Evans Associates
Environmental Consulting, Incorporated

July 19, 2022

Thomas Burt, Chairman
Village of Mamaroneck
Harbor Coastal Zone Management Commission
169 Mt. Pleasant Avenue
Mamaroneck, New York 10543

RE: 921 Soundview Drive

Dear Chairman Burt and Members of the Commission:

Our office has been working with the design team for the proposed single-family residence and pool, and this letter is intended to respond to comments from the Commission at the February 16, 2022 meeting, as well as review comments in the July 15, 2022 memorandum from your consultants, AKRF. Specifically, we have been asked to address the potential impacts to the wetland and wetland buffer from the proposed development.

As you know, the subject property is immediately adjacent to the tidal wetlands associated with Otter Creek, which discharges into Mamaroneck Harbor. Our office used the USGS StreamStats[1] program to calculate the drainage basin characteristics for the Otter Creek wetland system, and the results are attached to this report. At the point where the Creek discharges into the Harbor the contributing watershed is approximately 128 acres, and the subject property sits near the middle of that drainage area, with approximately 77 acres draining to the Creek above the site. Therefore, the subject property comprises less than one percent of the watershed draining to the wetland and creek immediately adjacent to the site, and that watershed is characterized as mostly urbanized (78%) in the StreamStats report.

The July 15, 2022 AKRF comment memo requests a discussion of the potential impacts to the wetland and wetland buffer should 12,000± gallons of pool water be released across the site. The pool is proposed to be a "salt water" pool, with a salinity of approximately 3,000 ppm. For comparison, the salinity of seawater is around 35,000 ppm, and salinity in tidal marshes like Otter Creek varies from 500 ppm (freshwater is typically defined as anything under 1,000 ppm) to 30,000 ppm. Given the range of salinities naturally found in tidal wetlands, it is my professional opinion that a onetime influx (or pulse) of pool water with a salinity of 3,000 ppm would not have an adverse impact on the wetland flora or fauna.

[1] https://streamstats.usgs.gov/ss/

162 Falls Road
Bethany, CT 06524
Tel: 203.393.0690

In conclusion, it is my professional opinion that by locating the house and the pool as far as physically possible from the wetland, and by utilizing measures to capture and treat stormwater runoff from the site, the applicants have attempted to minimize or avoid any potential for adverse impacts to the wetland or the creek from the proposed development.

I look forward to discussing this application with you, and will be happy to answer any questions you may have.

Sincerely,
Evans Associates Environmental Consulting, Inc.

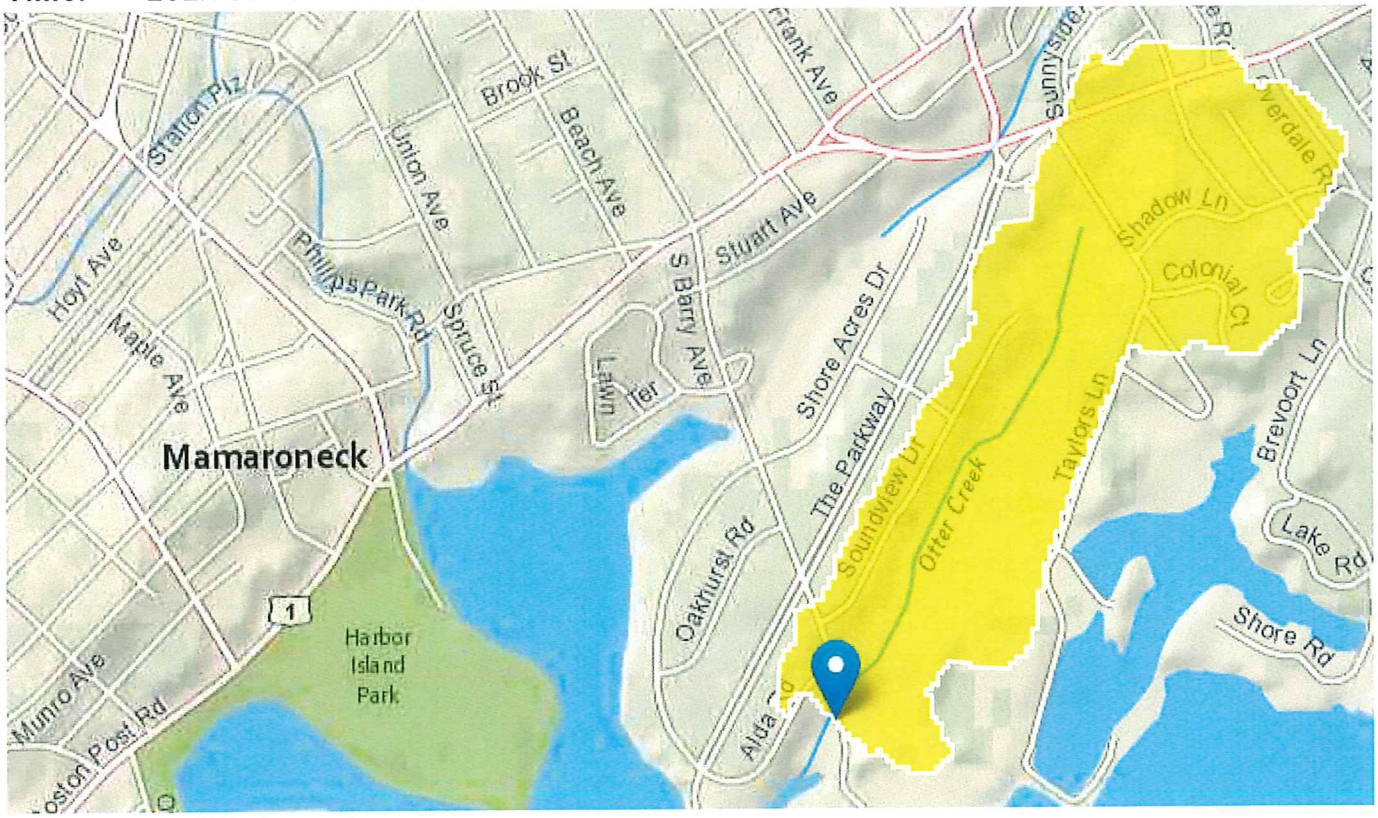
Beth Evans

Beth Evans, PWS
Principal

Attachments

StreamStats Report For Otter Creek, Mamaroneck Harbor

Region ID: NY
Workspace ID: NY20220719193513102000
Clicked Point (Latitude, Longitude): 40.94453, -73.72341
Time: 2022-07-19 15:35:33 -0400



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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.2	square miles

Bankfull Statistics

Bankfull Statistics Parameters [Bankfull Region 3 SIR2009 5144]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.2	square miles	0.42	329

Bankfull Statistics Parameters [Appalachian Highlands D Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.2	square miles	0.07722	940.1535

Bankfull Statistics Parameters [New England P Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.2	square miles	3.799224	138.999861

Bankfull Statistics Parameters [USA Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.2	square miles	0.07722	59927.7393

Bankfull Statistics Disclaimers [Bankfull Region 3 SIR2009 5144]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Bankfull Statistics Flow Report [Bankfull Region 3 SIR2009 5144]

Statistic	Value	Unit
Bankfull Area	17.7	ft^2
Bankfull Depth	1.18	ft
Bankfull Streamflow	28.1	ft^3/s
Bankfull Width	15	ft

Bankfull Statistics Flow Report [Appalachian Highlands D Bieger 2015]

Statistic	Value	Unit
Bieger_D_channel_width	7.79	ft
Bieger_D_channel_depth	0.706	ft
Bieger_D_channel_cross_sectional_area	5.55	ft^2

Bankfull Statistics Disclaimers [New England P Bieger 2015]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Bankfull Statistics Flow Report [New England P Bieger 2015]

Statistic	Value	Unit
Bieger_P_channel_width	16.1	ft
Bieger_P_channel_depth	0.965	ft
Bieger_P_channel_cross_sectional_area	15.2	ft^2

Bankfull Statistics Flow Report [USA Bieger 2015]

Statistic	Value	Unit
Bieger_USA_channel_width	7.03	ft
Bieger_USA_channel_depth	0.856	ft
Bieger_USA_channel_cross_sectional_area	7.17	ft^2

Bankfull Statistics Flow Report [Area-Averaged]

Statistic	Value	Unit
Bankfull Area	17.7	ft^2
Bankfull Depth	1.18	ft
Bankfull Streamflow	28.1	ft^3/s
Bankfull Width	15	ft
Bieger_D_channel_width	7.79	ft
Bieger_D_channel_depth	0.706	ft
Bieger_D_channel_cross_sectional_area	5.55	ft^2
Bieger_P_channel_width	16.1	ft
Bieger_P_channel_depth	0.965	ft
Bieger_P_channel_cross_sectional_area	15.2	ft^2
Bieger_USA_channel_width	7.03	ft
Bieger_USA_channel_depth	0.856	ft
Bieger_USA_channel_cross_sectional_area	7.17	ft^2

Bankfull Statistics Citations

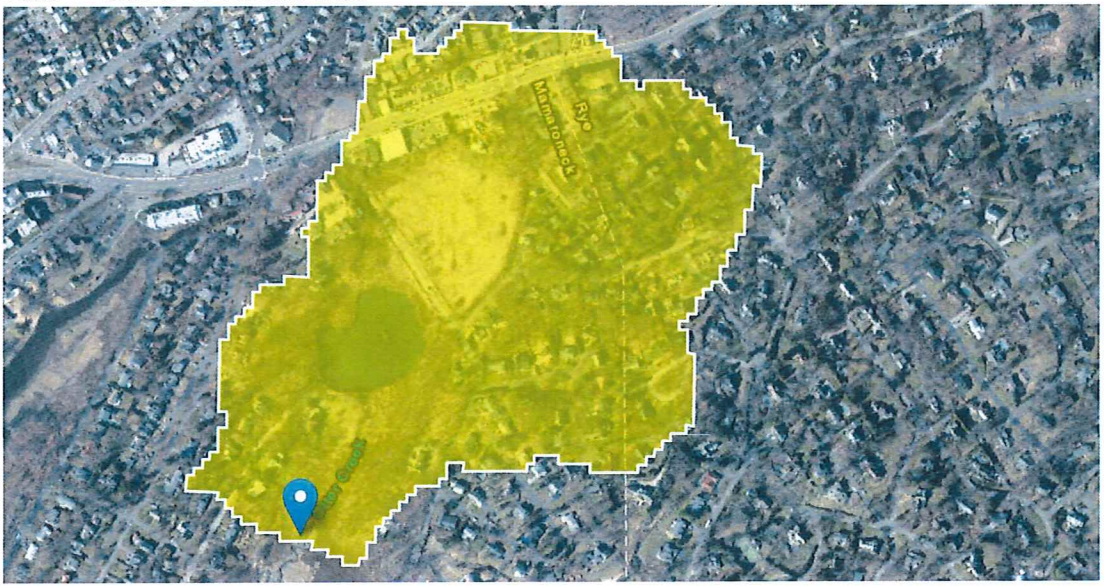
Mulvihill, C.I., Baldigo, B.P., Miller, S.J. , and DeKoskie, Douglas,2009, Bankfull Discharge and Channel Characteristics of Streams in New York State: U.S. Geological Survey Scientific Investigations Report 2009-5144, 51 p. (http://pubs.usgs.gov/sir/2009/5144/)

Bieger, Katrin; Rathjens, Hendrik; Allen, Peter M.; and Arnold, Jeffrey G.,2015, Development and Evaluation of Bankfull Hydraulic Geometry Relationships for the Physiographic Regions of the United States, Publications from USDA-ARS / UNL Faculty, 17p. (https://digitalcommons.unl.edu/usdaarsfacpub/1515?utm_source=digitalcommons.unl.edu%2Fusdaarsfacpub%2F1515&utm_medium=PDF&utm_

Application Version: 4.10.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

StreamStats Report

Region ID: NY
Workspace ID: NY20220719192829240000
Clicked Point (Latitude, Longitude): 40.94968, -73.71929
Time: 2022-07-19 15:28:50 -0400



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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.12	square miles
FOREST	Percentage of area covered by forest	12.5	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	78.1	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	19.4	percent
LENGTH	Length along the main channel from the measuring location extended to the basin divide	0.63	miles
MAR	Mean annual runoff for the period of record in inches	18.9	inches
PRECIP	Mean Annual Precipitation	41.7	inches
SSURGOA	Percentage of area of Hydrologic Soil Type A from SSURGO	0	percent
SSURGOB	Percentage of area of Hydrologic Soil Type B from SSURGO	33.3	percent
STORAGE	Percentage of area of storage (lakes ponds reservoirs wetlands)	3.83	percent

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Application Version: 4.10.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1