• Ecology
• Soil & Wetland Studies
• Water Quality Monitoring • GPS
• Environmental Planning & Management
• Ecological Restoration & Habitat Mitigation
• Aquatic, Wildlife and Listed Species Surveys
• Application Reviews • Permitting & Compliance

January 25, 2021

City of Middletown
Inland Wetlands and Watercourses Agency
Department of Planning, Conservation and Development
245 DeKoven Drive, Suite 202
Middletown, CT 06457

ATTN: Mr. Joseph Carta, Chairman

RE: **POND REHABILITATION/MAINTENANCE**
97 Poplar Road, Middletown, CT
REMA Job #15-1787-MID19

Dear Mr. Carta and Agency Members:

At the request of Ameritage, LLC, REMA ECOLOGICAL SERVICES, LLC (REMA) has prepared this brief letter, to be submitted as part of an application before the City of Middletown's Inland Wetlands and Watercourses Agency ("the Agency," IWWA), to rehabilitate and maintain a shallow pond/marsh ("the pond"), located at the above-referenced property. REMA conducted a site visit on January 13th, 2021, to observe existing conditions at the subject regulated area.

The subject pond/marsh was developed through excavation and construction of an earthen berm sometime between 1970 and 1986, based on archival aerial photography (i.e., UConn MAGIC)[1]. Roughly 2/3rd or +/- 1,250 square feet of the pond occur on the property, while the southern half is located within an electric power line corridor owned by Eversource (see Figures A and B, attached).

[1] The 1975 and 1980 archival aerial photographs are only physically available at the Connecticut State Library, Hartford.

Observable dominant vegetation at the time of the site visit included cattails, willows, silky dogwood, sedges, purple willowherbs, wool grass, and grasses. Stream flow entered the "pond" area from the south via a severely eroded channel, flowing northerly in a shallow channel along the western edge of the "pond" to twin RCPs at the outlet (see attached annotated photos). With the exception of this shallow channel, no standing water was observed.

Exploration with a soil auger within the aforementioned shallow channel revealed two or three inches of coarse sediment (i.e., sand and gravel). However, finer sediment with incorporated organic matter was observed below the "channel bed." These finer and waterlogged sediments extended at least 42 inches below the surface, the length of our soil auger (see Photo 4, attached). At the southern end of the pond, just below the eroded inlet channel, 8 to 10 inches of coarse sediment, including pea size gravel, was noted, again above finer sediment (see Photo 2, attached). The texture of this sediment is similar to what was observed in the eroded channel upgradient of the "pond." This would indicate that it is of relatively recent origin, and was likely deposited here when the intermittent stream channel eroded during a significant storm event, or series of storm events.

The finer sediment below the more recent deposits would indicate that this pond has been slowly filling for the past 3 to 4 decades. This natural accretion of sediment and organic matter typical of small waterbodies. The presence of mature willows and silky dogwood shrubs within the "pond" proper (see Photo 1, attached), especially closer to the inlet, would also indicate that accelerated accretion has taken place over the past decade. For instance, a September 2017 aerial photograph, taken before any substantial work upgradient associated with second phase of the residential development, shows the pond to be completely vegetated with emergent vegetation and shrubs, with no evidence of open water (see Figure C, attached).

During the site visit we noted that the temporary bridge structure used by Eversource to cross the wetland/watercourse corridor upgradient of pond, may be in fact accelerating the velocities of flows to the downgradient segment of the stream. All of the severe channel erosion that has resulted in the recent deposition of sediment to the pond is downgradient of the temporary bridge.

Quite often small ponds need to be dredged or maintained, and this pond has had little depth to it for many years. The rehabilitation/maintenance of the pond would include:

1. Removal of accumulated (i.e., accreted) sediment during the dry low flow season, typically July through September.

2. Leaving an aquatic shelf on the east side of the pond, closer to its outlet. This would extend 3 to 4 feet from the pond edge, be 6 to 12 inches below the inlet invert elevation of the pipes, and allow for marsh and meadow type vegetation to be established.

In conclusion, the removal of accumulated sediment will enhance the functions and values of this regulated area for many years into the future, until maintenance is again required. However, we would recommend that this work be done after Eversource has completed their work with the electric right-of-way, the temporary bridge has been removed, and any affected areas (i.e., wetlands and adjacent uplands) have been property stabilized.

Please feel free to contact our office with any questions on the above.

Respectfully submitted,

REMA ECOLOGICAL SERVICES, LLC

George T. Logan, MS, PWS, CSE
Professional Wetland Scientist/Registered Soil Scientist
Certified Senior Ecologist

VIA E-MAIL

Attachments: Figures A to C; Photos 1 to 5

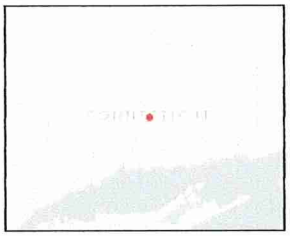
CT Environmental Conditions Online

Map Title

0.0 0 0.01 0.0 Miles

THIS MAP IS NOT TO BE USED FOR NAVIGATION

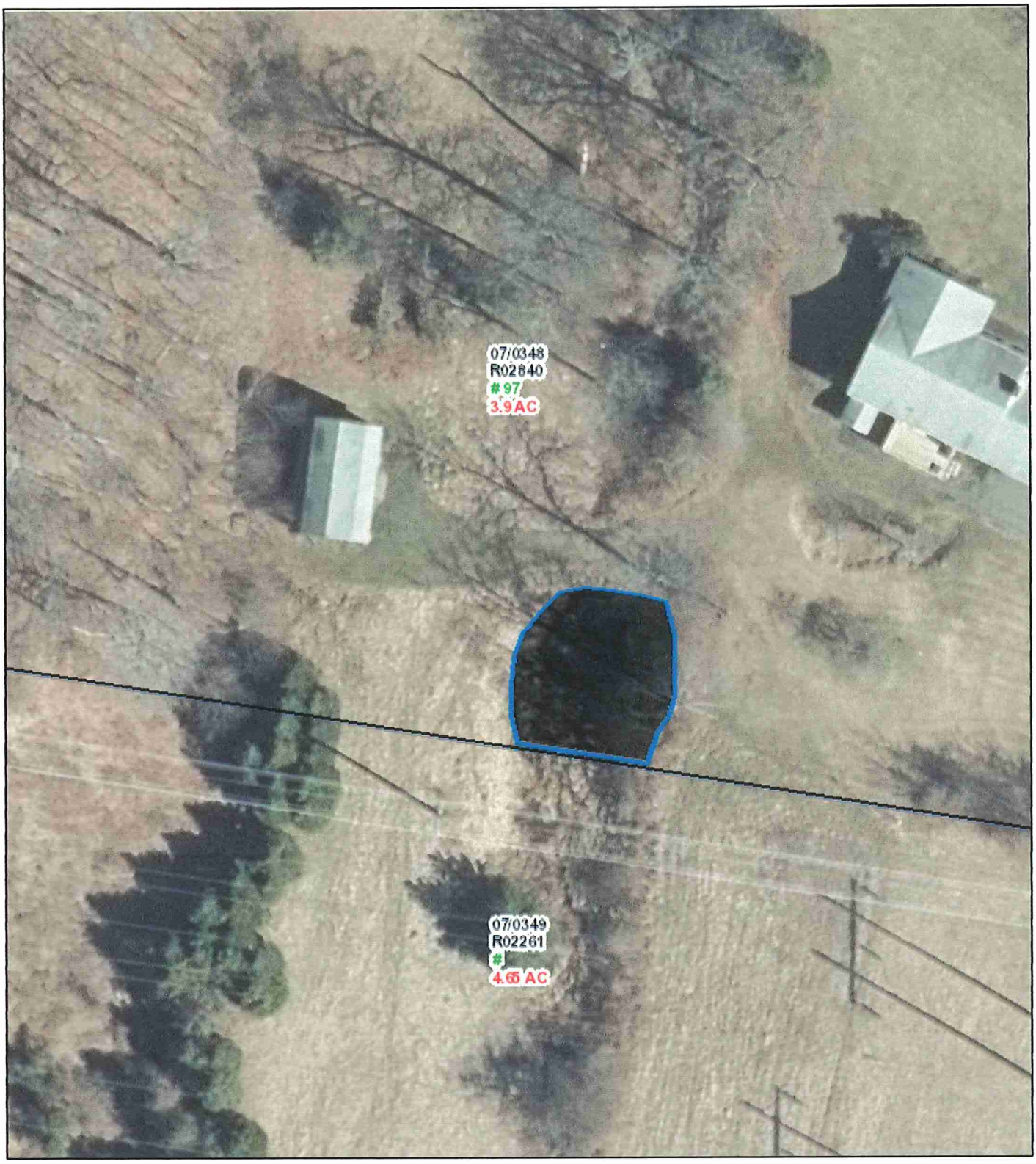
This map is intended for general planning, management, education, and research purposes only. Data shown on this map may not be complete or current. The data shown may have been compiled at different times and at different map scales, which may not match the scale at which the data is shown on this map.



Legend

- Parcels for Protected Open Sp
- Light Gray Canvas Base

Notes



Pond Remediation/Maintenance

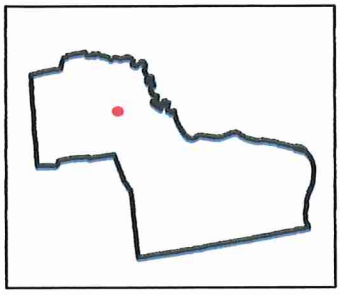
Map generated 12/29/2020

Map Legend: http://gis.cityofmiddletown.com/middletownct/legend.pdf
<vision link>

N

0 0.003 0.006 0.012 0.018 0.024 mi

1 in = 50 ft



MAP FOR REFERENCE ONLY - NOT A LEGAL DOCUMENT

Because of different update schedules, current property assessments may not reflect recent changes to property boundaries. Check with the Board of Assessors to confirm boundaries uses at the time of assessment.


FIGURE C:
POND REHABILITATION/MAINTENANCE
97 Poplar Road, Middletown, CT
(as seen on a September 2017 aerial photo)
Legend
97 Poplar Rd
Pond Perimeter - 2016
97 Poplar Rd
Google Earth
N
100 ft

97 Poplar Road, Middletown, CT
Photos taken on 1/13/2021, by REMA Ecological Services, LLC

Photo 1: Central and southern portion of "pond"; facing southerly

Photo 2: Exploratory soil pit, southern portion of "pond"; facing southerly

97 Poplar Road, Middletown, CT
Photos taken on 1/13/2021, by REMA Ecological Services, LLC

Photo 3: One of the eroded portion of the intermittent stream feeding the "pond"; facing southerly

Photo 4: Exploratory soil pit along the existing flow path through the "pond;" auger buried to handle, indicating at least 42 inches of accreted sediment and organics

97 Poplar Road, Middletown, CT
Photos taken on 1/13/2021, by REMA Ecological Services, LLC

Photo 5: Twin outlet pipes through the "pond" embankment (berm); facing northerly