDE USE RESTRICTION ZONES

ZONE A

ZONE B

ZONE C

ZONE X - HERBICIDES ARE RESTRICTED

BASE MAP: USGS COLOR ORTHO IMAGERY
DATA SOURCES: TRC, BATHYMETRY CONTOURS, 2022
TRC, HERBICIDE MANAGEMENT ZONES, 2022
MASSGIS, MASSDEP HYDROGRAPHY, 2019

0 500 1,000 FEET

1:12,000 1" = 1,000'

PROJECT:
TOWN OF WEYMOUTH
WHITMAN'S POND
WEYMOUTH, MA

TITLE:
HERBICIDE USE RESTRICTION ZONES

DRAWN BY:	J. BERTHERMAN	PROJ. NO.:	479512.0000.0000
CHECKED BY:	A. OCHS		
APPROVED BY:	M. LADEWIG		**FIGURE 10**
DATE:	DECEMBER 2023		

TRC
10 HEMINGWAY DRIVE
2ND FLOOR
EAST PROVIDENCE, RI 02915
PHONE: 401.330.1236

FILE: 479512_WHITMANSPOND_HERBICIDEMGMTZONES_FIG02

COORDINATE SYSTEM: NAD 1983 STATEPLANE MASSACHUSETTS MAINLAND FIPS 2001; MAP ROTATION: 0
-- SAVED BY: JBERTHERMAN ON 12/20/2023 13:50:58 PM -- FILE PATH: T:\1-PROJECTS\TOWNOFWEYMOUTH\479512_WHITMANS_POND\2-APRX\FIG02_HERBICIDE_MANAGEMENT_ZONES\479512_WHITMANSPOND_HERBICIDEMGMTZONES_FIG02 APRX: LAYOUT NAME: 8.5X11P_NOINSET1

Table 1. 2024 Management and Monitoring Activities at Whitman's Pond

Proposed Activity	Month					Basin	Notes
	May	June	July	August	September		
Mechanical Harvesting			X	X	X	Main Basin	To focus on area along and north of line between Middle Street boat launch and the Lake Street public access.
DASH				X	X	Main Basin	To focus on western cove of Main Basin. Not likely to be used in 2024 if herbicide treatment applied in this area.
Herbicide Treatments - Flumioxazin			X			Main Basin	Application to western cove of Main Basin. Not likely to be used in areas where DASH is implemented (if any).
Herbicide Treatments - Fluridone			X	X	X	West Cove	Requires concentrations to be sustained for 45 to 90 days.
Aquatic Vegetation Mapping	X				X	Main Basin, South Cove, West Cove	Pre-management mapping to occur in spring (May or June). Post-management mapping to occur within one month of end of management activities or no later than October 15.
Basic Water Quality Monitoring	X		X		X	Main Basin, South Cove, West Cove	To occur May, July, and September following completion of management efforts.
Supplemental Water Quality Monitoring			X	X	X	Main Basin side of Middle Street culvert	Monitoring expected to last for a 21-day period. Timing will depend on actual dates of treatment.

Proposed Monitoring

TRC recommends the following proposed monitoring activities for 2024. A schedule of the anticipated monitoring activities is included in Table 1.

Proposed water quality monitoring includes at least three water quality events at the five established monitoring stations. These events will be spread out over the growing season to include at least one pre-management sampling event prior to July and at least one post-management sampling event.

Additional monitoring will be conducted at a supplemental station in the western cove of the Main Basin to track herbicide concentrations and water quality conditions prior to and following treatments. This additional monitoring will be conducted 24 hours prior to the application of herbicide to establish pre-treatment conditions. Post-application monitoring will be conducted 24 hours, 48 hours, 5 days, 7 days, 14 days, and 21 days after treatment.

It is anticipated that the treatment contractor will be responsible for the monitoring of herbicide concentrations but that all other water quality data will be collected by a third party.

Additionally, pre- and post-management aquatic plant mapping events are proposed pondwide. The pre-management event should be completed in May or June to reassess the level of target species growth in Whitman's Pond. The post-management event should generally be completed within one month of the end of management activities or no later than October 15, whichever is earlier.

Aquatic Vegetation Mapping

TRC proposes two rounds of aquatic vegetation mapping to monitor the effectiveness of the 2024 management activities and to guide recommendations of future management (Table 1). Mapping efforts will be conducted from a vessel and will be completed using sampling devices (e.g., plant rakes) and/or underwater cameras. At each sampling location, the distribution, cover, and biovolume of aquatic plant species will be mapped, with a focus on invasive species.

TRC proposes that early season vegetation mapping (pre-management) event at Whitman's Pond be conducted in late May or early June to capture the full extent and density of variable-leaf milfoil (*Myriophyllum heterophyllum*) and curly-leaf pondweed (*Potamogeton crispus*). The growth of both of these species in Whitman's Pond peaks in late spring or early summer based on TRC's observations of aquatic vegetation in 2023. A second vegetation mapping (post-management) event is proposed following herbicide and/or DASH efforts to track the effectiveness of these activities, combined with mechanical harvesting, over the course of the summer. The post-management event should generally be completed within one month of the end of management activities or no later than October 15, whichever is earlier.

In addition to mapping aquatic vegetation, TRC recommends that the Town retain records of mechanical harvesting and contractor DASH effort, including hours logged and volume of plant matter removed. Herbicide treatments should also be documented with regard to extent and concentration of each application, including any booster treatments associated with Sonar (fluridone), if used.

Water Quality Monitoring

TRC recommends assessment of water quality in the South Cove, West Cove, and Main Basin in 2024 (Figure 11). If herbicides are used in 2024, the recommended water quality monitoring program will be broken into routine and supplemental portions, with the latter specifically intended to track herbicide concentrations and water quality conditions prior to and following treatments. If herbicides are not used, then only the routine water quality monitoring program is recommended.

Routine Water Quality Monitoring Program

TRC proposes that three rounds of water quality sampling be conducted in May, July, and September of 2024 (Table 1). Water quality sampling will be consistent with the water quality assessment performed in the summer of 2023 for the South Cove, West Cove, Main Basin outlet, Main Basin surface, and Main Basin bottom sampling stations (Figure 11). Parameters to be measured at each water quality sampling site include temperature, dissolved oxygen, specific conductance, pH, turbidity, apparent color, Secchi disk transparency, total nitrogen, total phosphorus, dissolved phosphorus, and *E. coli*. In addition, chlorophyll a, and phytoplankton enumeration and identification samples will be collected at the surface of the Main Basin.

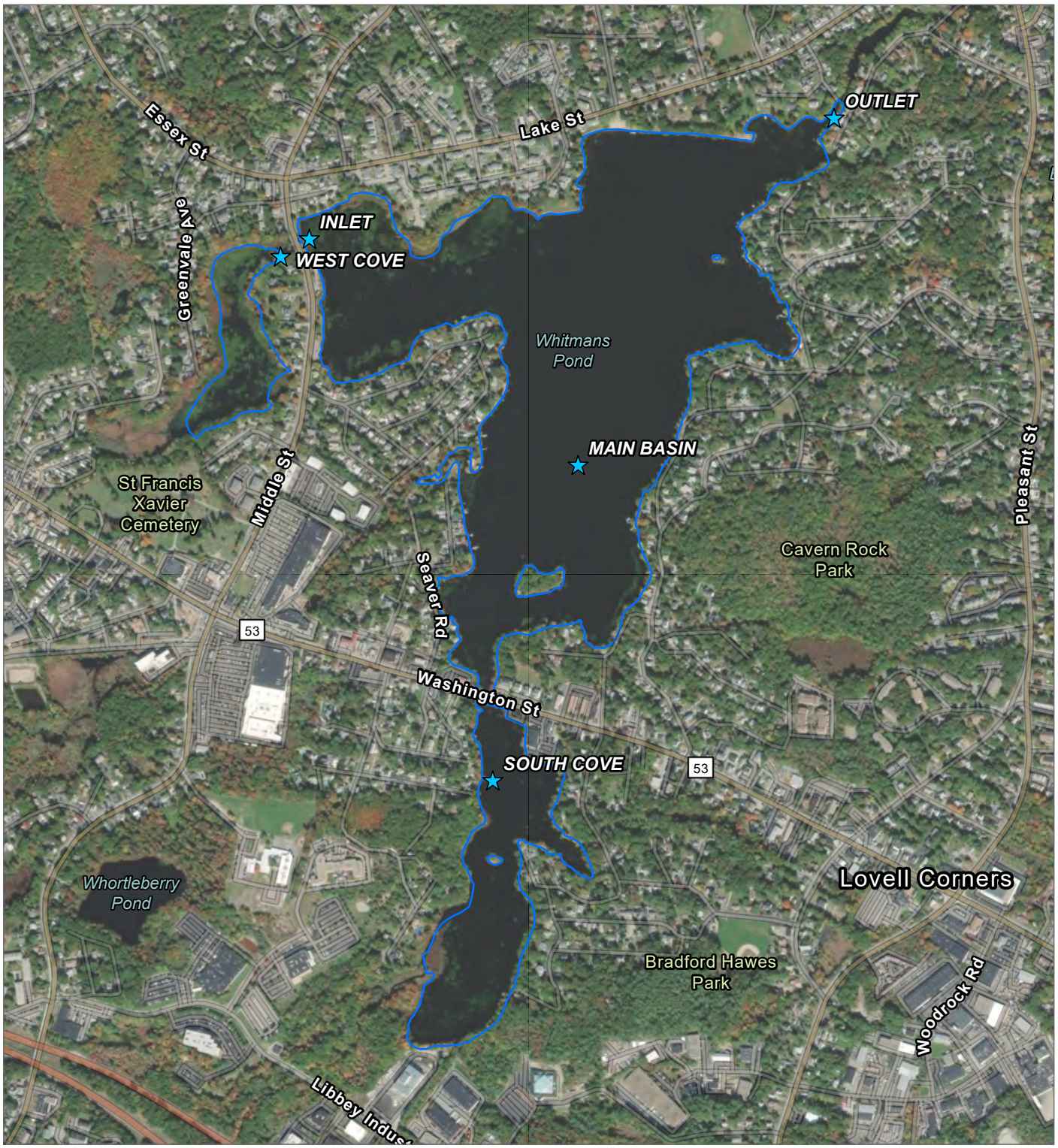
Supplemental Water Quality Monitoring Program

If herbicides are applied in 2024, additional monitoring will be conducted in the West Cove and at a supplemental station in the western cove of the Main Basin to track herbicide concentrations and water quality conditions prior to and following the treatments. The supplemental station will be located on the Main Basin side of the culvert located at Middle Street (Figure 11).

Monitoring will be conducted 24 hours prior to the application of herbicide to establish pre-treatment conditions. Post-application monitoring will be conducted 24 hours, 48 hours, 5 days, 7 days, 14 days, and 21 days after initial treatment.

Parameters to be measured include temperature, dissolved oxygen, specific conductance, pH, turbidity, apparent color, Secchi disk transparency, total nitrogen, total phosphorus, dissolved phosphorus, *E. coli*, chlorophyll a, phytoplankton enumeration and identification, and herbicide concentration.

It is anticipated that the treatment contractor will be responsible for the monitoring of herbicide concentrations but that all other water quality data will be collected by a third party.



WATER QUALITY SAMPLING LOCATION

WHITMAN'S POND SHORELINE

* NOTE: WEST COVE BACKUP SAMPLING LOCATION WAS USED INSTEAD OF THE PREFERRED WEST COVE SAMPLING LOCATION AS NECESSARY DURING DRY CONDITIONS.

PROJECT: **TOWN OF WEYMOUTH**
WHITMAN'S POND
WEYMOUTH, MA

TITLE:
WATER QUALITY SAMPLING LOCATIONS

DRAWN BY:	J. BERTHERMAN	PROJ. NO.:	479512.0000.0000
CHECKED BY:	A. OCHS		
APPROVED BY:	M. LADEWIG		**FIGURE 11**
DATE:	DECEMBER 2023		

BASE MAP: ESRI WORLD IMAGERY, 2022
DATA SOURCES: TRC, GPS DATA, 2022
MASSDEP, HYDROGRAPHY, 2019

0 500 1,000 FEET

1:12,000 1" = 1,000'

TRC
10 HEMINGWAY DRIVE
2ND FLOOR
EAST PROVIDENCE, RI 02915
PHONE: 401.330.1236

FILE: 479512_WHITMANSPOND_OTHERFIGURES2022

COORDINATE SYSTEM: NAD 1983 2011 STATEPLANE MASSACHUSETTS MNLD FIPS 2001 FTUS; MAP ROTATION: 0
-- SAVED BY: JBERTHERMAN ON 12/20/2023 13:54:21 PM -- FILE PATH: T:\1-PROJECTS\TOWNOFWEYMOUTH\479512_WHITMANS_POND\2-APRX\479512_WHITMANSPOND_OTHERFIGURES2022479512_WHITMANSPOND_OTHERFIGURES2022.APRX -- LAYOUT NAME: 479512_WHITMANSPOND_WQ

Annual Report

TRC will develop an annual monitoring report to document the management activities completed at Whitman's Pond over the course of the calendar year. This report will summarize the monitoring results, including both water quality and aquatic vegetation mapping data. The results will be used to track conditions at Whitman's Pond and to assess the effectiveness of the 2024 management activities. The annual report will also provide recommendations for management and monitoring actions to be performed at the pond in 2025. The annual report will be submitted to the Weymouth Conservation Commission by November 15, 2024, and will also be provided to MassDEP and the DMF per requirements of the Superseding Order of Conditions.

Should the Commission have any questions or comments regarding the 2024 proposed management activities at Whitman's Pond, feel free to contact the undersigned at mladewig@trccompanies.com or at (401) 330-1204.

Sincerely,

TRC ENVIRONMENTAL CORPORATION

Matt Ladewig, CLM
Project Director