

February 28, 2019

Mike Carter
GCG Associates, Inc.
84 Main Street
Wilmington, MA 01887

RE: Wetland Evaluation at Parker Meadow, Lexington

Dear Mr. Carter:

Wetlands & Land Management, Inc. has completed our evaluation of wetland resource areas at and near certain walking trails in the Parker Meadow Conservation Area off Revere Street in Lexington. Wetlands were delineated on February 8 and 15, 2019.

Wetland delineation was limited to areas within 100 feet of certain walking trails within the study area. You had provided me with a GIS overview of the study area prior to my initial site visit. Wetlands within the study area were evaluated using delineation methodology established in the Wetlands Protection Act and the Department of Environmental Protection "Delineating Bordering Vegetated Wetlands Handbook" dated 1995, and the US Army Corps of Engineers Manual (1987). These regulations and methodology incorporate the evaluation of hydric soils, predominance of wetland vegetation and wetland hydrology to evaluate the upper limit of vegetated wetlands. The Town of Lexington has slightly different delineation criteria in that the presence of only a single parameter, i.e. soils or vegetation alone is sufficient to characterize an area as vegetated wetlands. Additionally, the definition of other resource areas such as stream bank differs from Wetlands Protection Act Regulations. We relied on the more restrictive Lexington delineation criteria for our field work.

The study area is open space area roughly bounded by Revere Street on the northerly end, the Lexington Bike Trail on the western side and homes fronting on Hancock Street on the eastern side. The Conservation Area features a mix of mowed open field, a small pond, and wooded areas. The main walking trails commences at the parking area at Revere Street and extends to the south, past the small pond and eventually meeting with the Bike Trail at the southern end of the Conservation Area. Another trail – a portion of Across Lexington trail, bisects the Conservation Area west to east. A second spur trail located roughly halfway between the parking area and the southern trail terminus connects the main trail and the Lexington Bike Trail.

There are eleven flag series in the field identifying various segments of resource area within the study area. A stream enters the small pond from the south, flows through the pond and discharges from the pond and continues to flow thorough the Conservation Area to the north. Downstream of the pond is indicated on the USGS map as a perennial stream. Upstream of the pond was indicated on the map as being intermittent. We

performed the necessary StreamStat evaluation on the upstream segment. This is discussed later in this report.

Wetland Resource Areas

Each wetland area is marked with numerically labeled blue surveyors flagging. The following is a description of each resource area and the flag numbers that identify it.

1-Series – 1-1 to 1-32

The 1 series initially defines the top of stream bank of the perennial portion of the stream on site, then encounters the eastern side of the pond and then trends into a bordering vegetated wetland resource area once past the pond.

The perennial stream exits the study area to the north via a culvert under the Lexington Bike Trail. Beginning on the easterly side of the stream and at the bike trail, flags 1-1 through 1-12 line defines the top of bank resource area. (The stream is located within a bordering vegetated wetland, which is identified with a separate wetland flag series.) Flag 1-12 is located at the discharge point of the pond.

Flags 1-12 to 1-24 define top of bank or a narrow vegetated wetland fringe around the pond. At flag 1-24, a narrow ditch enters the southeast side of the pond from the east. A wood footbridge crosses the ditch at this location. The wetland boundary turns along this ditch and trends easterly. Flags 1-24 to 1-25 identify top of bank resource area along this ditch. Finally, the flag line diverts away from the ditch at 1-25 and identifies the upper edge of bordering vegetated wetlands to the end of this series.

The flag line ends at flag 1-32 where the wetland boundary was trending away from the study area and was more than one hundred feet from the trails on the site.

2-series – 2-1 to 2-18

The 2-series is a bordering vegetated wetland encompassing the eastern side of the stream between the bike trail and the pond. Flag 2-1 commences at the stream near flag 1-1. The upper edge of bordering vegetated wetland trends easterly, southerly and westerly, creating a wide semi-circle eventually re-joining the stream at the pond outlet at flag 1-12.

Soil probes as part of the wetland delineation indicated the area was historically filled or disturbed. I also noted an old, standing water spigot in this area, a remnant of some past land use. Vegetation was dominated by a mix of shrubs and forbs including sensitive fern and cinnamon fern in the herbaceous layer, colonies of silky dogwood intermixed with common invasive shrubs including European buckthorn and honeysuckle.

3- series – 3-1 to 3-25

Returning back to southern end of the pond and on the opposite side of the southeast ditch, the 3-series flags define an island of upland situated between the southeast ditch, the pond and another stream on the southwest side of the pond.

Flag 3-1 commences opposite flag 1-24. The flag line initially marks the top of bank or a narrow bordering vegetated wetland fringe along the pond and then encounters a stream entering the pond from the southwest. Flags 3-5 to 3-9 mark the top of bank along this stream, crossing over a wood foot bridge between 3-8 and 3-9.

Flags 3-9 to 3-24 define the upper edge of bordering vegetated wetland on the southeastern side of this island. Flag 3-24 encounters the southeastern ditch and then trends along the ditch to re-connect with flag 3-1.

4 and 5 - series- - 4-1 to 4-5, 5-1 to 5-9

The 4 and 5 series flags define two small upland islands interconnected by two wood foot bridges.

The streams and ditches in this area appear to have been historically dredged or excavated. These two upland islands appear to be excavated spoils placed on the stream bank from historic stream work.

6 - series – 6-1 to 6-10

At this point, we encountered the spur trail midway between Revere Street and the southern terminus of the main trail. We reconnoitered the area along the spur trail between the main trail and the Lexington Bike Trail. At the terminus with the Bike Trail, I noted an isolated depression on the opposite side of the Bike Trail. I marked this depression with flags labeled 6-1 to 6-10.

The Bike Trail is an old rail road grade. Historic drainage ditches are commonly found along the edge of the rail bed. These depressions tend to collect surface water runoff and populated with wetland plants. This area is an isolated vegetated wetland protected under the Lexington Wetlands By-law.

7 – series – 7-1 to 7-29

The 7-series wetland commences roughly 100 feet southerly of the middle trail spur. Flags 7-1 through 7-9 traverse southerly, initially upgradient of the pond and then cross over the middle trail spur between 7-9 and 7-10.

At this point, the wetland boundary turns southerly, leaving the pond and trending toward and beyond the southern trail terminus. The flag line traverses upgradient of the main trail. Most of the main trail on the southern side of the pond is within the limits of wetlands.

Flags 7-24 and 7-25 approach the southern terminus of the main trail and cross the trail between these two flags. The flag line continues roughly 100 feet beyond the trail, traversing roughly along the bottom of slope embankment of the Lexington Bike Trail.

This flag series marks the upper limit of bordering vegetated wetlands. This wetland was dominated by common shrubs, trees and forbes including European buckthorn, honeysuckle, red maple, cinnamon fern and sensitive fern.

8 and 10 – series – 8-1 to 8-12 and 10-1 to 10-19

These two flag series define the western bank of the perennial stream downstream of the pond and a bordering vegetated wetland located adjacent to the stream and pond.

Flag 8-1 commences on the westerly side of the perennial stream where it flows under the Lexington Bike Trail – opposite flag 1-1. Flags 8-1 to 8-12 are all located along the top of bank of the perennial stream between the Bike Trail and the pond outlet.

The stream is well entrenched and the initial flags 8-1 through 8-4 have no bordering vegetated wetland adjacent to the stream. Beginning at flag 8-4, a bordering vegetated wetland commences adjacent to the stream. This wetland is marked with the 10-series flags – 10-1 through 10-19. These flags trend initially along the toe of the embankment slope along the Bike Trail. The wetland boundary crosses over a segment of the Across Lexington foot path and then continue along the Bike Trail embankment, following along another historic depression/ drainage swale along the old rail grade/ Bike Trail.

The flag line turns at the top of this swale feature and turns back northerly a short distance to define the other side of this narrow drainage swale feature before veering back towards the pond. The flag line traverses through the woods and connects with flag 7-1.

9-series 9-1 to 9-9

Flags 9-1 through 9-9 mark the top of bank resource area of a stream within the 7-series wetland. The last flag in this series connect to flag 5-1. This stream is roughly eight feet wide and is deeply entrenched within the wetland. The flag line trends along an old spoils pile paralleling the stream bank apparently placed when the stream was historically dredged.

11 - series – 11-1 to 11-6

Another drainage swale was discovered along easterly side of the Bike Trail at the intersection of Revere Street. This area was identified with flags 11-1 through 11-6. These flags demarcate the upper limit of the drainage swale, however at this location, the swale drains under Revere Street via a culvert and continues along the Bike Trail on the opposite side of Revere Street. With a defined outlet, this swale is characterized as a bordering vegetated wetland, bordering on the culvert/ intermittent stream outlet.

Riverfront Area

The USGS map for this area shows the pond and shows a perennial stream indication for the portion of the watercourse downstream/ northerly of the pond. A perennial stream indication on the USGS map is an automatic presumption that the stream is perennial and has an associated riverfront area.

The USGS map indicates the stream upgradient of the pond is intermittent. Pursuant to the regulations at 310 CMR 10.58, I further evaluated this section of the watercourse using the USGS *StreamStat* on-line stream evaluation tool. The evaluation print-out is included with this report.

The resultant evaluation calculates that the contributing watershed to this section of stream is 0.4 square miles. The program did not calculate the residual flow in the 99th percentile flow duration most likely because the watershed is too small.

Regulations at 310 CMR 10.58 establish a threshold of requiring a watershed more than one half square mile in area and residual stream flow being at least 0.01 cfs in order to presume the stream is perennial. The StreamStat evaluation did not calculate the residual stream flow but failed on the contributing watershed size. Accordingly, the watercourse is presumed to be intermittent and there is no riverfront area associated with the section of watercourse upstream of the pond.

The regulations at 310 CMR 10.58 state the riverfront area begins at the outlet of a pond. Flags 1-12 and 8-12 are identified as the pond outlet. A 200-foot riverfront area extends perpendicular to the flag line at these two flags and then parallels the stream.

No Bordering Land Subject to Flooding

The Flood Insurance Rate Maps indicate there are no areas designated as Zone A bordering land subject to flooding. The map does indicate the streams and pond are designated as Zone B – lands subject to inundation in extreme storms up to a 500-year recurrence interval. Zone B areas are not regulated as bordering land subject to flooding.

Rare Species and Certified Vernal Pools

The MassGIS Oliver Viewer Natural Heritage Atlas indicates the property is not within estimated habitat of rare wetlands wildlife, nor is there Priority Habitat of threatened or endangered species. There are no certified vernal pools on this property. The MassGIS web page indicates a potential vernal pool within the wetlands to the east/ southeast of wetland flags 3-9 through 3-20. The location of the potential pool is well over 100 feet from the trail/ study area and was not investigated.

I trust this information will be useful to you. Be advised, the Conservation Commission is the authority that will make a final determination of the limits of resource areas.

Sincerely,

Wetlands & Land Management, Inc.

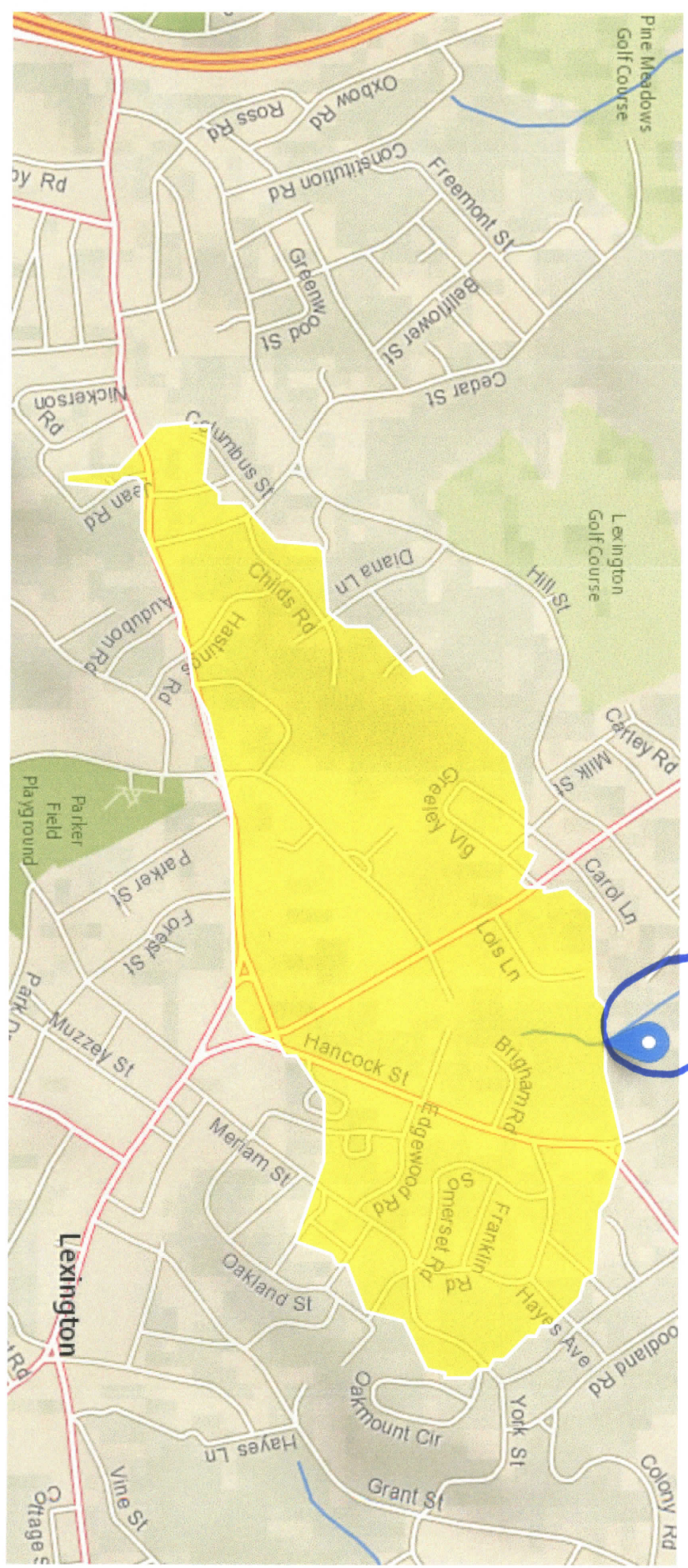
William Manuell 

William J. Manuell
Wetland Scientist

STREAMSTAT INFORMATION

StreamStats Report

Region ID: MA
 Workspace ID: MA20190305152200027000
 Clicked Point (Latitude, Longitude): 42.45638, -71.23029
 Time: 2019-03-05 10:22:12 -0500



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.4	square miles
DRFTPERSTR	Area of stratified drift per unit of stream length		square mile per mile
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless
BSLDEM250	Mean basin slope computed from 1:250K DEM		percent

Flow-Duration Statistics Parameters [Statewide Low Flow WRRP00 4135]					
Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.4	square miles	1.61	149
DRFTPERSTR	Stratified Drift per Stream Length		square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1
BSLDEM250	Mean Basin Slope from 250K DEM		percent	0.32	24.6
Flow-Duration Statistics Flow Report [Statewide Low Flow WRRP00 4135]					
Statistic		Value			Unit
<i>Flow-Duration Statistics Citations</i>					

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Application Version: 4.3.0