A. PROJECT DESCRIPTION

Regan Development Corporation (the "Applicant"), contract vendee of the property located at 41-51 Maple Street (the "Project Site"), is seeking, among other actions, special use permit approval from the Village of Croton-on-Hudson (the "Village") Board of Trustees pursuant to §230-20.3.B(4) of the Village Zoning Code, to develop the currently vacant Project Site with a 33-unit multifamily residential development, the majority of which would be affordable housing (the "Proposed Project"). The Village Board of Trustees is serving as the Lead Agency for the Proposed Project's environmental review pursuant to the State Environmental Quality Review Act (SEQRA).

The Project Site is a 2.4-acre Village-owned property located at 41-51 Maple Street (parcel number 78.12-3-3), and is zoned C-2 within the Municipal Place Gateway District ("MPGD") (see **Figure 1a**, "Project Location" and **Figure 1b**, "Zoning"). As noted in §230-20.3.B(4) of the Village Zoning Code, within the MPGD area, on any lot in the C-2 District having frontage on Municipal Place, adjacent to a residential zoning district and having less than three acres, multifamily residential buildings shall be permitted by special permit of the Village Board of Trustees, subject to the requirements/criteria contained in §230-20.3.B(4) and Article X, §230-58 of the Zoning Code.

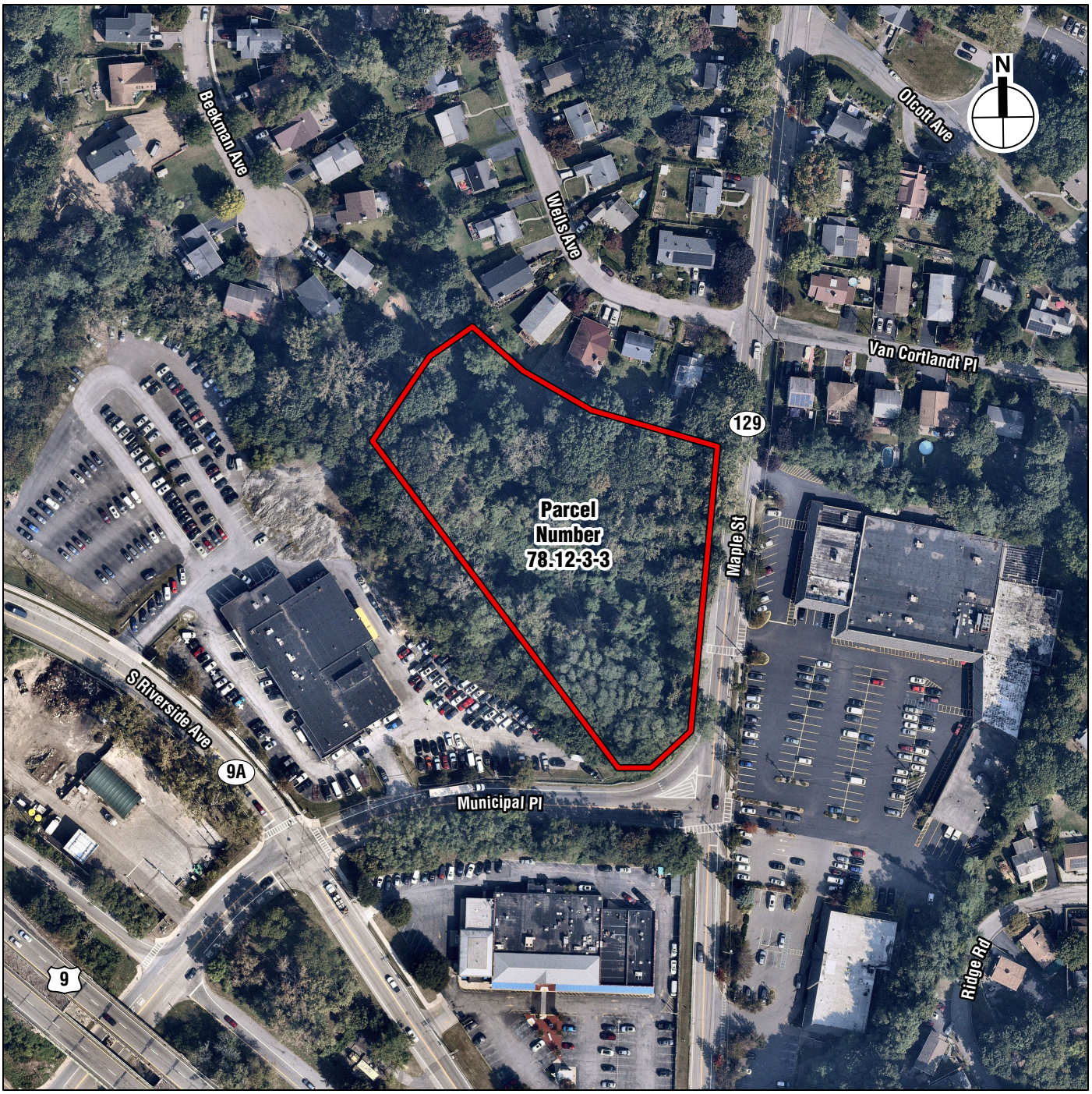
The Applicant is proposing to construct an approximately 41,100 square-foot (sf) multifamily residential development consisting of 33 rental apartments within two 2-story buildings, 61 at-grade parking spaces, landscaping, and private/public open spaces (see **Figure 2**, "Preliminary Site Plan"). The easternmost building (aka "Building 1" fronting Maple Street) would contain 12 units and the westernmost building (aka "Building 2") would contain 21 units. Conceptual building elevations and floor plans for each building's ground floor are shown in **Figures 3a and 3b,** "Conceptual Building Elevations and Ground Floor Plans." A representation of the colors, textures and building materials being considered for the Proposed Project are depicted in **Figure 4**[1]**,** "Conceptual Architectural Treatments."

The currently proposed unit mix is as follows:

- 11 one-bedroom units;
- 11 two-bedroom units; and
- 11 three-bedroom units.

[1] Figure 4, "Conceptual Architectural Treatments" has been included to convey colors, textures, and materials being considered for the Proposed Project. This figure should not be interpreted as a rendering of the Proposed Project.

4.13.21



Data source: Orthoimagery via Nearmap

0 200 FEET

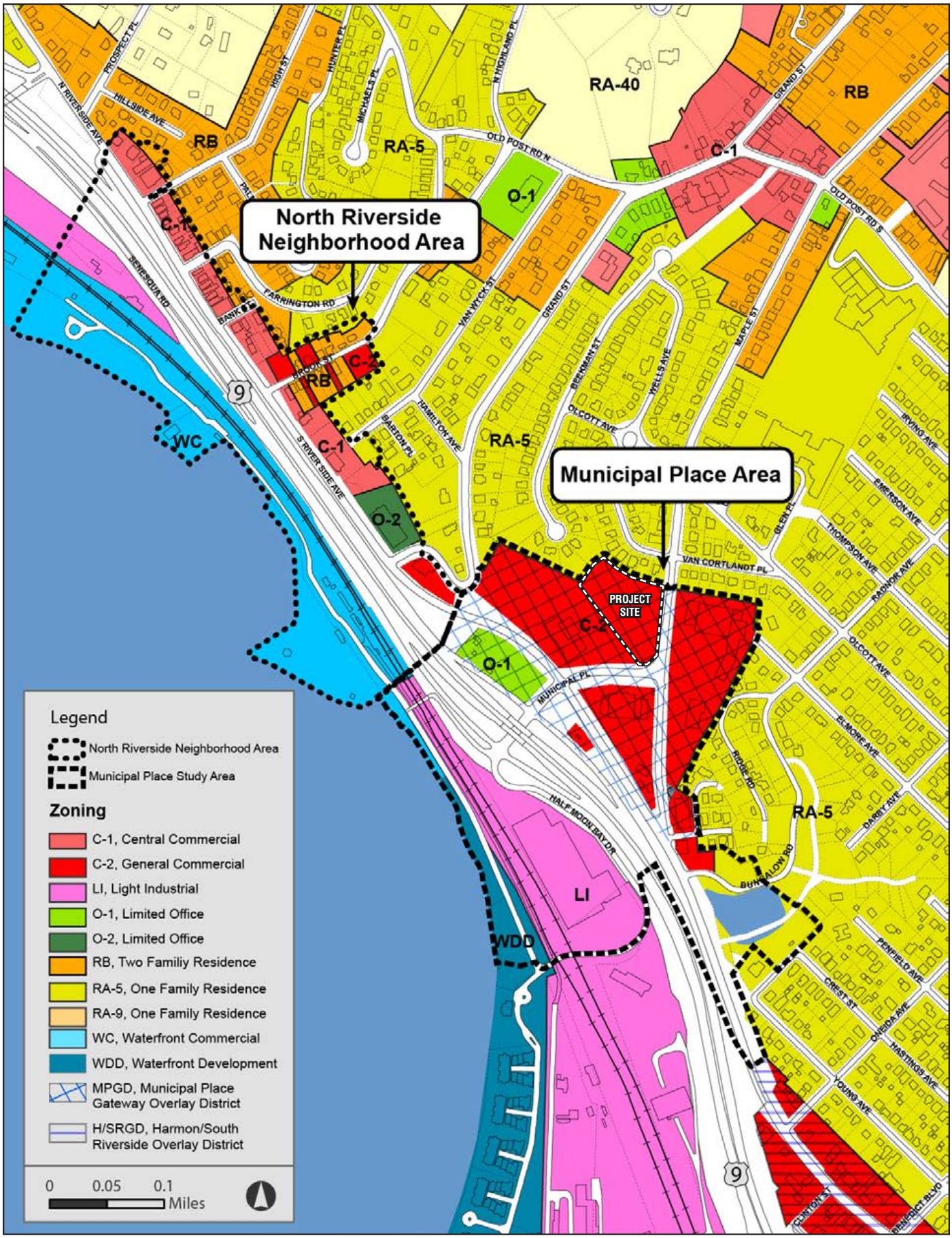
Project Location

Project Location

41-51 MAPLE STREET

Figure 1a

4.14.21



Source: BFJ Planning and Village of Croton-on-Hudson, 2019

Zoning

41-51 MAPLE STREET

Figure 1b

SITE LOCATION MAP
NOT TO SCALE

SITE INFORMATION

ZONING: C-2 WITH MUNICIPAL PLACE GATEWAY OVERLAY DISTRICT

	ALLOWED	PROPOSED	VARIANCE REQUIRED
MAXIMUM HEIGHT:	35 FEET	+/-28 FEET	NO
MINIMUM AREA:	N/A	N/A	NO
MINIMUM LOT WIDTH:	50 FEET	+/-200 FEET	
DENSITY:	33 UNITS	33 UNITS	NO
FLOOR AREA RATIO:	0.50	0.36	NO

SETBACK REQUIREMENTS	REQUIRED	PROPOSED	VARIANCE REQUIRED
FRONT BLDG. SETBACK:	20 FEET	+/-21 FEET	NO
SIDE BLDG. SETBACK:	10 FEET	+/-11 FEET	NO
REAR BLDG. SETBACK:	10 FEET	+/-52 FEET	NO

PARKING
REQUIRED-55 PARKINGS STALL
PROPOSED- 61 PARKING STALLS OR 1.85 PARKING RATIO

SECTION A-A
SCALE: 1"=40' (BASED UPON COUNTY GIS CONTOURS)

Source: Prime Companies, 2021

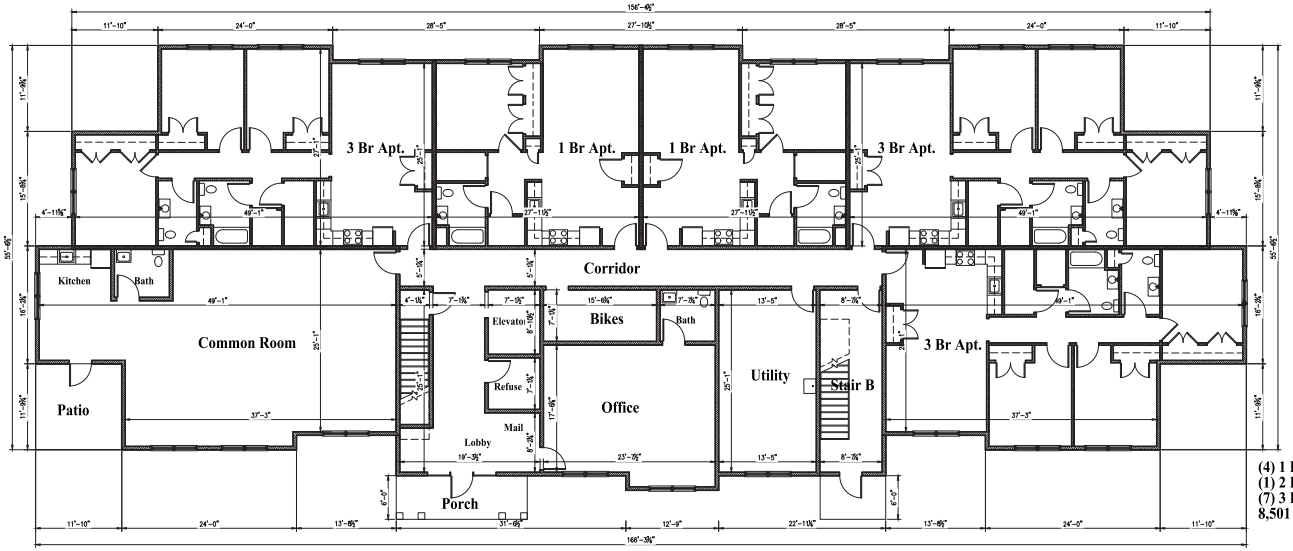
Preliminary Site Plan
Figure 2

41-51 MAPLE STREET

Regan Development, Croton - Unit and Area Breakdown

Building #	Floor #	1 Br Apartment	2 Br Apartment	3 Br Apartment	Totals
		745 s.f. int	970 s.f. int	1174 s.f. int	
1	1	2	0	3	5
	2	2	1	4	7
2	1	3	5	2	10
	2	4	5	2	11
TOTALS					
		11	11	11	33
Total Int Area		8195	10670	12914	31,779

All apartments are visitable and adaptable.
(4) apartments will be Mobility Adapted
(2) apartments will be A/V Adapted



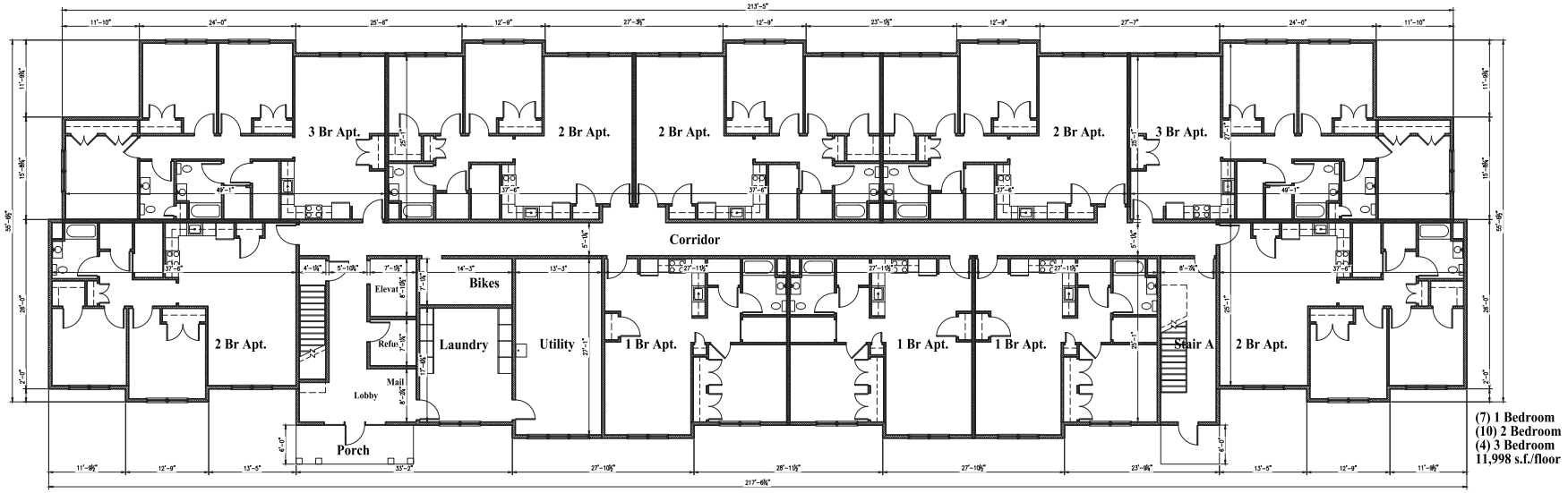
1 / A1 **Building #1 First Floor Plan**
Scale: 1/8"=1'-0"

2 / A1 **Building #1 Elevation**
Scale: 1/8"=1'-0"

Typical Exterior Finishes:
Fibercement Siding
Fibercement Shakes
Cultured Stone Veneer
Energy Star Windows
Fiberglass Shingles
Standing Seam Aluminum Roofing
Composite Trim Boards

Source: Coppola Associates, 2021

Conceptual Building Elevations and Ground Floor Plans



1/A2 **Building #2 First Floor Plan**
Scale: 1/8"=1'-0"

2/A2 **Building #2 Elevation**
Scale: 1/8"=1'-0"

Source: Coppola Associates, 2021

Conceptual Building Elevations and Ground Floor Plans

41-51 MAPLE STREET

Figure 3b

4.29.21

Source: Newman Design

NOTE: This figure is meant to convey colors, textures, and materials being considered for the Proposed Project and should not be interpreted as a rendering of the Proposed Project

Conceptual Architectural Treatments

The Applicant is seeking 9% Low Income Housing Tax Credit financing through New York State Homes and Community Renewal ("HCR"), and Housing Implementation Funding from Westchester County. At this time, the Applicant anticipates 29 units of the 33 units would be affordable rental units for households earning between 30 and 80 percent of Area Median Income (AMI).

The proposed two-story buildings would be approximately 28 feet tall, and the total floor area ratio (FAR) across the site would be approximately 0.36. In accordance with requirements of the Zoning Code to provide separation and visual screening from neighboring residential properties on Wells Avenue and Beekman Avenue, a 50-foot planted/forested buffer would remain along the northern and western edges of the Project Site. As required by zoning, the easternmost building on the Site would be set back 20 feet from Maple Street, and the westernmost building would be set back 10 feet from the southern property line. Access to the Proposed Project would be provided by a single curb cut and driveway on the west side of Maple Street, approximately 50 feet from the northern property line. At the southern end of the Project Site, where Maple Street meets Municipal Place, the Project would include an approximately 10,000 sf publicly accessible pocket park with seating and landscaping adjacent to a tiered/landscaped retaining wall. As part of the project, the Applicant also proposes to relocate and improve the existing Bee-Line bus shelter on the west side of Maple Street near Municipal Place and the proposed pocket park.

Photographs of the Project Site's existing conditions are included in Figures **5a through 5d**, "Project Site Photographs."

B. BACKGROUND / PURPOSE AND NEED

Specific standards on residential development for the Project Site's C-2 District were developed as part of the Municipal Place Gateway and North Riverside Neighborhood Zoning Study (BFJ Planning, 2019), which became the 2020 Amendment to the Village's Comprehensive Plan and Zoning Code (the "2020 Amendment"). In connection with the 2020 Amendment, the Village Board of Trustees received recommendations from the Village Planning Board, the Westchester County Planning Board, and the Village's Waterfront Advisory Committee. These recommendations and the Board of Trustees' findings led to the adoption of a Negative Declaration under SEQRA and determination of consistency with the policies of the Local Waterfront Revitalization Program (LWRP). It should be noted BFJ's environmental analyses, presented in the Full Environmental Assessment Form for the 2019 Zoning Study (the "2019 FEAF"), considered a 35-foot tall multifamily residential development with between 42 and 80 units – a larger and more dense development envelope than what is currently proposed by the Applicant.

In September 2020, the Village initiated a request for proposals (RFP) process for the redevelopment of the Project Site (described in the RFP as the "Katz Property"). The Village outlined a number of development objectives in the RFP, including activation of the MPGD through the development of a vacant parcel with residential or mixed-use land uses appropriate for the surrounding area, and compliance with the specific development guidelines for the Katz Property that were formally adopted as part of the 2020 Amendment. In early 2021, following review of the Applicant's proposal for an affordable multifamily residential development, the Village Board of Trustees selected the Applicant to redevelop the Project Site.

C. REQUIRED APPROVALS

Table 1 identifies the Involved and Interested Agencies and the approvals/reviews required for the Proposed Project.

Table 1
Involved Agencies

Involved Agencies	**Approval/Review**
Village Board of Trustees	Approval of Special Permit; Sale of Village-owned site
Village Planning Board	Recommendation on Special Permit upon referral by Village Board of Trustees; Site Plan Approval
Village Waterfront Advisory Committee	Coastal Zone Consistency Review
Village Engineering Department	Building Permit; Water/Sewer Permits
Westchester County Board of Legislators	Housing Implementation Funding Approval; Bee-Line Bus Shelter Relocation
Westchester County Department of Planning	Referral per General Municipal Law §239-m; Housing Implementation Funding Approval
Westchester County Department of Health	Water/Sewer Connections
New York State (NYS) Office of Parks, Recreation and Historic Preservation	Historic resources review
NYS Department of Environmental Conservation	State Pollutant Discharge Elimination System (SPDES) General Permit
New York State Homes and Community Renewal	Affordable Housing Funding Approval (9% LIHTC)
New York State Department of Transportation	Utility Permit (PERM 33); Highway Work Permit for Proposed Driveway
Interested Agencies	
Village Bicycle and Pedestrians Committee	
Village Housing Task Force	
Village Recreation Advisory Committee	
Croton-Harmon Union Free School District	
Croton-on-Hudson Fire Department	
Croton-on-Hudson Police Department	

D. SUPPLEMENTAL ANALYSES

NATURAL RESOURCES

On March 16, 2021, AKRF, Inc. conducted a field visit to the Project Site and did not identify the presence of wetlands, watercourses, floodplains, or protected species listed by agencies as potentially existing in the area of the Project Site. A memorandum report summarizing the field observations can be found in attached **Appendix A**.

HISTORIC AND CULTURAL RESOURCES

The New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) was consulted pursuant to Section 14.09 of the New York State Historic Preservation Act of 1980. In comments dated March 9, 2021 (see **Appendix B)**, OPRHP indicated that the Project Site is located in a generalized area of archaeological sensitivity, as mapped in OPRHP's Cultural

Resource Information System (CRIS). The sensitivity area is defined based on previously-identified archaeological sites that have been found in the area (waterfront areas in particular tend to have higher potential sensitivity for pre-contact occupation). As such, a Phase 1A Archaeological Documentary Study (Phase 1A Study) of the Project Site was requested by OPRHP. A Phase 1A Study includes extensive documentary research to understand and document a site's occupation/development from the earliest pre-contact human occupation through the present. A Phase 1A Study also confirms the extent of disturbance and identifies areas of archaeological sensitivity based on the results of the documentary research.

As described in the Phase 1A Study included in **Appendix B**, the majority of the Project Site has been extensively disturbed as a result of industrial development/use and other portions feature steep slopes of 15 percent or more. Therefore, the Project Site is determined to have low sensitivity for archaeological resources associated with the precontact occupation of Croton-on-Hudson. In addition, the Project Site was in use as an industrial or commercial property between the mid-19th century and the late 20th century. Several map-documented structures were located on the Project Site in the 20th century that were used by on-site businesses. Given the extent of disturbance documented as a result of landscape modification, it is not expected that extensive historic period deposits or features with high research value remain on the Project Site. Therefore, the Phase 1A Study concludes that the Project Site is determined to have no sensitivity for archaeological resources associated with the historic period occupation of the area.In a letter from OPRHP dated April 23, 2021 (see **Appendix B**), OPRHP concluded upon review of the Proposed Project's plans and Phase 1A Study, no historic properties, including archaeological and/or historic resources, would be affected by the Proposed Project.

COMMUNITY CHARACTER AND VISUAL RESOURCES

The Project Site is approximately 2.4 acres of currently vacant land within the Village's C-2 District and MPGD. Single family residential uses are located to the north and west of the Project Site; and commercial uses, including the Van Wyck Shopping Center and Croton Auto Park are found to the immediate east and south, respectively.

The Applicant is proposing to develop the Project Site in a manner consistent with the applicable standards for multifamily residential use specified in the Village's C-2 and MPGD zoning in the Village's 2020 Amendment to the Comprehensive Plan and Zoning Code. The Proposed Project is also responsive to the recommendations specific to the Project Site found within the Village's 2017 Comprehensive Plan, including the provision of a new park and meeting area oriented to the Municipal Place-Maple Street intersection, a new sidewalk along the Project Site's Maple Street frontage to improve pedestrian circulation, and an improved bus shelter for the Westchester County Bee Line bus service.

The proposed two-story buildings would be approximately 28 feet tall, and the total floor area ratio (FAR) across the Project Site would be approximately 0.36.

As noted in NYSDEC Program Policy DEP-00-2 / "Assessing and Mitigating Visual and Aesthetic Impacts" (last revised 2019), an "aesthetic impact" is the consequence of a visual impact on the public's use and enjoyment of the appearance or qualities of a listed resource. NYSDEC Program Policy DEP-00-2 is intended to address places or locations that have been officially designated for their aesthetic qualities and that are accessible to the public at large as opposed to places that may have individual or private importance only. The Project Site is not located within an area officially designated (locally or by New York State) for aesthetic qualities. The Hudson River is visible from many high points throughout the Village. However, due to intervening vegetation and

topography, the residential areas to the immediate north and west of the Project Site do not currently have direct views of the Hudson River.

BFJ's 2019 Zoning Study (and associated FEAF) considered the potential visibility of a three-story, 35-foot tall multifamily residential development on the Project Site with between 42 and 80 attached townhouse units – a larger and more dense development envelope than what is currently proposed by the Applicant. Pages 40 and 41 of the 2019 Zoning Study[2] present a cross section (page 41, Figure 14) of the Project Site to illustrate the line of sight and potential visibility of a three-story townhome development when viewed from the closest single-family residential uses along Wells Avenue. The analysis of viewsheds for the Project Site from the 2019 Zoning Study concluded the following:

> *"The layout preserves a 50 foot vegetated buffer between the building and upland residential parcels. As seen in Figure 14, the site is approximately 30' lower than the upland areas. It is anticipated that a three-story 35 foot development could be accommodated without presenting a disturbance to the viewshed."*

The site plan provided in **Figure 2** includes a cross section of the Proposed Project for the same viewshed presented in the 2019 Zoning Study (from Wells Avenue facing south). This cross section will be further refined to match the site boundary and topographic survey, and presented to the Village Board of Trustees for review before the conclusion of the SEQRA process. Based on this current cross section and additional information cited above, the Proposed Project, at two-stories and at a maximum height of approximately 28 feet, would not present a significant adverse visual impact when viewed from neighboring residential properties. The difference in finished grade elevation between the Proposed Project and the closest residences to the north along Wells Avenue would be approximately 30 feet, which would place the proposed buildings (at 28 feet tall) below and outside of the direct line of sight southward from this area. Many of the trees found within the 50-foot buffer and the direct line of sight from homes to the north and west, are significantly taller than the Proposed Project's maximum height of 28 feet, and are proposed to remain intact. Furthermore, it is the Applicant's opinion that when coupled with the 50-foot vegetated buffer to remain, the plantings proposed as part of the Proposed Project's landscape plan, would provide an additional layer of visual screening during both leaf-on and leaf-off conditions.

PUBLIC SCHOOLS

EXISTING PUBLIC SCHOOL ENROLLMENT

The Project Site is located within the Croton-Harmon Union Free School District (CHUFSD). CHUFSD has one elementary school (Carrie E. Tompkins Elementary School), one middle school (Pierre Van Cortlandt Middle School), and one high school (Croton-Harmon High School).

According to enrollment data contained in the CHUFSD 2020-2021 Proposed Budget Brochure[3], the estimated enrollment for the 2020-2021 school year was 1,575 students (based on actual enrollment in March 2020). The same report includes historical CHUFSD enrollment data between the1993-1994 and 2019-2020 school years, including a peak enrollment of 1,752 students

[2] https://www.crotononhudson-ny.gov/sites/g/files/vyhlif441/f/uploads/croton_riverside-municipalpl-090419.pdf

[3] https://www.chufsd.org/cms/lib/NY01913608/Centricity/shared/budget/2020-2021%20budget/2020-2021%20Budget%20Brochure.pdf

in the 2009-2010 school year. Historical enrollment data since the 2009-2010 peak enrollment is presented in **Table 2**. As shown, when accounting for the projected 2020-2021 enrollment of 1,575 students, there are approximately 177 fewer students enrolled in the most recent year that data is available than the 2009-2010 peak enrollment (an overall decrease of approximately 10 percent).

Table 2
CHUFSD Historical Enrollment Data

School Year	Building Enrollment	Change from Previous Year	Percent Change
2009-2010	1,752	2	0.11%
2010-2011	1,750	-2	-0.11%
2011-2012	1,721	-29	-1.66%
2012-2013	1,703	-18	-1.05%
2013-2014	1,723	20	1.17%
2014-2015	1,681	-42	-2.44%
2015-2016	1,635	-46	-2.74%
2016-2017	1,636	1	0.06%
2017-2018	1,600	-36	-2.20%
2018-2019	1,575	-25	-1.56%
2019-2020	1,582	7	0.44%
2020-2021 (projected)	1,575	-7	-0.44%
Change since 2009-2010	**-177**		**-10.10%**
Source: CHUFSD Proposed Budget Brochure 2020-2021			

ANTICIPATED NUMBER OF PUBLIC SCHOOL AGE CHILDREN

As shown in **Table 3** below, the Proposed Project would result in an estimated 11 new public school age children (PSAC) who would be expected to enroll in the CHUFSD. These estimates are based on the Rutgers University Center for Urban Policy Research (CUPR) Residential Demographic Multipliers, June 2006, which are widely accepted as industry standard multipliers. The Rutgers CUPR data used for this analysis is attached as **Appendix C**.

It should be noted that the CUPR multipliers are conservative and often overestimate the number of PSAC living in multifamily housing in suburban areas because the CUPR data reflects a state-wide analysis of urban areas (e.g., cities of 100,000 or more persons), including New York City. It is widely recognized that families living in large urban areas have more PSAC per bedroom than the typical suburban multifamily resident. As such, the multifamily housing characteristics data are skewed due to factors not found in suburban settings such as Westchester County.

Table 3
Anticipated Number of Public School Age Children
Based on Rutgers CUPR Data

Type of Unit	Anticipated Rent Range	Number of Units	Applicable Rutgers CUPR Multiplier	Number of PSAC
1 Bedroom	$500-$1,000	1	0.27	0.27
1 Bedroom	>$1,000	10	0.07	0.70
2 Bedroom	$750-$1,000	2	0.45	0.90
2 Bedroom	>$1,100	9	0.16	1.44
3 Bedroom	$750-$1,250	1	1.3	1.30
3 Bedroom	>$1,250	10	0.63	6.30
TOTAL		**33**		**10.91**

Sources: Regan Development Corporation**;** Rutgers University Center for Urban Policy Research - New York (Table 3-2) All Public School Children: School-Age Children in Public School (PSAC) - 5+ Units-Rent, 1, 2, and 3 BR (**Appendix C**).

CHUFSD BUDGET

The CHUFSD has a total budget of approximately $49.4 million for the 2020-2021 school year[4], a 1.88 percent increase from the 2019-2020 school year and a 4.77 percent increase from the 2018-2019 school year (see **Table 4**).

Table 4
Historical Budget for the Croton-Harmon Union Free School District

Year	Total Budget
2015-2016	$46,076,000
2016-2017	$45,905,975
2017-2018	$46,499,826
2018-2019	$47,172,204
2019-2020	$48,513,218
2020-2021	$49,424,525

Sources: Croton-Harmon Union Free School District

The CHUFSD breaks down their 2020-2021 budget into five parts: general support/administrative; instruction; transportation; employee benefits; and debt service/inter-fund transfers (see **Table 5**).

[4] https://www.chufsd.org/cms/lib/NY01913608/Centricity/shared/budget/2020-2021%20budget/2020-21%20CHUFSD%20Official%20Budget%20Statement.pdf

Table 5
2020-2021 CHUFSD Budget Detail

	Source / Use	Budget	Percentage of Total
Expenditures	General Support / Administration	$6,688,208	13.5%
	Instruction	$26,314,952	53.2%
	Transportation	$2,636,698	5.3%
	Employee Benefits	$9,565,761	19.3%
	Debt Service/Inter-fund Transfers	$4,218,906	8.5%
	Total Expenditures	**$49,424,525**	--
Revenue	Tax Levy	$40,844,252	82.7%
	State Aid	$5,591,438	11.3%
	Non-State Aid	$700,000	1.4%
	Reserves	$2,288,835	4.6%
	Total Revenue	**$49,424,525**	--

Sources: Croton-Harmon Union Free School District Budget Presentation 2020-2021 and Proposed Budget.

For the 2020-2021 school year, CHUFSD expects to receive approximately $5.6 million in State aid, which covers approximately 11.3 percent of the total expected expenditures. As such, the CHUFSD must raise 88.7 percent of its budget from the Tax Levy, Non-State aid, and reserve fund sources.

As of the summer of 2020, CHUFSD had planned to undertake capital project work at all three district schools, at no additional cost to taxpayers[5]. One district-wide safety initiative for all buildings includes door replacements in select classroom wings, along with the replacement of wire glass with safety glass. Other planned improvements include the following:

- At Croton-Harmon High School, the library will be reconfigured, including the creation of new study and work areas. Four multi-fixture bathrooms will be upgraded in the 1924 section of the building, while casework used for storage and display will be replaced in the third floor art room.
- At Pierre Van Cortlandt Middle School, improvements will be made to the ventilation, fire dampers and HVAC control system in the 1939 portion of the building, along with crawl space ventilation. Steam pipes and valves will be upgraded as needed, and associated asbestos will be removed. The gym ceiling (from 1939) will also be replaced, as will the roof gutter on the south side of the building. Pedestrian lighting will be installed on the exterior path to the lower parking lot.
- At Carrie E. Tompkins Elementary School, new floor tiling will be installed in the main hallway. Additionally, rusted steel window lintels will be replaced and exterior brick will be repaired. All first grade classrooms will enjoy new built-in cabinets, counters and sinks.

[5] "Reflections 2020 Budget Edition" newsletter (https://www.chufsd.org/Page/3164)

CONCLUSIONS

Based on the above analysis, the Rutgers CUPR multipliers conservatively estimate 11 PSAC as a result of the Proposed Project. Projected student enrollment through the 2023-2024 school year, when the Proposed Project is expected to be completed and occupied, is currently not available from the CHUFSD. In addition, projected PSAC from other planned residential uses in the district, including the 39-unit multifamily development proposed at 25 South Riverside Avenue[6], was not available for this analysis. However, as discussed above, there is a trend of declining enrollment in the district, and an increase of 11 PSAC over the 2020-2021 projected enrollment of 1,575 students, in addition to background growth, would result in enrollment well below the most recent peak enrollment of 1,752 students in the 2009-2010 school year. Furthermore, the 11 additional students would be distributed across the District's three schools. As discussed above, the CHUFSD budget has been increasing over the same period that enrollment has been decreasing. It is therefore anticipated that the estimated 11 PSAC from the Proposed Project would not result in a substantive marginal cost to the CHUFSD, and the CHUFSD would have enough space and resources to accommodate the project-generated children.

TRAFFIC AND TRANSPORTATION

Attached **Appendix D** includes a technical memorandum and associated attachments that provide the key findings of AKRF's Traffic Impact Study ("TIS"). The full TIS will be submitted to the Village Board of Trustees under a separate cover. The methodology for the TIS was developed through consultation with the Village Engineer, Village Department of Public Works, Village Planning Board, Village Bicycle and Pedestrian Committee, and NYSDOT. As discussed in **Appendix D**, no significant adverse traffic-related impacts are anticipated to result from the Proposed Project, and all study area intersections are projected to operate at acceptable levels of service under Existing, No Build, and Build conditions. No mitigation measures are anticipated to be necessary at any of the study area intersection as a result of the Proposed Project. However, in order to address the occasional blockages of Maple Street by tractor trailer maneuvers to access the adjacent shopping center loading docks, "truck crossing" warning signs are recommended for placement along Maple Street.

[6] https://www.crotononhudson-ny.gov/ongoing-projects-initiatives-proposed-infrastructure-improvements/pages/multi-residential

Appendix A

AKRF Natural Resources Memo

Environmental, Planning, and Engineering Consultants
34 South Broadway
Suite 300
White Plains, NY 10601
tel: 914 949-7336
fax: 914 949-7559
www.akrf.com

Memorandum

To:	Regan Development Corporation
From:	AKRF, Inc.
Date:	April 14, 2021
Re:	41-51 Maple Street, Village of Croton-on-Hudson NY -Wetland and Protected Species Due Diligence
cc:	Daniel O'Connor, P.E. (Village Engineer/Building Inspector); Janine King (Village Manager); Bryan Healy (Secretary to the Village Manager); Linda Whitehead (Village Attorney)

A. INTRODUCTION AND PROJECT DESCRIPTION

This memorandum presents an assessment of the approximately 2.4 acre property located at 41-51 Maple Street (tax parcel number 78.12-3-3 – the "Project Site") in the Village of Croton-on-Hudson, New York (the "Village") to determine the presence or absence of the following:

- Federally, state or locally regulated surface water resources (wetlands, watercourses); and
- Federally or state protected species and/or their habitats.

The Proposed Project involves the new construction of approximately 33 affordable housing units within 2 two-story (approximately 28-foot tall) multifamily apartment buildings. It is our understanding that the Proposed Project would include 11 one-bedroom units, 11 two-bedroom units, and 11 three-bedroom units. Approximately 61 parking spaces would be provided on-site, along with private and public open space.

B. METHODOLOGY

WETLANDS AND WATERCOURSE DUE DILIGENCE

AKRF, Inc. conducted a desktop review of publicly accessible data and mapping resources related to jurisdictional surface waters on or near the Project Site. Resources reviewed were the following:

- U.S. Fish and Wildlife Service (USFWS), National Wetland Inventory (NWI) map
- U.S. Geological Survey (USGS) Historical Maps

- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey
- NYS Department of Environmental Conservation (NYSDEC), Hudson Valley Natural Resource Mapper
- NYSDEC, Environmental Assessment Form Mapper

On March 16, 2021, an AKRF wetland specialist walked the Project Site to confirm the absence (as suggested by the preliminary desktop research) of surface water resources that might fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE), NYS Department of Environmental Conservation (NYSDEC), and/or the Village of Croton-on-Hudson.

PROTECTED SPECIES DUE DILIGENCE

AKRF, Inc. conducted a desktop review of publicly accessible data and mapping resources to determine whether protected species are known to be present on or immediately adjacent to the Project Site. Resources reviewed the following:

- USFWS, Information for Planning and Consultation System (IPaC)
- NYSDEC, Hudson Valley Natural Resource Mapper
- NYSDEC Environmental Assessment Form Mapper

It should be noted that Proposed Project will not require a federal permit and is not seeking any federal funding. Although the USFWS IPaC was consulted as a resource for this analysis, further consultation with the USFWS is not likely to be required.

On March 16, 2021, an AKRF natural resources specialist walked the Project Site to determine the presence of habitat for identified protected species.

C. EXISTING CONDITIONS AND OBSERVATIONS

WETLANDS AND WATERCOURSES

The publically available information reviewed shows no surface water resources or hydric soils mapped on the Project Site. Both USFWS and NYSDEC maps depict a stream to the west of the Project Site running through the parking lot of Croton Auto Park and then on to and through the Beekman Avenue neighborhood (**see Attachments 1 and 2**). This mapped watercourse runs through other neighborhoods, under multiple houses and ends in Vasallo Park. The watercourse appears on USGS maps pre-dating 2013, after which the watercourse no longer appears on the mapping. (**see Attachments 3A and 3B**). The USDA NRCS map of soils on the Project Site (**see Attachment 4**) shows five soil types none of which are consider hydric (supportive of wetlands) soils.

During the March 16, 2021 site visit, AKRF confirmed that there are no wetlands or watercourses present on the Project Site.

PROTECTED SPECIES

At the State level, there are no protected species listed for the Project Site or adjacent environs. The USFWS's IPaC and Threatened and Endangered Species Letter identifies the Indiana bat, a federally endangered species, as the only Endangered Species Act-listed species to occur in the area (**see Attachment 5**). A listing on IPaC or in a Letter does not indicate that the species uses available habitat on or adjacent to a project site, only that they have been documented in the broader area, may occur on a project site or may be affected by a proposed project.

Indiana bats use a variety of habitats during the summer and hibernate in caves and mines, known as hibernacula, in the winter. As there are no hibernacula on the Project Site, winter habitat is not present.

The USFWS's March 2020 Range-wide Indiana Bat Survey Guidelines provides the following on suitable summer habitat for the Indiana bat:

> *"Suitable summer habitat for Indiana bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed nonforested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥5 inches dbh26 (12.7 centimeter) that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Indiana bats have also been observed roosting in human-made structures, such as bridges and bat houses (artificial roost structures); therefore, these structures should also be considered potential summer habitat."*

The Project Site contains dead and dying trees with "*exfoliating bark, cracks, crevices, and/or hollows"* (**see Attachment 6**) and live trees of species known to accommodate roosting bats. There is also a centrally located gap in the "canopy" that allow incidental sunlight to warm the trees. While the on-site and surrounding habitats could potentially provide roost trees for an individual(s), overall the Project Site does not appear likely to provide quality habitat for the Indiana bat.

D. CONCLUSIONS

WETLANDS AND WATERCOURSES

There are no surface water resources under federal, state or local jurisdiction on the Project Site and, as such, construction of the Proposed Project would not require permits related to such resources.

PROTECTED SPECIES

There are no known State protected species or habitats documented in the area of the Project Site including the Indiana bat, a State endangered species. However, the USFWS indicates that the federally endangered Indiana Bat is known to occur in the broader Westchester County geography. While the on-site and surrounding habitats contains trees that have the potential to provide roosting opportunities for the bat, potential impacts to Indiana bat habitat in the region resulting from the Proposed Project are not expected to be significant. As the Proposed Project will not require a federal permit and would not seek federal funding, further consultation with the USFWS is not likely to be required.

ATTACHMENTS

Attachment 1
USFWS NWI Map

U.S. Fish and Wildlife Service

National Wetlands Inventory

41-51 Maple St Croton on Hudson

February 19, 2021

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Attachment 2
NYSDEC Wetlands and Watercourse Map

41-51 Maple St, Croton - NYSDEC HVNRM Wetlands and Watercourses

March 25, 2021

1:2,257

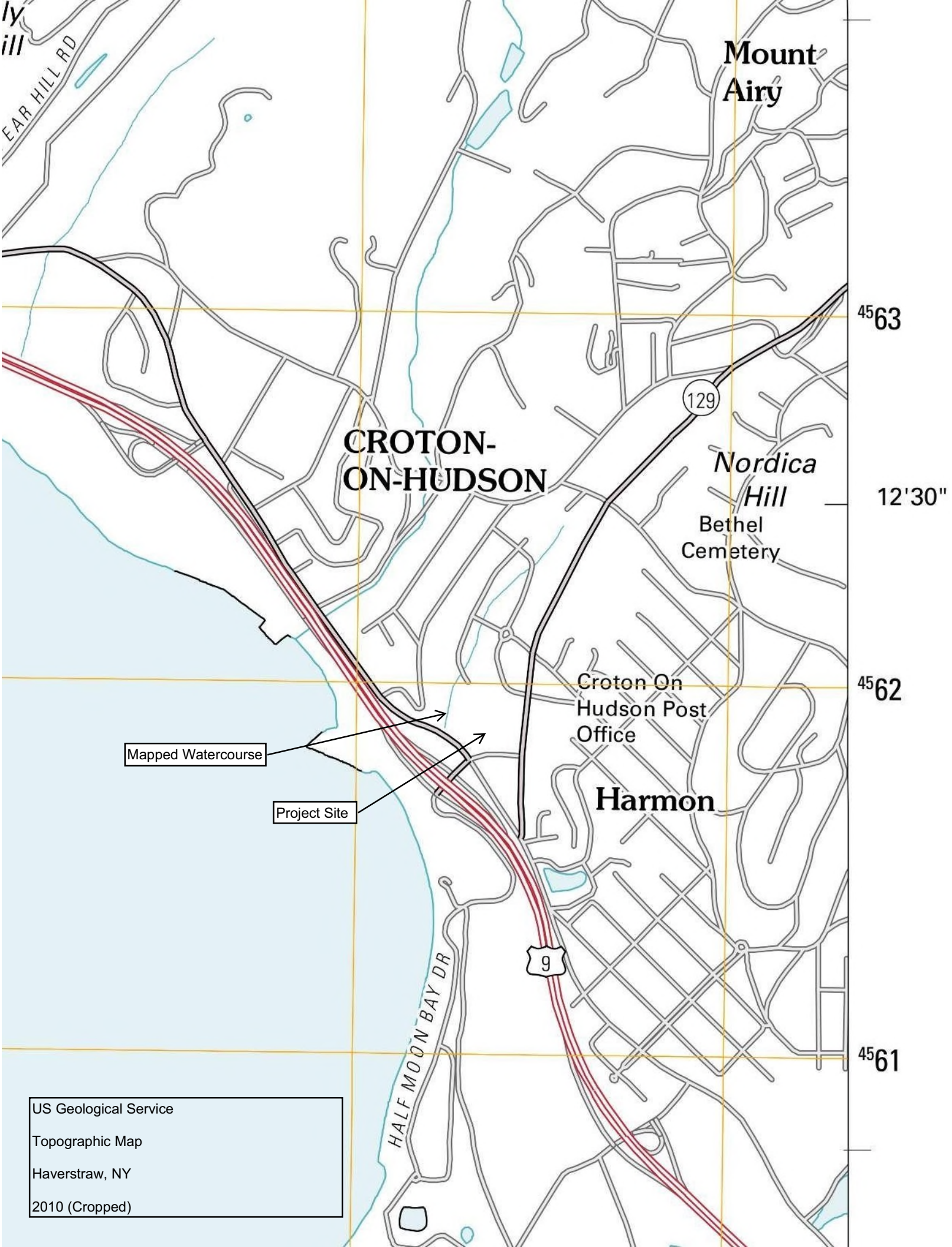
0 0.01 0.03 0.05 mi

0 0.02 0.04 0.09 km

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

NYS Department of Environmental Conservation
Not a legal document

Attachment 3
USGS Topographic Maps (2010 and 2013 – Cropped)

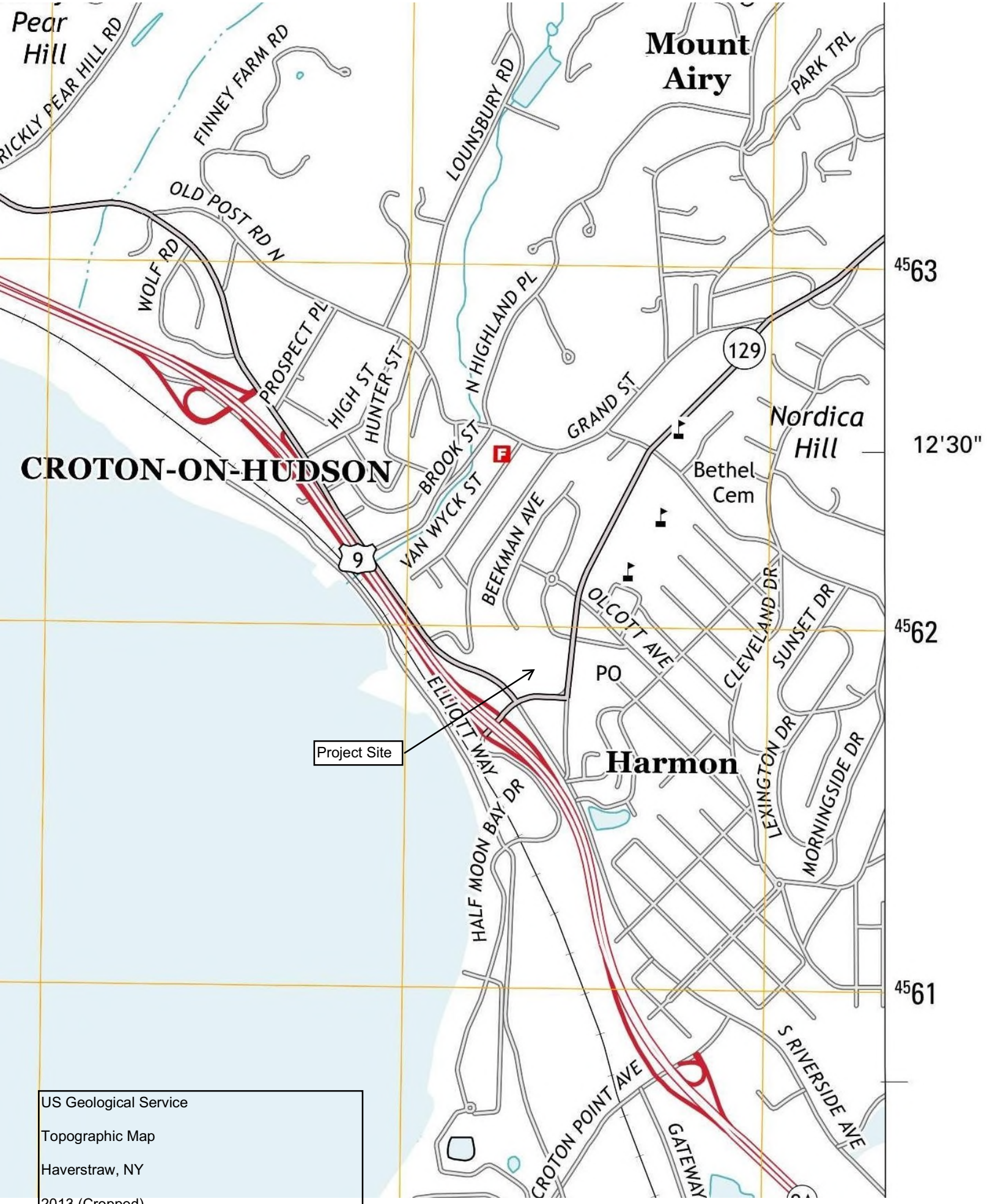


US Geological Service

Topographic Map

Haverstraw, NY

2010 (Cropped)



US Geological Service

Topographic Map

Haverstraw, NY

2013 (Cropped)

Attachment 4
USDA NRCS Soil Map

Soil Map—Westchester County, New York
(41-51 Maple Street, Croton-on-Hudson, NY)

Map Scale: 1:1,080 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Westchester County, New York
Survey Area Data: Version 16, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 6, 2015—Oct 17, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CsD	Chatfield-Charlton complex, 15 to 35 percent slopes, very rocky	0.5	16.6%
PnC	Paxton fine sandy loam, 8 to 15 percent slopes	0.9	34.4%
Ub	Udorthents, smoothed	0.9	34.2%
Uf	Urban land	0.3	10.6%
UpC	Urban land-Paxton complex, 8 to 15 percent slopes	0.1	4.2%
Totals for Area of Interest		**2.7**	**100.0%**

Attachment 5
USFWS Threatened and Endangered Species Letter

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
http://www.fws.gov/northeast/nyfo/es/section7.htm

In Reply Refer To: March 25, 2021
Consultation Code: 05E1NY00-2021-SLI-2048
Event Code: 05E1NY00-2021-E-06436
Project Name: 41-51 Maple Street, Croton-on-Hudson, NY

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list. If listed, proposed, or candidate species were identified as potentially occurring in the project area, coordination with our office is encouraged. Information on the steps involved with assessing potential impacts from projects can be found at: http://www.fws.gov/northeast/nyfo/es/section7.htm

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the Services wind

energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the ESA. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

Long Island Ecological Services Field Office
340 Smith Road
Shirley, NY 11967-2258
(631) 286-0485

Project Summary

Consultation Code: 05E1NY00-2021-SLI-2048
Event Code: 05E1NY00-2021-E-06436
Project Name: 41-51 Maple Street, Croton-on-Hudson, NY
Project Type: DEVELOPMENT
Project Description: Development
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.20302235,-73.88600058154805,14z

Counties: Westchester County, New York

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis*	Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/5949

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Attachment 6
Representative Photos of Trees with Exfoliating Bark

Appendix B

Historic Resources OPHRP Correspondence
Phase 1A Archaeological Documentary Study (AKRF)

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

April 23, 2021

Claudia Cooney
Senior Vice President
AKRF, Inc.
440 Park Avenue South
New York, NY 10016

Re: NYSHCR
41-51 Maple Street Development
41-51 Maple St, Croton on Hudson, NY 10520
21PR01426

Dear Claudia Cooney:

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO). We have reviewed the submitted materials in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources.

SHPO has reviewed *Proposed Redevelopment at 41-51 Maple Street, Croton-On-Hudson, Westchester County, New York, Phase 1A Archaeological Documentary Study* (AKRF, April 2021).

Based upon this review, it is the opinion of the New York SHPO that no historic properties, including archaeological and/or historic resources, will be affected by this undertaking.

If you have any questions, please don't hesitate to contact me.

Sincerely,

Philip A. Perazio, Historic Preservation Program Analyst - Archaeology Unit
Phone: 518-268-2175
e-mail: philip.perazio@parks.ny.gov via e-mail only

cc: Elizabeth Meade, AKRF

NEW YORK STATE OF OPPORTUNITY. Parks, Recreation and Historic Preservation

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

ARCHAEOLOGY COMMENTS

Phase IA/IB Archaeological Survey Recommendation
Project: 41-51 Maple Street Development
PR#: 21PR01426
Date: 9 March 2021

Your project is in an archaeologically sensitive location. Therefore, the State Historic Preservation Office/Office of Parks, Recreation and Historic Preservation (SHPO/OPRHP) recommends a Phase IA/IB archaeological survey for components of the project that will involve ground disturbance, unless substantial prior ground disturbance can be documented. A Phase IA/IB survey is designed to determine the presence or absence of archaeological sites or other cultural resources in the project's Area of Potential Effects (APE).

If you consider the entire project area to be disturbed, documentation of the disturbance will need to be reviewed by SHPO/OPRHP. Examples of disturbance include mining activities and multiple episodes of building construction and demolition. Documentation of ground disturbance typically consists of soil bore logs, photos, or previous project plans. Agricultural activity is not considered to be substantial ground disturbance.

Please note that in areas with alluvial soils or fill archaeological deposits may exist below the depth of superficial disturbances such as pavement or even deeper disturbances, depending on the thickness of the alluvium or fill. Evaluation of the possible impact of prior disturbance on archaeological sites must consider the depth of potentially culture-bearing deposits and the depth of planned disturbance by the proposed project.

Our office does not conduct archaeological surveys. A 36 CFR 61 qualified archaeologist should be retained to conduct the Phase IA/IB survey.

Please also be aware that a Section 233 permit from the New York State Education Department (SED) may be necessary before archaeological fieldwork is conducted on State-owned land. If any portion of the project includes the lands of New York State, you should contact the SED before initiating survey activities. The SED contact is Christina Rieth and she can be reached at christina.rieth@nysed.gov. Section 233 permits are not required for projects on private land.

If you have any questions concerning archaeology, please contact Philip Perazio at philip.perazio@parks.ny.gov.

Proposed Redevelopment at 41-51 Maple Street

CROTON-ON-HUDSON, WESTCHESTER COUNTY, NEW YORK

Phase 1A Archaeological Documentary Study

OPRHP Project Review Number 21PR01426

Prepared for:

Regan Development Corporation
1055 Saw Mill River Road, #204
Ardsley, NY 10502

Prepared by:

AKRF, Inc.
34 South Broadway, Suite 300
White Plains, NY 10601

APRIL 2021

Management Summary

SHPO Project Review Number:	21PR01426
Involved Agencies:	Croton-on-Hudson Village Board of Trustees
Phase of Survey:	Phase 1A Archaeological Documentary Study
Location Information	
Location:	41-51 Maple Street (parcel number 78.12-3-3); Croton-on-Hudson, NY
Minor Civil Division:	11953 (Croton-on-Hudson)
County:	Westchester County
Survey Area	
Length:	Approximately 530 feet
Width:	Approximately 380 feet
Area:	Approximately 2.4 acres
USGS 7.5 Minute Quadrangle Map:	Haverstraw
Report Author:	Elizabeth D. Meade, PhD Registered Professional Archaeologist 16353
Date of Report:	April 2021

Table of Contents

List of Figures

List of Photographs

Chapter 1: Introduction and Methodology

A. PROJECT DESCRIPTION

Regan Development Corporation, contract vendee of the property located at 41-51 Maple Street (the "Project Site" or "Site"), is proposing to develop a new multifamily residential development on the Project Site (see **Figure 1**). The Project Site (Tax Parcel 78.12-3-3, see **Figure 2**) is a 2.4-acre Village-owned property. The Project Site is currently vacant and would be developed with two new 2-story buildings with associated public and private open space, parking spaces, an improved bus shelter, and landscaped areas and buffer zones with retaining walls (the "Proposed Project").

B. PROJECT BACKGROUND AND ENVIRONMENTAL REVIEW

The Proposed Project requires special use permit approval from the Village of Croton-on-Hudson (the "Village") Board of Trustees pursuant to §230-20.3.B(4) of the Village Zoning Code. The Proposed Project would be constructed using Low Income Housing Tax Credit financing through New York State Homes and Community Renewal ("HCR"), and Housing Implementation Funding from Westchester County. Additional permits and approvals will be required from village/town, county, and state agencies, including the Village Board of Trustees; the Village Planning Board; the Village Waterfront Advisory Committee; the Village Engineering Department; the Westchester County Board of Legislators; the Westchester County Department of Planning; The Westchester County Department of Health; the New York State Department of Transportation; and the New York State Department of Environmental Conservation (including a State Pollutant Discharge Elimination System [SPDES] General Permit). These permitting and funding actions are subject to the State Environmental Quality Review Act (SEQRA) and Section 14.09 of the New York State Historic Resources Preservation Act of 1980. The Village Board of Trustees is serving as the Lead Agency for the Proposed Project's environmental review.

Pursuant to SEQRA and Section 14.09, consultation regarding the Proposed Project was initiated with the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP). In comments issued through the New York State Cultural Resource Information System (CRIS) on March 9, 2021, OPRHP indicated that the Project Site is situated in an area of potential archaeological sensitivity and requested that a Phase 1 Archaeological Survey be undertaken or an analysis of the proposed disturbance be completed to clarify the Site's potential to contain intact archaeological resources. This Phase 1A Archaeological Documentary Study has been prepared to satisfy that comment.

Specific standards on residential development for the Project Site's C-2 District were developed as part of the Municipal Place Gateway and North Riverside Neighborhood Zoning Study prepared by BFJ Planning in 2019, which became the 2020 Amendment to the Village's Comprehensive Plan and Zoning Code (the "2020 Amendment"). In connection with the 2020 Amendment, the Village Board of Trustees received recommendations from the Village Planning Board, the Westchester County Planning Board, and the Village's Waterfront Advisory Committee. These recommendations and the Board of Trustees' findings led to the adoption of a Negative Declaration under SEQRA and determination of consistency with the policies of the Local Waterfront Revitalization Program (LWRP). It should be noted BFJ's environmental analyses, presented in the Full Environmental Assessment Form for the 2019 Zoning Study (the "2019

FEAF"), considered the potential environmental impacts of a larger and denser development envelope than the current proposal. However, the 2019 FEAF analyzed the impact of the proposed zoning text amendment and not a detailed site plan. As such, at that time, the limit of disturbance was not yet defined for the Project Site and a formal consultation with OPRHP under Section 14.09 was not initiated.

In September 2020, the Village initiated a request for proposals (RFP) process for the redevelopment of the Project Site (described in the RFP as the "Katz Property"). The Village outlined a number of development objectives in the RFP, including activation of the Municipal Place Gateway District (MPGD) through the development of a vacant parcel with residential or mixed-use land uses appropriate for the surrounding area, and compliance with the specific development guidelines for the Katz Property that were formally adopted as part of the 2020 Amendment. In early 2021, following review of the Regan Development Corporation's proposal for an affordable multifamily residential development, the Village Board of Trustees selected Regan Development Corporation to redevelop the Project Site.

C. RESEARCH GOALS AND METHODOLOGY

The following Phase 1A Archaeological Documentary Study ("Phase 1A" or "Study") of the 41-51 Maple Street Project Site has been designed to satisfy the requirements of OPRHP, issued in 2005, and the New York Archaeological Council (NYAC), which were issued in 1994 and adopted by OPRHP in 1995. This Study documents the development history of the Project Site and its potential to yield archaeological resources, including both precontact and historic cultural resources.

This Phase 1A Archaeological Documentary Study has four major goals: (1) to determine the likelihood that the Project Site was occupied during the precontact (i.e., Native American) and/or historic periods; (2) to determine the effect of subsequent development and landscape alteration on any potential archaeological resources that may have been located at the Project Site; (3) to make a determination of the Project Site's potential archaeological sensitivity; and (4) to make recommendations for further archaeological analysis, if necessary. The steps taken to fulfill these goals are explained in greater detail below.

The first goal of this documentary study is to determine the likelihood that the Project Site was inhabited during the precontact or historic periods and identify any activities that may have taken place on the Project Site that would have resulted in the deposition of archaeological resources. To determine the likelihood of the Project Site's occupation during the precontact and historic periods, documentary research was completed to establish a chronology of the Project Site's development and landscape alteration, to identify individuals who may have owned the land or worked and/or resided there, and to determine whether buildings were present on the Project Site in the past. Data was gathered from various published and unpublished primary and secondary resources, such as historic maps, topographical analyses (both modern and historic), historic photographs, newspaper articles, local histories, and previously conducted archaeological surveys. These published and unpublished resources were consulted at various repositories and archives. Information on previously identified archaeological sites and previous cultural resources assessments was accessed through the New York State Cultural Resource Information System (CRIS).[1] Online textual archives, such as Google Books and the Internet Archive Open Access Texts, were also accessed.

The second goal of this Phase 1A Archaeological Documentary Study is to determine the likelihood that archaeological resources could have survived intact on the Project Site after development and landscape alteration. Potential disturbance associated with prior construction/demolition of buildings, paving/grading, mining activities, utility installation, and other construction impacts was also considered. AKRF analyzed historic maps documenting structures on the Project Site and compared historical with current topographical

[1] https://cris.parks.ny.gov

maps to determine the extent to which the Project Site has been disturbed. After identifying the likelihood that archaeological resources were deposited within the boundaries of the Project Site and the likelihood that they could remain intact given subsequent development, erosion, and landscape alteration, AKRF made a sensitivity determination for both precontact and historic period resources. As described by NYAC in their *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State*:

> *An estimate of the archaeological sensitivity of a given area provides the archaeologist with a tool with which to design appropriate field procedures for the investigation of that area. These sensitivity projections are generally based upon the following factors: statements of locational preferences or tendencies for particular settlement systems, characteristics of the local environment which provide essential or desirable resources (e.g., proximity to perennial water sources, well-drained soils, floral and faunal resources, raw materials, and/or trade and transportation routes), the density of known archaeological and historical resources within the general area, and the extent of known disturbances which can potentially affect the integrity of sites and the recovery of material from them* (NYAC 1994: 2).

The third goal of this Study is to make a determination of the Project Site's archaeological sensitivity. As stipulated by the NYAC standards, sensitivity assessments should be categorized as low, moderate, or high to reflect "the likelihood that cultural resources are present within the project area" (NYAC 1994: 10). For the purposes of this Study, those terms are defined as follows:

- Low: Areas of low sensitivity are those where the original topography would suggest that Native American sites would not be present (i.e., locations at greater distances from fresh and salt water resources), locations where no historic activity occurred before the installation of municipal water and sewer networks, or those locations determined to be sufficiently disturbed so that archaeological resources are not likely to remain intact.
- Moderate: Areas with topographical features that would suggest Native American occupation, documented historic period activity, and with some disturbance, but not sufficient disturbance to eliminate the possibility that archaeological resources are intact in the Project Site.
- High: Areas with topographical features that would suggest Native American occupation, documented historic period activity, and minimal or no documented disturbance.

The fourth/final goal of this Study is to recommend additional archaeological investigations where necessary. According to NYAC standards, Phase 1B archaeological testing is generally warranted for areas determined to have moderate sensitivity or higher. Archaeological testing is designed to determine the presence or absence of archaeological resources that could be impacted by a proposed project. Should archaeological resources exist in the Project Site, these resources could provide new insight into the precontact occupation of the general Croton-on-Hudson area, the transition from Native American to European settlement, or the historic period occupation of the Project Site.

Chapter 2: Background Research

A. ENVIRONMENTAL AND PHYSICAL SETTINGS

CURRENT SITE CONDITIONS

The Project Site is currently vacant and is largely overgrown with mature trees and low vegetation (see **Photographs 1 through 4**). A former path that is visible on aerial photographs (see **Figure 3** and **Photograph 4**) extends through the western portion of the Project Site. No extant buildings are present on the Site, however surveys published as recently as the 1990s indicate that foundation remnants from former buildings were or are present on the site. Much of the Site's ground surface is obscured by vegetation or overgrowth (see **Photograph 5**). The site is separated from adjacent commercial and residential developments, in some places by steep grade changes (see **Photograph 6**).

GEOLOGY AND TOPOGRAPHY

Westchester County is within a geographic bedrock region known as the Manhattan Prong of the New England (Upland) Physiographic Province. This region is a "rolling lowland area…of metamorphic rocks" dating to the Early Paleozoic, which began approximately 575 million years ago (Isachsen et al. 2000). The bedrock in the vicinity of the Project Site is Inwood Marble, which dates to approximately 435 million years ago (Fisher, et al. 1995; Isachsen et al. 2000). A series of soil borings completed by Connecticut Test Borings Inc. as part of a proposed development on the Site in 1993 indicate that bedrock is situated between approximately 4 and 19.6 feet below the ground surface across the Project Site and that boulders are visible on the surface in the northeastern corner of the Site.

Throughout the majority of the Manhattan Prong, the bedrock is covered with glacial till associated with glacial kame deposits, which are largely made up of fine gravel and sand (Cadwell 1989). These deposits were left behind by massive glaciers of up to 1,000 feet thick that retreated from the area towards the end of the Pleistocene. There were four major glaciations that affected the region until approximately 12,000 years ago when the Wisconsin period—the last glacial period—came to an end. The rocks and sand deposits left behind as a result of glacial movements brought about the creation of hundreds of sand hills, or kames, some of which were nearly one hundred feet tall.

USGS maps updated through 2020 (see **Figure 1**) indicate that the surface elevation of the Project Site slopes down to the south from a maximum elevation of 80 feet above mean sea level at the northern end to 40 feet above mean sea level at the southern end of the Site. The 1892 USGS map of the area (see **Figure 4**) suggests that the surface elevation of the Project Site sloped down to the southeast from a maximum elevation of 100 feet above sea level near the northeastern portion of the Site to an elevation of 60 feet near the southeastern corner. A detailed discussion of landscape modification on the Project Site is presented later in this chapter. The 1892 map also indicates that areas of higher elevation and tall hills were located to the north and east of the Project Site. The modern landscape of the Project Site includes several areas along the southwestern side of the Project Site and in the central part of the Project Site where slopes are greater than 15 percent.

HYDROLOGY

The Project Site is situated approximately 1,000 feet northwest of the shore of the Hudson River and is approximately 3,500 feet west of the Croton River. Historically, several small streams drained into the Hudson River more than 1,500 feet to the north of the Project Site (see **Figure 4**). Marshland areas lined the Croton River approximately 4,000 feet to the south of the Project Site. Some 19th century maps and atlases, including the 1858 Merry map and the 1868 Beers atlas (see **Figure 5**), also depict a stream in the immediate vicinity of the Project Site. Some 20th century maps, including the 1910 Bromley atlas, depict the stream in different configurations than those represented in the 1858 and 1868 maps, and it therefore appears that landscape modification in the area resulted in the alteration of waterways in and around the Project Site.

SOILS

The Web Soil Survey published by the National Resource Conservation Service (United States Department of Agriculture) indicates that five soil complexes are situated within or immediately adjacent to the Project Site. These soil types are described in greater detail in **Table 2-1** and depicted on **Figure 3**. The mapped soils are consistent with urban development, steep slopes, and/or shallow bedrock.

Table 2-1
Study Area Soils

Series Name (Map Symbol)	Soil Horizon Depth (in)	Soil Type	Slope (%)	Drainage	Landform
Chatfield-Charlton Complex (CsD)	Oi: 0 to 1	Slightly decomposed plant material	15 to 35	Well drained	Ridges, hills
	A: 1 to 2	Fine sandy loam			
	Bw: 2 to 30	Gravelly fine sandy loam			
	2R: 30 to 40	Bedrock			
Paxton Fine Sandy Loam (PnC)	Ap: 0 to 8	Fine sandy loam	8 to 15	Well drained	Ground moraines, drumlins, hills
	Bw1: 8 to 15	Fine sandy loam			
	Bw2: 15 to 26	Fine sandy loam			
	Cd: 26 to 65	Gravelly fine sandy loam			
Udorthents, Smoothed (Ub)	H1: 0 to 4	Gravelly loam	0 to 8	Moderately well drained	Depressions
	H2: 4 to 70	Very gravelly loam			
Urban Land (Uf)	n/a	n/a	n/a	n/a	n/a
Urban Land-Paxton (UpC)	M: 0 to 10	Cemented material	0 to 15	n/a	n/a

Note: See **Figure 4** for soils map.
Source: Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed April 5, 2021.

B. PREVIOUSLY REPORTED PRECONTACT ARCHAEOLOGICAL SITES

In general, Native American archaeological sites in the northeastern United States are most often located in coastal areas with access to marine resources, near fresh water sources and areas of high elevation (New York Archaeological Council 1994). Further indication of the potential presence of Native American activity near a site is indicated by the number of precontact archaeological sites that have been previously identified. The Project Site is included within an area of generalized archaeological sensitivity as mapped by OPRHP's Cultural Resources Information System (CRIS).[1] A search of the files of the OPRHP and New York State Museum (NYSM) indicates that eleven precontact archaeological sites have been identified within a radius of approximately one mile of the Project Site (see **Table 2-2**). The archaeological sites

[1] Accessible through: https://cris.parks.ny.gov/

represent a variety of occupation site types, including campsites, villages, and shell middens. Several of these sites were discovered in the early 20th century and were reported by authors such as Arthur C. Parker (1920) and Mary Butler. Others were documented as a result of modern archaeological investigations.

Table 2-2
Precontact Archaeological Sites within 1 Mile of the Project Site

Site Name/Number	Site Type	Approximate Distance from Project Site	Source
Prickly Pear Hill Locus 1 OPRHP Site 11953.000007	Quarry site with evidence of raw quartz, quartz bifaces and flakes, and one chert scraper	5,400 feet	
Prickly Pear Hill Locus 2 OPRHP Site 11953.000008	Quarry site with evidence of raw chert and quartz; quartz bifaces and flakes; one quartzite hammerstone; one Cortlandt Complex hammerstone; and fire-cracked rock	5,200 feet	
Prickly Pear Hill Locus 3 OPRHP Site 11953.000009	Quarry site with evidence of raw quartz, quartz bifaces and flakes, and fire-cracked rock	4,750 feet	
Tompkins Elementary Site OPRHP Site 11953.00027	Middle to Late Woodland campsite with pottery fragments and chert flakes	4,200 feet	
Starbuck Site NYSM Site 6865 (Butler Site W14)	Information unknown	1,000 feet	
Van Cortlandt Site NYSM Sites 605	Information unknown	5,000 feet	
NYSM Site 5139	Village site containing an earthwork and burials; associated with the *Kitchawank* people	3,100 feet	Parker 1920
Cottage Site NYSM Site 8917	Information unknown	4,600 feet	
Griggs Site NYSM 6866 (Butler Site W13)	Information unknown	3,600 feet	
Croton Neck NYSM Site 602	Information unknown	4,750 feet	
NYSM Site 5237	Burial site	5,000 feet	Parker 1920

Source: The files of NYSM and OPRHP (accessed through CRIS).

Three of the sites, located approximately one mile to the north of the Project Site, were sites associated with quarrying activity on Prickly Pear Hill as documented by BTK Associates in 1990. Two additional sites were documented by the archaeologist Mary Butler as part of her survey of the Hudson Valley region in the 1930s and 1940s. However, little information about these sites is known. The Starbuck site, the site located in closest proximity to the Project Site, is one of the archaeological sites documented by Butler. Two sites were documented by Parker (1920), including NYSM Site 5139, a large village site located just over 3,000 feet to the south of the Project Site. Parker described the site as follows:

> *Village site of the Kitchawanks near Croton and on the neck of Croton point, formerly called Senesqua neck. M.R. Harrington explored the area in 1899, and within an earthwork on this site found several skeletons* (Parker 1920: 710).

Other descriptions of Harrington's work indicate that it was completed while he was affiliated with the American Museum of Natural History and that other than the four burials he identified, there were "no relics of value" (Beauchamp 1900:159).

C. REVIEW OF HISTORICAL MAPS AND IDENTIFICATION OF MAP-DOCUMENTED STRUCTURES

A review of 19th and 20th century maps indicates that the Project Site remained vacant for much of the historic period. One of the earliest maps depicting the Village of Croton-on-Hudson and the Project Site was published by Sidney and Neff in 1851. This map depicts a precursor to modern Grand Street to the north of the Project Site and a second road to the south of the Site that does not appear to have a modern analog but was in the vicinity of what is now Radnor Avenue. The area between the two roads, including the Project Site, is depicted as vacant land. A map of the estate of Philip C. Van Wyck prepared by Thomas Cornell in 1850 depicts the land to the north of the Project Site and rather than indicated that the Project Site was included within a large tract of land owned by John Cox, does not provide additional information about the Project Site itself. The 1858 Merry map depicts the Project Site and vicinity in the same manner, but depicts a stream running through the area between the two previously referenced roads in the area to the south of the Project Site.

This area continues to be depicted as vacant land on the 1867, 1868, and 1872 Beers atlases of Westchester. The three Beers atlases indicate that the waterfront of the Village of Croton Landing had become the site of the "J. Cocks Steam Brick Yard" and other members of the Cox family appeared to own houses in the area surrounding the Project Site. The 1881 Bromley atlas indicates that the land immediately south of the road that is now known as Grand Street (then known as Lower Landing Road) was divided into lots and continued to be included within the Van Wyck estate. The land to the south, including the Project Site, was the property of John Cox. By 1887, the Project Site was part of the estate of Francis Larkin, as seen on a map produced that year by George H. Cartwright. The 1887 map depicts the Project Site as undeveloped and bisected by "Croton Lake Avenue," which extended from River Road (now South Riverside Avenue) to the east and along the line of modern Maple Street to the east of the Project Site. To the west of Croton Lake Avenue was a stream that passed through the center of the Project Site. The 1887 map also identifies an area of "rock cutting" in the northern end of the Project Site, northwest of a bend in Croton Lake Avenue.

By the publication of the 1901 Bromley atlas, additional brick yards had been developed along the waterfront in Croton Landing. The Project Site appears to be located within the undeveloped land of "T. Larkin" on that map. A road was located in the eastern portion of the Larkin estate in the vicinity of modern Maple Street and the former Croton Lake Avenue as seen on the 1887 Cartwright map. The 1910 Bromley atlas (see **Figure 6**) identifies the Project Site within the 135-acre "Frank Larkin Estate." That map continues to depict the Project Site as vacant but depicts a road through the Larkin property, a portion of which is in the current location of Maple Street/the previously described Croton Lake Avenue. The 1910 atlas also continues to depict the previously referenced stream to the west of Croton Lake Avenue. The Project Site appears in much the same condition on the 1930 Hopkins atlas (see **Figure 7**). The Hopkins atlas indicates that the former Larkin estate had been subdivided into development lots by A.E. Ottaviano, Inc. The map is the first to depict Maple Street in its current alignment to the south of the Project Site. The map continues to depict the former line of the road—which is also referred to as Croton Lake Avenue—and indicates that some proposed development lots were located within the Project Site. A map of the "Van Wyck-Larkin Manor" subdivision as proposed by A.E. Ottaviano, Inc. depicts the subdivision in a different manner and indicates that fewer development lots were proposed within the location of the Project Site.

Angelo E. Ottaviano, an Italian immigrant, was a local developer who as president of A.E. Ottaviano, Inc. (*The Kingston Daily Freeman* 1954). He was known for building roads and bridges in Croton-on-Hudson, where he resided, and across Westchester, Ulster, and Rockland Counties until his death in 1954 (ibid). He was also responsible for building the Van Wyck Apartment House, the first apartment complex in the Village circa 1929 (Croton-on-Hudson Historical Society 2001). He was heavily involved in the Croton-on-Hudson area, and in 1950 he donated a three-acre plot of land to the Village for the purposes of

establishing a war memorial for local veterans (*The Daily Item* 1950). He was also the owner of the Black Rock Swimming Club on the shores of the Croton River, which he maintained as a racially segregated institution and he was personally responsible for ejecting the son of noted singer Paul Robeson, who was of African descent, from the property (*The Daily Item* 1947). He was also involved with the firm of Reagan and Ottaviano, the office of which was located on the former Depot Square as depicted on the 1930 Hopkins atlas to the north of the Project Site near what is now the Croton Expressway opposite Farrington Road.

The 1935 Sanborn map identifies the Project Site within the larger property of the Hudson Concrete Block Company. The map depicts a one- to two-story (with basement) wood frame and metal building on the Project Site and indicates that it was connected to electrical and steam lines and that it contained a curing room. Village property records indicate that Ottaviano leased the Project Site to the Hudson Concrete Block Company, Inc., which was issued a permit in 1941 for the construction of a one-story office building. Aerial photographs appear to confirm some grading along the western side of the Project Site as a result of the sand mining in 1947 and 1960.[1] A Sanborn map published in 1950 continues to depict the Project Site as largely vacant land possibly associated with the property of the Croton Mason Supply. As seen on previous maps, the northeastern portion of the Project Site was divided into development lots but no buildings had been constructed. The southwestern portion of the Project Site was developed with a small one-story wood frame structure that was smaller than, but in the same location as, the building seen on the 1935 Sanborn map. The 1950 Sanborn map indicates that the building was used for "contractor's storage," presumably the same building that was constructed on the Project Site in 1941. The southwestern portion of the Project Site was included within a larger industrial property that continued to the west. A 1965 Sanborn map depicts two one-story commercial buildings on the Project Site, one of which was used for storage. The 1965 map is the first to depict Municipal Place to the south of the Project Site. A.E. Ottaviano, Inc. continued to be the owner of the property at this time. In 1966, A.E. Ottaviano, Inc. was cited by the Village for zoning violations associated with refusal to remove "steel boilers, tanks, hoppers, miscellaneous steel shapes, timbers, and other construction materials" from the larger property situated between Grand Street and Wells Avenue, potentially including the Project Site.

The firm of A.E. Ottaviano, Inc. sold the Project site to Irwin Katz in 1972 although the deed reserved the right for Ottaviano to place utilities including sewer or drainage lines beneath a road within an easement on the property to provide continued access to Maple Street (Westchester County Liber 7102, Page 236). A survey of the site was produced for Katz by W.A. Slater in 1972. The survey depicts the two buildings seen on the 1965 Sanborn map as metal structures. It also indicates that a 50-foot-wide easement separated the developed portion of the Project Site from the residential lots to the north. An aerial photograph of the area taken in 1976[1] continues to depict the two buildings on the Project Site and indicates that the commercial development to the southwest had been constructed. An aerial photograph taken in 1990[1] reflects the demolition of the buildings and indicates that the Project Site was in a similar condition to its present state. A 1993 survey of a portion of the Project Site prepared by Taconic Surveying and Engineering indicates the broken foundation remnants of the two former buildings and the remains of an earlier wood frame structure (see **Figure 8**). Subsequent aerial photographs taken through the present day[1] continue to depict the Project Site in the same condition. Public property records on file with Westchester County indicate that Katz sold the Project Site to Striclin Realty in 2001 and that the parcel was purchased by the Village in 2008.

D. ASSESSMENT OF LANDSCAPE MODIFICATION/DISTURBANCE

In order to assess the extent to which the landscape of the Project Site has been disturbed, a detailed comparison of historical and modern topography was completed. As described previously, a comparison of

[1] Accessible through: https://giswww.westchestergov.com/gismap/

an 1892 USGS map (see **Figure 4**) with modern USGS contour information (see **Figure 1**) would appear to suggest that the grade of the Site has been changed by as much as 20 feet in some locations. To examine the changes more closely to the Site's topography in the 20th century, a topographical survey completed between 1933 and 1937 was compared with topographical information collected through light detection and ranging (Lidar) by the New York City Department of Environmental Protection (NYCDEP) in 2009 (see **Figure 8**). The comparison indicates that minimal landscape transformation has occurred in the northeastern portion of the Site where slopes are greater than 15 percent as mapped by Westchester County. The western portion of the Project Site has been extensively modified through grading. In the 1930s the Site sloped steeply up to the west/northwest between elevations of approximately 55 and 90 feet relative to the National Geodetic Vertical Datum of 1929 (NGVD29) or 53.9 to 88.9 feet relative to the North American Vertical Datum of 1988 (NAVD88). Modern contour information now suggests that the ground surface slopes down to the south/southeast between an elevation of 70 feet relative to NAVD88 (71.1 feet relative to NGVD29) near the northernmost point of the Site to an elevation of 34 feet at the southern end.

A large plateau currently seen in the central-eastern portion of the Site is partially visible on the 1930s topographical map. This area is the general location of the buildings that occupied the Project Site between the 1930s and the 1980s. The plateau area is currently situated at an elevation of 50 to 52 feet relative to NAVD88 (51.1 to 53.1 feet relative to NGVD29) and extends between the eastern and western boundaries of the Project Site. Historically, the plateau was situated only in the eastern half of the Site and its modern western half appears to have been constructed through the grading of the western side of the Project Site. Historically, the plateau was at an elevation of 51.1 feet relative to NAVD88 (50 feet relative to NGVD29) with a slight increase to the north and west. This would appear to indicate that the grade of portions of the plateau have been raised by as much as 1 to 2 feet while others have been lowered by as much as 2 to 3 feet.

Chapter 3: Conclusions and Recommendations

A. CONCLUSIONS

As part of the background research for this Phase 1A Archaeological Documentary Study of the Project Site, various primary and secondary resources were analyzed, including historic maps and atlases, building records, and other historical documents. The information provided by these sources was analyzed to reach the following conclusions.

PROJECT SITE DISTURBANCE CHARACTERIZATION

The comparison of historical and modern topographical data (see **Figure 8**) confirms that the Project Site has experienced significant disturbance. It therefore appears that the landscape of the Project Site was extensively modified as a result of the construction and demolition of buildings with basements, the grading/excavation of adjacent areas of the Project Site, and other disturbance resulting from the Site's industrial use in the 20th century. The areas with the least documented disturbance are the areas of steep (greater than 15 percent) slopes.

PRECONTACT ARCHAEOLOGICAL SENSITIVITY ASSESSMENT

The precontact sensitivity of sites in the northeastern United States is generally evaluated by a site's proximity to level slopes (e.g., less than 12 to 15 percent), water courses, well-drained soils, and previously identified precontact archaeological sites (NYAC 1994). Given the Project Site's proximity to the Hudson River to the west, absent disturbance, any level areas of the Project Site could have served as an ideal location for camping or resource acquisition. At least eleven Native American archaeological sites have been found within one mile of the Project Site. However, the majority of the Project Site has been extensively disturbed as a result of industrial development/use and other portions feature steep slopes of 15 percent or more. Therefore, the Project Site is determined to have low sensitivity for archaeological resources associated with the precontact occupation of Croton-on-Hudson.

HISTORIC ARCHAEOLOGICAL SENSITIVITY ASSESSMENT

The Project Site was in use as an industrial or commercial property between the mid-19th century and the late 20th century. Several map-documented structures were located on the Project Site in the 20th century that were used by on-site businesses. Given the extent of disturbance documented as a result of landscape modification, it is not expected that extensive historic period deposits or features with high research value remain on the Project Site. Therefore, the Project Site is determined to have no sensitivity for archaeological resources associated with the historic period occupation of the area.

B. RECOMMENDATIONS

The Project Site is determined to have low sensitivity for archaeological resources associated with the precontact occupation of the region and no sensitivity for archaeological resources dating to the historic period. As such, no further archaeological analysis is warranted.

References

Beauchamp, William
1900 "Aboriginal Occupation of New York." *Bulletin of the New York State Museum* 32(7).

Beers, F.W.
1867 *Atlas of New York and Vicinity*. New York: F.W. Beers, A.D. Ellis, and G.G. Soule.
1868 *Atlas of New York and Vicinity*. New York: F.W. Beers, A.D. Ellis, and G.G. Soule.

Beers, J.B.
1872 *County Atlas of Westchester, New York*. New York: J.B. Beers & Co.

Bromley, G.W. and Company
1881 *Atlas of Westchester County, New York*. New York: George W. Bromley.
1914 *Atlas of Westchester County, New York: Pocket, Desk, and Automobile Edition*. New York: G.W. Bromley & Co.

Bromley, George W. and Walter S.
1901 *Atlas of Westchester County, New York*. Philadelphia: G.W. Bromley & Co.
1910 *Atlas of Westchester County, New York*. Philadelphia: G.W. Bromley & Co.

Caldwell, Daniel, compiler/editor
1989 *Surficial Geologic Map of New York: Lower Hudson Sheet*. New York State Museum-Geological Survey, Map and Chart Series #40. Albany: New York State Museum.

Cartwright, Geo. H.
1887 "Map of a Part of the Estate of Francis Larkin." Westchester County Clerk Filed Map #882.

Connecticut Test Borings, Inc.
1993 Maple Street, Croton-on-Hudson, borings compiled for McDonald's Corporation, Windsor, CT.

Cornell, Thomas C.
1850 "A Map of Property of Philip C. Van Wyck, Esq." Westchester County Clerk Filed Map #181.

Croton-on-Hudson Historical Society
2001 *Images of America: Croton-on-Hudson*. Charleston, SC: Arcadia Publishing.

The Daily Item
1947 "ALP Protests Ouster." *The Daily Item*. July 18, 1947: page 7. Port Chester, NY.
1950 "Croton Given Tract for War Memorial." *The Daily Item*. January 13, 1950: page 2. Port Chester, NY.

Fisher, Donald W., Yngvar W. Isachsen, and Lawrence V. Rickard, compilers/editors
1995 *Geologic Map of New York: Lower Hudson Sheet*. Originally published 1970, reprinted 1995. New York State Museum and Science Service Map and Chart Series No. 15. Albany: New York State Museum.

Hopkins, G.M.
1930 *Atlas of Westchester County, New York*. Philadelphia: G.M. Hopkins Co.

Isachsen, Y.W., E. Landing, J.M. Lauber, L.V. Rickard, W.B. Rogers, editors.
2000 *Geology of New York: A Simplified Account*. Second Edition. New York: New York State Museum Educational Leaflet 28.

The Kingston Daily Freeman
1954 "Ottaviano Has Heart Attack, Dies at Croton." *The Kingston Daily Freeman.* December 15, 1954: 25. Kingston, NY.

Merry, F.C.
1858 *Map of Westchester County, New York.* New York: M. Dripps.

New York Archaeological Council
1994 *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State*. The New York Archaeological Council

New York City Department of Environmental Protection
2009 "Westchester County 2-ft Contours" Available at: https://gis.ny.gov/elevation/contours/contours-westchester.htm.

New York State Historic Preservation Office
2005 *New York State Historic Preservation Office (SHPO) Phase I Archaeological Report Format Requirements*. Available online: https://parks.ny.gov/shpo/environmental-review/documents/PhaseIReportStandards.pdf.

Parker, Arthur C.
1920 *The Archaeological History of New York.* Albany: The University of the State of New York.

Planning Board, Village of Croton
1937 *Topographical Map: Village of Croton-on-Hudson, Town of Cortlandt, County of Westchester, State of New York*. Croton-on-Hudson, NY: Village Planning Board.

Sanborn Map Company
1935 *Croton-on-Hudson, Westchester County, New York*. New York: Sanborn Map Company.
1950 *Croton-on-Hudson, Westchester County, New York*. New York: Sanborn Map Company.
1965 *Croton-on-Hudson, Westchester County, New York*. New York: Sanborn Map Company.

Slater, W.A.
1972 "Survey of Property Situate in the Village of Croton-on-Hudson, Town of Cortlandt, Westchester Co., NY." Westchester County Clerk Filed Map #18320.

Sidney and Neff
1851 *Map of Westchester County, New* York. White Plains and Philadelphia: Newell S. Brown.

Taconic Surveying and Engineering
1993 "Survey of Property Prepared for McDonald's Corporation Situate in the Village of Croton-on-Hudson, Town of Cortlandt, Westchester County, New York." File No. 1332.

United States Geological Survey
1892 *New York: Tarrytown*. Washington, DC: United States Geological Survey.
2019 *Haverstraw Quadrangle: New York*. Washington, DC: United States Geological Survey.

FIGURES

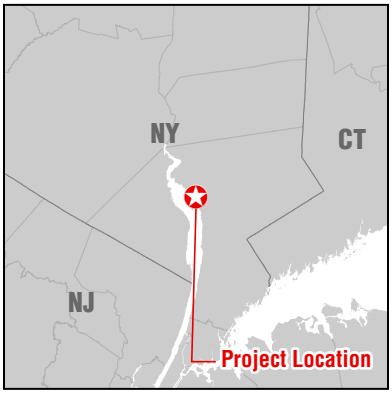
Data source: USGS The National Map, https://basemap.nationalmap.gov/arcgis/rest/services/USGSTopo/MapServer

4.21.21

0 2,000 FEET

Project Location

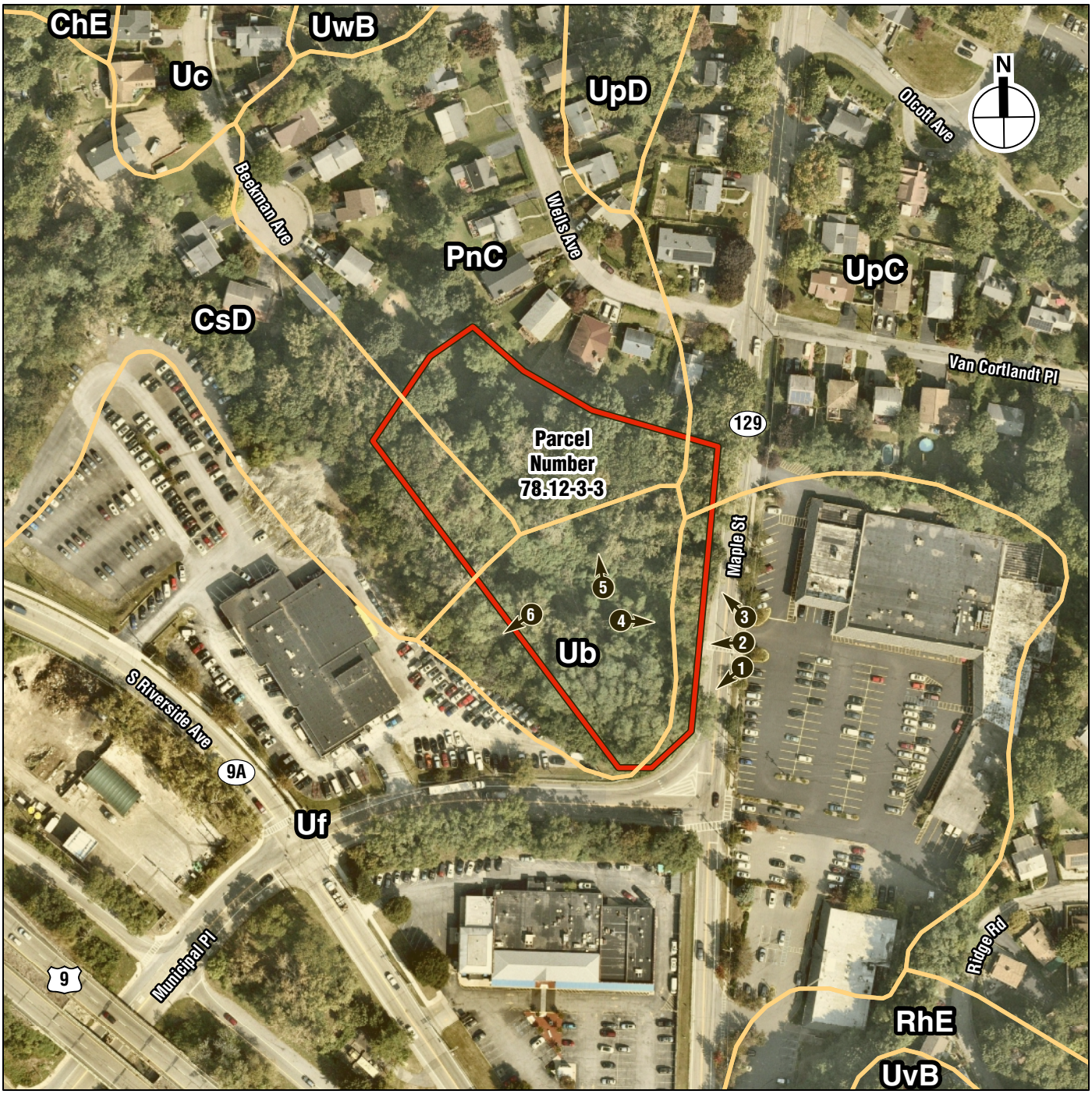
Approximate coordinates of Project Site:
73°53'10"W 41°12'11"N



USGS Topographic Map - Haverstraw Quadrangle

41-51 MAPLE STREET

Figure 1



Project Location, Photo Key, and Soils Map

41-51 MAPLE STREET

Figure 2

4.21.21

Project Location

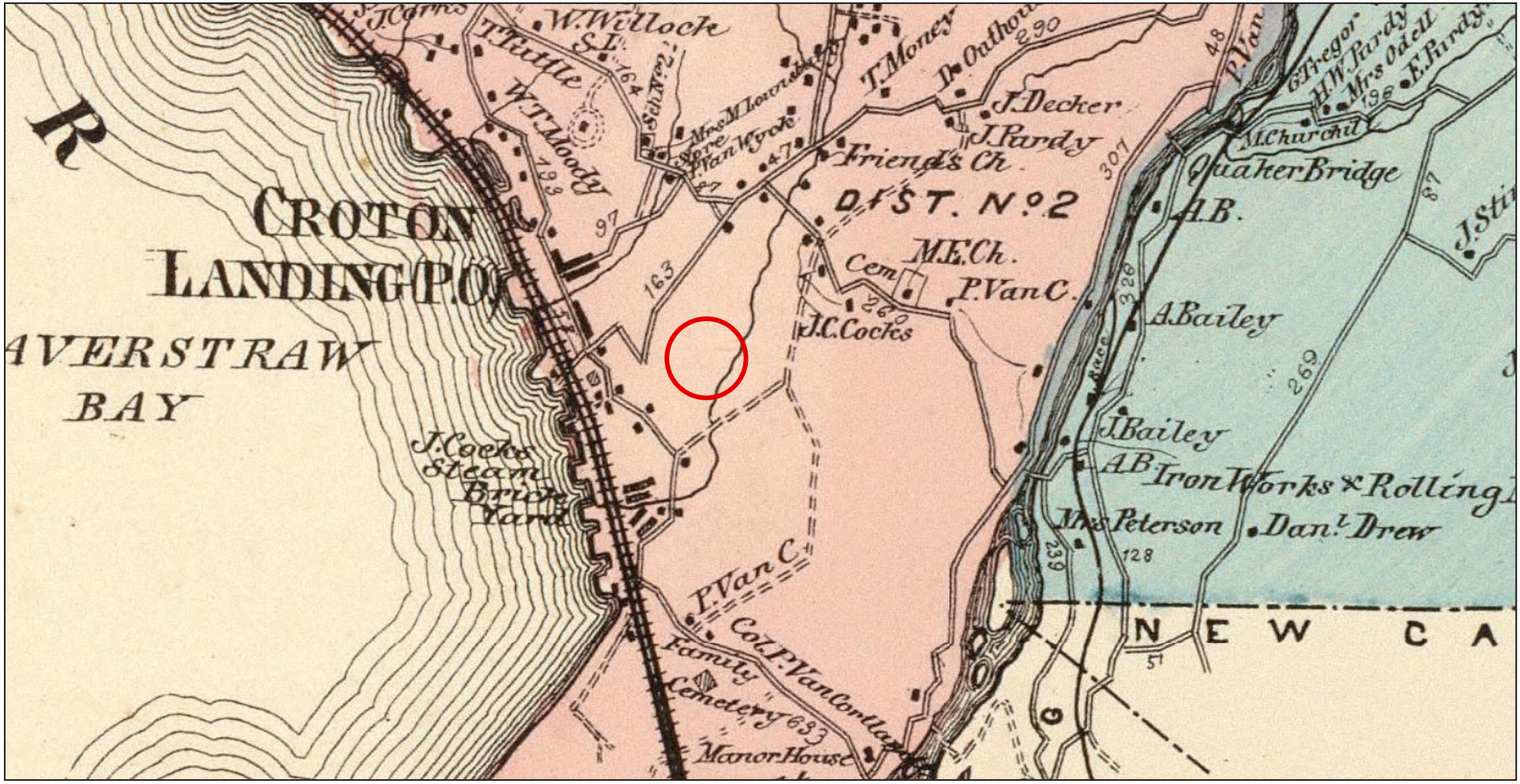
0 1,000 FEET

1892 USGS Map

41-51 MAPLE STREET

Figure 3

4.21.21



NOT TO SCALE

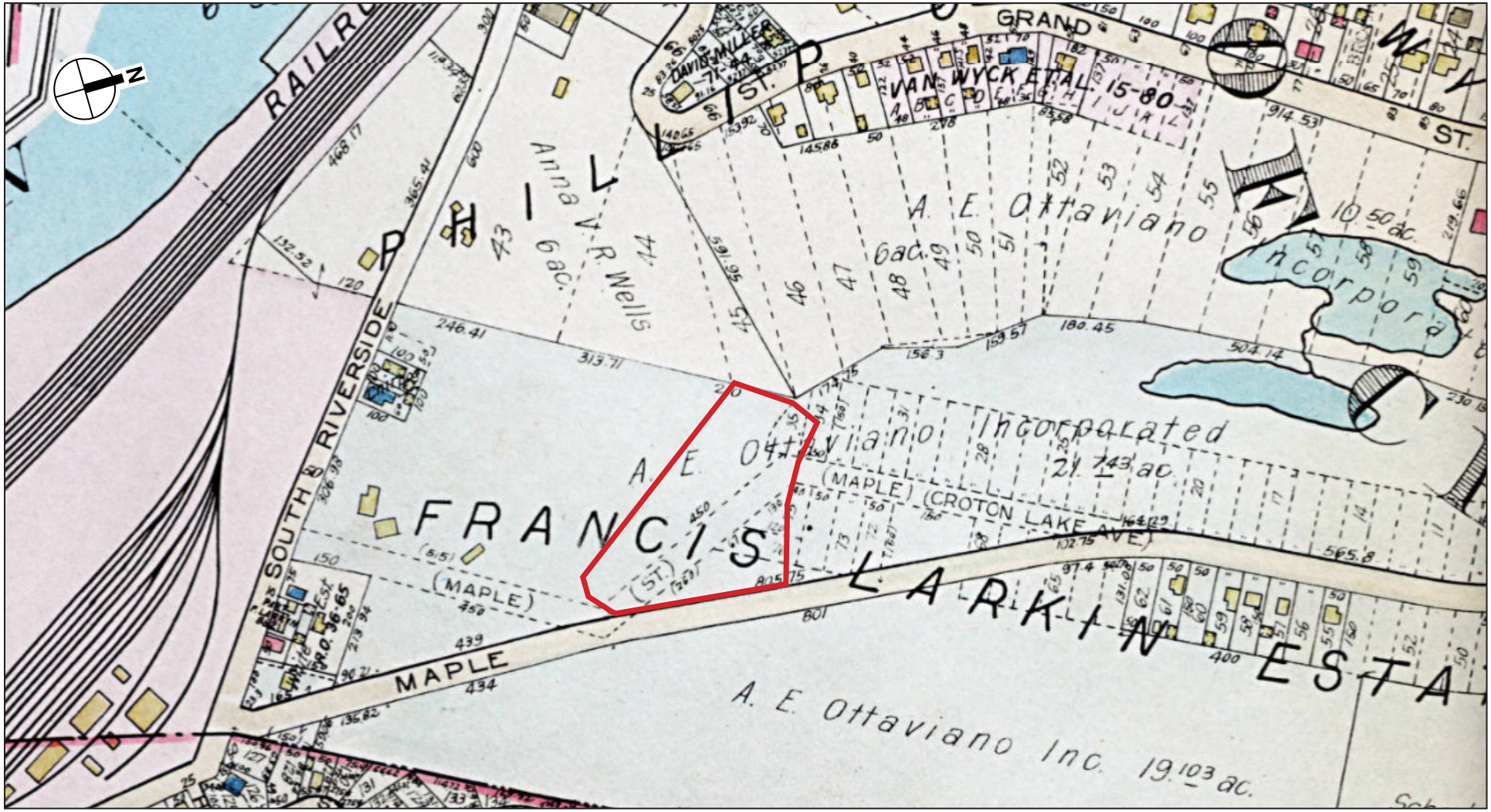
Approximate Project Location

1868 Beers Atlas

41-51 MAPLE STREET

Figure 4

4.21.21

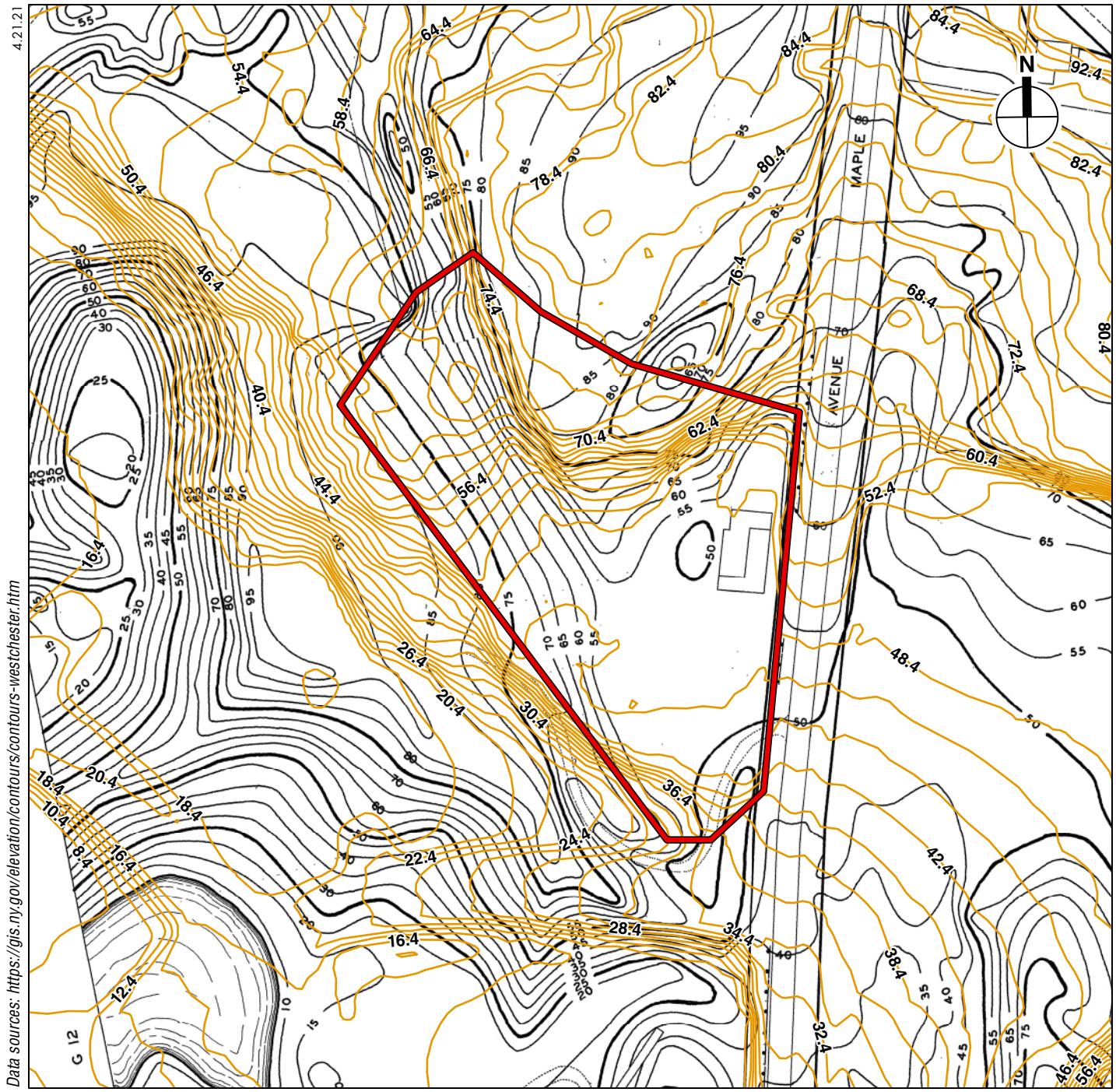


Project Location

1930 Hopkins Atlas

41-51 MAPLE STREET

Figure 5



Comparison of Historical and Modern Topography

41-51 MAPLE STREET

Figure 6

Photographs

Facing southwest toward Project Site from east side of Maple Street/CR 129 **1**

Facing west toward Project Site and existing bus shelter from east side of Maple Street/CR 129 **2**

Facing northwest toward Project Site from east side of Maple Street/CR 129 **3**

Facing east toward Maple Street from Project Site interior **4**

Facing northwest toward adjacent homes from Project Site interior **5**

Facing west toward Croton Auto Park from western boundary of Project Site **6**

Appendix C

Public Schools

Rutgers University, Center for Urban Policy Research

Residential Demographic Multipliers

—

Estimates of the Occupants of New Housing

(Residents, School-Age Children, Public School-Age Children)
by State, Housing Type, Housing Size, and Housing Price

Prepared by:

Robert W. Burchell, Ph.D.
David Listokin, Ph.D.
William Dolphin, M.A.
Center for Urban Policy Research
Edward J. Bloustein School of Planning
and Public Policy
Rutgers, The State University of New Jersey
New Brunswick, New Jersey

June 2006

DESCRIPTION, DEFINITION, AND ORGANIZATION OF RESIDENTIAL DEMOGRAPHIC MULTIPLIERS

The national, state, and District of Columbia residential demographic multipliers are derived from the 2000 U.S. Census 5-Percent Public Use Microdata Sample (PUMS). The demographic multipliers include the following data fields and organization:

1. ***Household Size (HS)*:** Total persons per housing unit.

2. ***Age distribution of the household members*** organized into the following age categories: 0–4, 5–13, 14–17, 18–24, 25–44, 45–64, 65–74, 75+.

3. ***Total school-age children (SAC)*** or number of persons in the household of school age, defined as those 5 to 17 years old. (The SAC is the same as the combined number of household members in the 5–13 and 14–17 age categories.)

4. ***Total public school-age children (PSAC),*** or the SAC who attend public schools.

5. ***The SAC and PSAC by grade group*** organized as follows: kindergarten (K)–grade 2, grades 3–6, grades 7–9, grades 10–12, and grade 9 by itself. The above data permit the analyst to tabulate the SAC and PSAC by differing school levels (e.g., K–6, 7–12, and 9–12).

The demographic fields shown above are differentiated by ***housing type, housing size, housing price, and housing tenure—***four variables that have been found by Rutgers University to be associated with statistically significant differences in the HS, SAC, and PSAC. The multipliers are calculated for ***new housing,*** here defined as units enumerated in the 2000 census and built from 1990-2000.

The housing or structure types include the following: ***single-family detached; single-family attached,*** sometimes referred to as townhouses or townhomes; ***larger (5-or-more-unit) multifamily buildings,*** such as garden apartments or stacked flats; ***smaller multifamily structures (2 to 4 units),*** such as a starter two-family home; and ***mobile homes.*** As the 2000 census, the source for the residential multipliers, does not have information on the stories in a housing structure (this was last available in the 1980 census), multiplier presentations cannot disaggregate multifamily housing into garden, mid-rise, and high-rise categories.

Housing-unit size is measured by the number of bedrooms, and data are presented for housing units ranging from ***1 to 5 bedrooms***. There is an association between housing type and number of bedrooms, and the demographic multiplier tables present the common configurations for each housing type. For instance, demographic data are shown for 1- through 3-bedroom multifamily units and not for 4- to 5-bedroom units of this type because multifamily housing tends to be built with fewer rather than more bedrooms. The opposite is the case for single-family detached homes; in this instance, data are presented for 2- to 5-bedroom units as opposed to 1-bedroom units because detached housing is typically built with more rather than fewer bedrooms.

Housing is additionally classified by tenure: ***ownership*** or ***rental***. According to the census, "A housing unit is owner-occupied if the owner or co-owner lives in the unit even if it is mortgaged or not fully paid for. . . . All occupied housing units that are not owner-occupied, whether they are rented for cash rent or occupied without payment of cash rent, are classified as renter-occupied."

There is a further differentiation of the demographic profiles by housing value or rent. The census definitions for "value" and "rent" are shown on the Definitions page; with regard to the latter, the current study indicates the "gross rent" (rent with utilities) rather than the "contract rent."

Values and gross rents reported in the 2000 census are updated to 2005 using a residential price inflation index available from the Federal Housing Finance Board. A separate price index is applied for the nation, for each of the 50 states, and for the District of Columbia.

The demographic profiles by 2005 housing values and gross rents are organized following a four-tiered classification: all ***value or rent housing,*** and then housing arrayed by ***terciles (thirds) of value or rent*** (units at the 1st–33rd percentile of value or rent; units at the 33rd through 66th percentile of value or rent; and units at the 67th–100th percentile of value or rent.)

DEFINITIONS OF DATA CONTAINED IN THE U.S. CENSUS OF POPULATION AND HOUSING PUBLIC USE MICRODATA SAMPLE (PUMS) 2000 AND OTHER MULTIPLIER TERMS

TERMS	*DEFINITION/COMMENT*
Bedrooms (BR)	The number of rooms that would be listed as bedrooms if the house, apartment, or mobile home were listed on the market for sale or rent even if these rooms are currently used for other purposes.
Housing Categories (Structure Type)	***Single-family, detached.*** This is a 1-unit structure detached from any other house; that is, with open space on all four sides. Such structures are considered detached if they have an adjoining shed or garage. ***Single- family attached.*** This is a 1-unit structure that has one or more walls extending from ground to roof separating it from adjoining structures. In row houses (sometimes called townhouses), double houses, or houses attached to nonresidential structures, each house is a separate, attached structure if the dividing or common wall goes from ground to roof. ***2-4 units.*** These are units in structures containing 2, 3, or 4 housing units. ***5+ units***. These are units in structures containing 5 or more housing units. ***Mobile home.*** Both occupied and vacant mobile homes to which no permanent rooms have been added are counted in this category. Mobile homes used only for business purposes or for extra sleeping space, and mobile homes for sale on a dealer's lot, at the factory, or in storage, are not counted in the housing inventory. In 1990, the category was "mobile home or trailer."
Household Size	The total number of persons in a ***housing unit.***
Housing Tenure (Ownership or Rental)	A ***housing unit*** is owner-occupied if the owner or co-owner lives in the unit even if it is mortgaged or not fully paid for. All occupied housing units that are not owner-occupied, whether they are rented for cash rent or occupied without payment of cash rent, are classified as renter-occupied.
Housing Unit	A ***housing unit*** may be a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy as separate living quarters).
Housing Value (Rent)	Housing value is the census respondent's estimate of how much the property would sell for if it were for sale. In the current study, the value of a rented unit in a 1- to 4-unit structure is estimated to be 100 times the monthly ***gross rent,*** and all such units are included with owner-occupied units in calculating the multipliers. The housing value and rents indicated by the 2000 census were updated to 2005 using a residential price inflation index (available from the Federal Housing Finance Board) for the nation, for each state, and for the District of Columbia. Housing value or rent is categorized into a four-tier classification: all value (or rent) housing, and then housing units arrayed by terciles (thirds) of value (or rent).
Housing Rent (Contract Rent)	Contract rent is the monthly rent agreed to or contracted for, regardless of any furnishings, utilities, fees, meals, or services that may be included.
Housing Rent (Gross Rent)	Gross rent is the ***contract rent*** plus the estimated average monthly cost of utilities (electric, gas, water and sewer) and fuels (oil, coal, kerosene, wood, and the like) if these are paid by the renter (or paid for the renter by someone else). In the current study, the monthly gross rents are indicated in the demographic table.
Insufficient Sample	This notation in a table means that fewer than 600 weighted observations were counted for a housing type/bedroom/value combination or for an entire housing type/bedroom combination.
Public School-Age Children (PSAC)	The ***school-age children*** attending public school.
Residential Demographic Multipliers	Multipliers show the population associated with different ***housing categories*** as well as housing differentiated by ***housing value***, housing size (***bedrooms***), and ***housing tenure***.
School-Age Children (SAC)	The household members of elementary and secondary school age, defined here as those 5 through 17 years of age.

NEW YORK (3--2) ALL PUBLIC SCHOOL CHILDREN: SCHOOL-AGE CHILDREN IN PUBLIC SCHOOL (PSAC)

STRUCTURE TYPE /BEDROOMS/ VALUE (2005)/TENURE	TOTAL PSAC	PUBLIC SCHOOL GRADE				
		K-2	3-6	7-9	10-12	Gr. 9 Only
5+ Units–Rent, 1 BR						
All Values	0.15	0.05	0.05	0.03	0.02	0.01
Less than $500	0.09	0.03	0.03	0.02	0.01	0.01
$500 to $1,000	0.27	0.09	0.09	0.05	0.04	0.01
More than $1,000	0.07	0.02	0.02	0.01	0.01	0.01
5+ Units–Rent, 2 BR						
All Values	0.43	0.13	0.14	0.08	0.08	0.03
Less than $750	0.67	0.19	0.26	0.11	0.12	0.04
$750 to $1,100	0.45	0.14	0.13	0.09	0.08	0.03
More than $1,100	0.16	0.05	0.05	0.04	0.03	0.01
5+ Units–Rent, 3 BR						
All Values	1.07	0.23	0.37	0.25	0.23	0.09
Less than $750	1.27	0.22	0.47	0.30	0.29	0.10
$750 to $1,250	1.30	0.31	0.44	0.31	0.23	0.11
More than $1,250	0.63	0.14	0.20	0.12	0.17	0.06
2-4 Units, 1 BR						
All Values	0.27	0.08	0.07	0.06	0.07	0.02
Less than $74,500	0.23	0.06	0.07	0.07	0.04	0.02
$74,500 to $110,000	0.28	0.09	0.09	0.04	0.06	0.02
More than $110,000	0.30	0.09	0.05	0.07	0.09	0.03
2-4 Units, 2 BR						
All Values	0.43	0.10	0.14	0.10	0.09	0.03
Less than $86,000	0.44	0.11	0.15	0.09	0.09	0.03
$86,000 to $132,000	0.48	0.10	0.18	0.11	0.09	0.03
More than $132,000	0.36	0.08	0.09	0.09	0.11	0.03
2-4 Units, 3 BR						
All Values	0.83	0.17	0.29	0.19	0.18	0.06
Less than $113,500	1.02	0.20	0.37	0.25	0.19	0.11
$113,500 to $213,500	0.86	0.18	0.32	0.16	0.19	0.04
More than $213,500	0.62	0.12	0.18	0.17	0.15	0.03
Mobile, 2 BR						
All Values	0.24	0.07	0.08	0.04	0.05	0.01
Less than $33,000	0.19	0.07	0.05	0.04	0.04	0.01
$33,000 to $54,000	0.25	0.07	0.11	0.03	0.04	0.01
More than $54,000	0.27	0.08	0.07	0.05	0.06	0.02
Mobile, 3 BR						
All Values	0.69	0.17	0.23	0.16	0.13	0.06
Less than $45,000	0.71	0.20	0.23	0.15	0.14	0.05
$45,000 to $66,000	0.68	0.15	0.26	0.16	0.11	0.07
More than $66,000	0.67	0.15	0.21	0.15	0.15	0.06
Mobile, 4 BR						
All Values	1.61	0.28	0.50	0.38	0.45	0.16
Less than $54,000		Insufficient Sample				
$54,000 to $78,000	1.56	0.31	0.46	0.29	0.49	0.13
More than $78,000		Insufficient Sample				

Appendix D

AKRF Traffic Study

Environmental, Planning, and Engineering Consultants
34 South Broadway
Suite 300
White Plains, NY 10601
tel: 914 949-7336
fax: 914 949-7559
www.akrf.com

Memorandum

To:	Village of Croton-on-Hudson Board of Trustees
From:	AKRF, Inc.
Date:	April 30, 2021
Re:	41-51 Maple Street Residential Development – Traffic Assessment Memorandum

This memorandum and associated attachments present an assessment of the key findings of AKRF's Traffic Impact Study ("TIS"), for the proposed residential development to be located at 41-51 Maple Street in the Village of Croton-on-Hudson ("the Proposed Project"). The full TIS will be submitted to the Village Board of Trustees under a separate cover.

Regan Development Corporation (the "Applicant"), contract vendee of the property located at 41-51 Maple Street (the "Project Site"), is seeking, among other actions, special use permit approval from the Village of Croton-on-Hudson (the "Village") Board of Trustees pursuant to §230-20.3.B(4) of the Village Zoning Code, to develop the currently vacant Project Site with a 33-unit multifamily residential development, the majority of which would be affordable housing (the "Proposed Project"). The Village Board of Trustees is serving as the Lead Agency for the Proposed Project's environmental review pursuant to the State Environmental Quality Review Act (SEQRA).

As outlined in the Preliminary Site Plan prepared by Prime Companies (dated March 16, 2021), the Applicant is proposing to construct an approximately 41,100 square-foot (sf) multifamily residential development consisting of 33 rental apartments within two 2-story buildings, 61 at-grade parking spaces, landscaping, and private/public open spaces.

A. PRINCIPAL CONCLUSIONS

TRAFFIC

TRAFFIC ANALYSIS

Traffic conditions were evaluated for the following four intersections during the weekday AM and PM peak hours:

1. Maple Street (NYS Route 129) and Municipal Place/Shopping Center Driveway
2. Maple Street/Hudson River Road and South Riverside Avenue (NYS Route 9A)
3. South Riverside Avenue and Municipal Place
4. Maple Street and Project Site Driveway (Build condition only)

Potential impacts of the Proposed Project were analyzed using methodologies based on the Highway Capacity Manual, 6th Edition (HCM 6) methodology (Synchro 10 software) to calculate existing and future traffic operating conditions (Level of Service ("LOS") and total delay) at each of the Study Area intersections. LOS is based on a grading scale of "A" through "F" with "A" representing optimum traffic conditions and "F" representing poor traffic conditions (LOS D or better is typically considered acceptable operating conditions). This memorandum describes traffic operations for existing conditions within the Study Area and for conditions in the future without the Proposed Project (the "No Build" analysis), and in the future with the Proposed Project (the "Build" analysis).

For the purpose of this analysis, traffic impacts are identified as: (1) any change in LOS D or better to LOS E or F; (2) any change from LOS E to LOS F; or (3) any increase of 10 percent or greater in delay for LOS F between No Build and Build conditions. The significant impact criteria are applied to the approach/lane group LOS for signalized intersections and approach/movement group LOS for unsignalized intersections.

Based on the criteria outlined above, no traffic impacts were identified for the Proposed Project. All intersection lane groups/movements would operate at LOS D or better under Existing, No Build, and Build conditions (see Tables A-1 and A-2 in **Attachment A** which summarize traffic operating condition analysis results). As noted above, LOS D or better is typically considered acceptable operating conditions.

TRAFFIC VOLUME DEVELOPMENT

2021 Existing Conditions

Manual turning movement counts (TMC) at the three existing Study Area intersections were collected during the weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods in March, 2021. To account for pre-pandemic existing baseline traffic conditions, AKRF developed and applied an adjustment factor to the March 2021 TMC data as it was collected during the ongoing pandemic. Details of the development of these adjustment factors are outlined in **Attachment A**. The 2021 Existing conditions traffic volumes are based on the adjusted TMC data.

2023 No Build Conditions

An annual background growth rate of 0.5 percent was applied to the 2021 Existing Conditions volumes. Additional trips were then added to the roadway network from another planned multifamily residential development in the study area (25 South Riverside Avenue) to develop the 2023 No Build traffic volumes.

2023 Build Conditions

Traffic volumes anticipated to be generated by the proposed project were estimated utilizing the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition (see Table A-3 in **Attachment A** for a summary of the project generated trips).

Trip distribution patterns to and from the Project Site were developed based on existing traffic patterns in the study area and then utilized to assign the project generated trips to the study area intersections. These project generated trips were then overlaid onto the No Build volumes to develop the Build traffic volumes.

Figures A-1 through A-9 in **Attachment A** depict the traffic volumes and assignments outlined above.

ACCIDENT HISTORY/SAFETY

The most recent three-year's traffic accident data for the study area intersections and roadways was obtained from NYSDOT. A total of 12 accidents were identified occurring in the study area during the January 1, 2018 through December 31, 2020 three-year period. No fatalities were identified as part of the accident data. A review of this data did not reveal any High Accident Locations (HAL – defined as where five or more accidents are reported at an intersection or along a corridor in a 12-month period). All intersections and roadway corridors within the study area experienced less than five accidents per year based on the NYSDOT data. Based on the relatively low number of accidents, no significant trends could be identified. Accident factors included following too closely ("tailgating"), disregard of traffic control devices, driver inattention, failure to yield right of way, passing or lane usage improperly,

None of the accidents were identified as involving pedestrians, however, one accident involved a collision with a bicyclist at the intersection of S. Riverside Avenue and Municipal Place in 2017

PARKING

Off-street parking facilities are present for the surrounding land uses in the study area. On-street parking is prohibited along the study area roadways.

The Proposed Project is currently proposing 61 surface parking spaces on-site, including 4 handicapped spaces. The proposed parking supply exceeds the 55 spaces required for the Proposed Project under the provisions of the site's C-2/Municipal Place Gateway Overlay zoning. It is anticipated that these 61 spaces would adequately meet the parking demand for the Proposed Project.

PEDESTRIAN AND BICYCLE CONDITIONS

As part of the Proposed Project, a new sidewalk will be constructed along the west side Maple Street from the southern edge of the site driveway to the northwest corner of the intersection of Maple Street and Municipal Place. This sidewalk will provide pedestrian access and connections to the existing bus stop on the west side of Maple Street, the existing midblock crosswalk on Maple Street (north of the Maple Street/Municipal Place intersection), and the nearby shopping center, bus stop, and sidewalk on the east side of Maple Street.

A designated signed bike lane is currently in-place on the west side of S. Riverside Avenue. No new bike facilities are planned along the study area roadways as part of the Proposed Project. However, the Applicant is considering providing bike racks and electric bike/electric vehicle charging stations on-site as part of the Proposed Project

PUBLIC TRANSPORTATION

Westchester County operates two Bee-Line bus routes within the study area; Route 10 ("Cortlandt Town Center-Croton") and Route 14 ("Peekskill-Ossining-White Plains"). Bus stops are provided on both sides of Maple Street in the vicinity of the Proposed Project.

As part of the Proposed Project, upgrades are planned for the bus stop on the west side of Maple Street.

SCHOOL TRANSPORTATION

It is anticipated that as part of the Proposed Project, a school bus stop will be added at the project site driveway to pick up and discharge students. In order to alert drivers along Maple Street of these school bus stops, it is recommended that "School Bus Stop Ahead" warning signs be considered for installation along Maple Street approaching the project site driveway. **Attachment A** includes a depiction of the potential Manual of Uniform Traffic Control Devices (MUTCD) warning sign for installation which could be coordinated with NYSDOT (sign S3-1).

SITE ACCESS AND CIRCULATION

Access to the site will be provided via a full access driveway on the west side of Maple Street providing one ingress lane and one egress lane. The newly created intersection will be an unsignalized intersection with stop-sign control on the site driveway approach.

Due to the existing layout of the nearby shopping center, tractor trailer trucks making deliveries to the nearby shopping center at times will occasionally drive out of the shopping center driveway (located north of the proposed site driveway) onto Maple Street in order to facilitate reverse maneuvers to the shopping center loading docks, occasionally blocking Maple Street. In order to alert drivers along Maple Street of the potential for these occasional blockages by trucks, it is recommended that "Truck Crossing" warning signs be considered for installation along Maple Street. **Attachment A** includes depictions of potential Manual of Uniform Traffic Control Devices (MUTCD) warning signs for installation which could be coordinated with NYSDOT (signs W8-6 and W11-10).

B. OVERALL CONCLUSIONS

No traffic impacts were identified for the Proposed Project and all intersections are projected to operate at acceptable LOS under Existing, No Build, and Build conditions. No mitigation measures are anticipated to be necessary at any of the study area intersection as a result of the Proposed Project.

No High Accident Locations were identified in the study area.

Parking in exceedance of zoning requirements will be provided on-site and is anticipated to meet the projected demand.

The proposed sidewalk along the west side of Maple Street will provide connections to other existing pedestrian elements in the area and the adjacent shopping center.

In order to alert drivers of the potential school bus stops that would occur at the project site driveway, “School Bus Stop Ahead” warning signs are recommended for placement along Maple Street approaching the driveway.

In order to address the occasional blockages of Maple Street by tractor trailer maneuvers to access the shopping center loading docks, “Truck Crossing” warning signs are recommended for placement along Maple Street.

ATTACHMENT A

- Traffic Volume and Assignment Figures (Figures A-1 through A-9)
- Level of Service (LOS) Tables (Tables A-1 and A-2)
- Trip Generation Table (Table A-3)
- Summary of Development of Pre-Pandemic 2021 Existing Traffic Volumes
- Depictions of Recommended MUTCD Signage

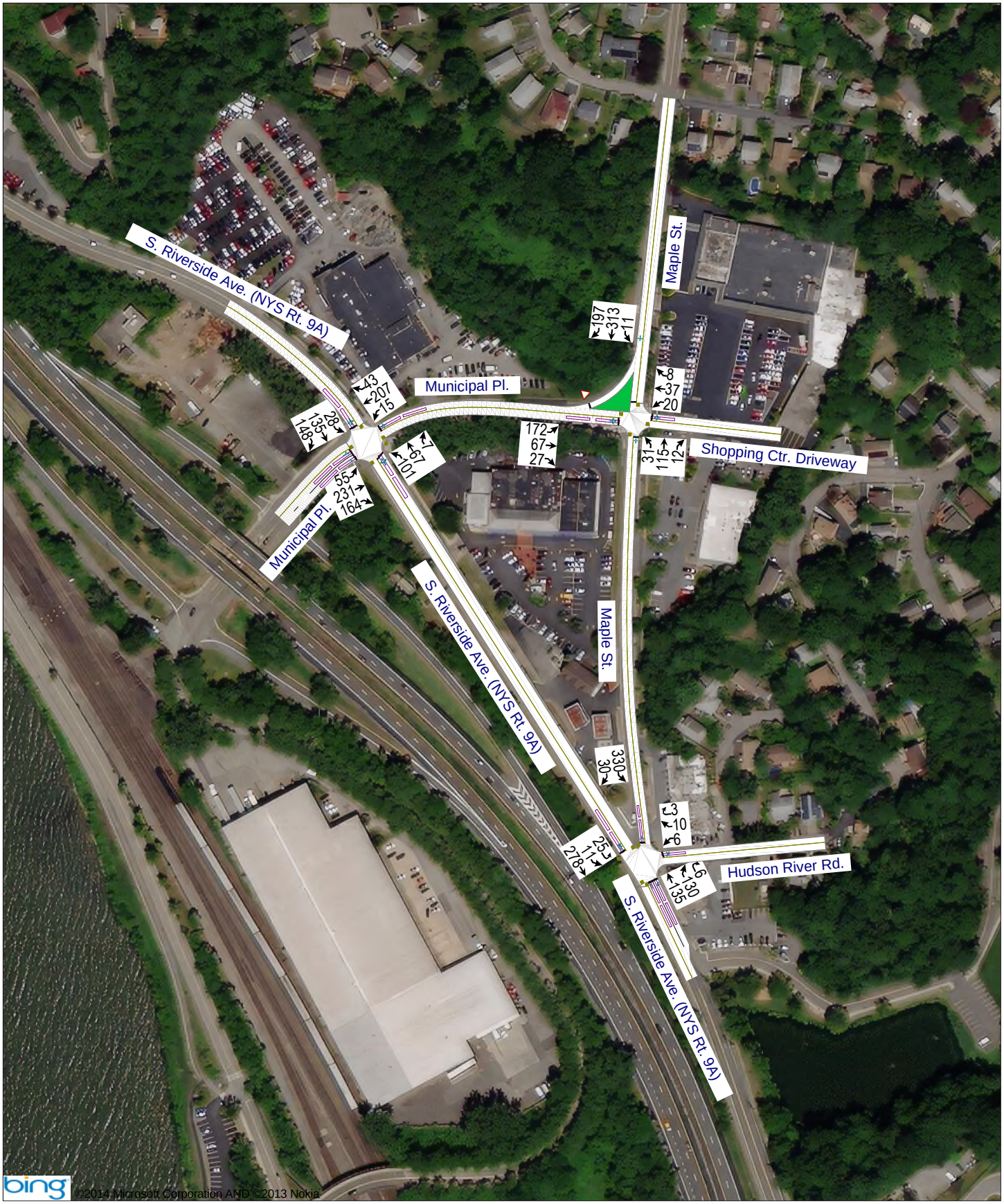


Figure A-1
Existing AM Volumes

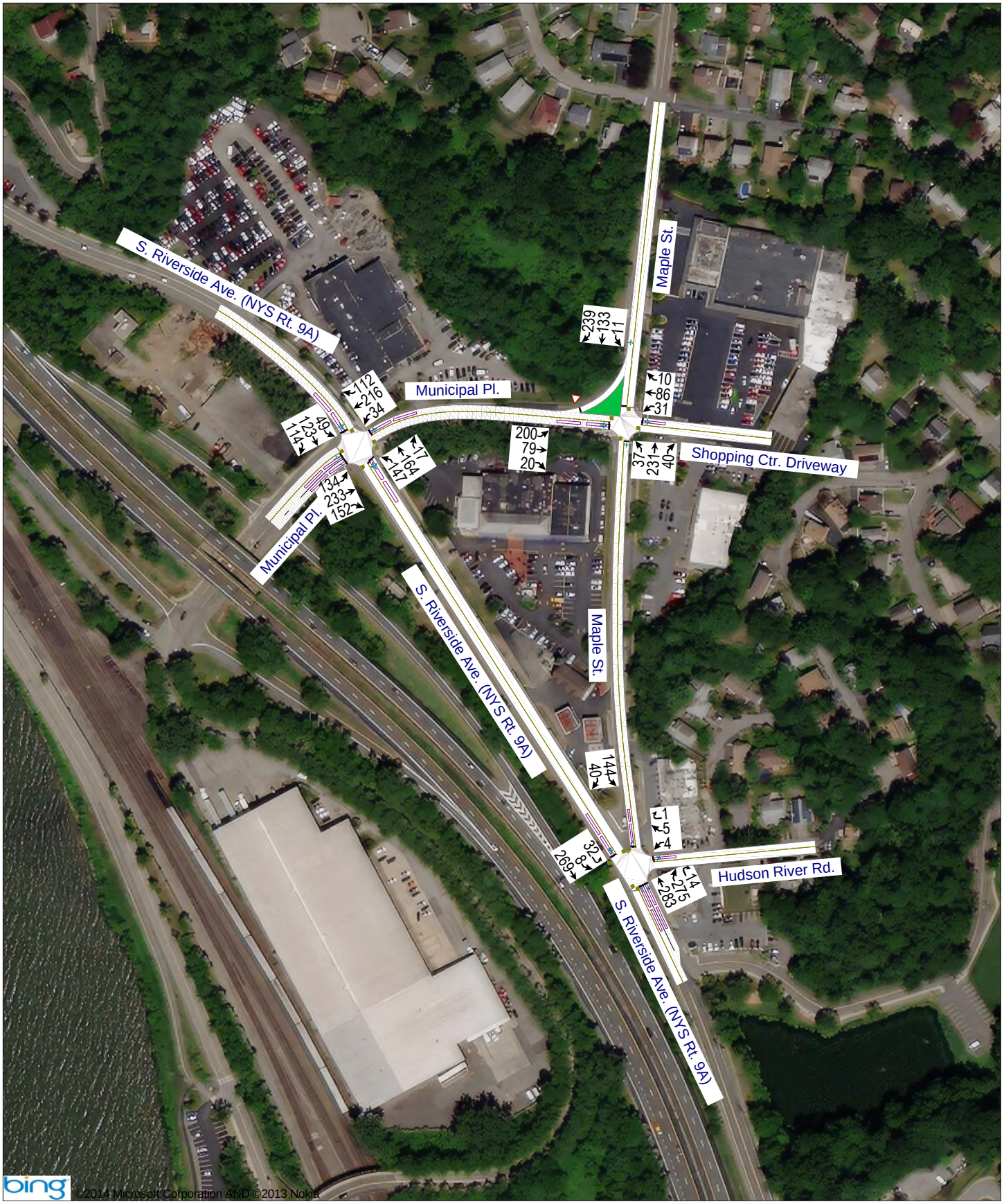


Figure A-2
Existing PM Volumes

Figure A-3
No Build AM Volumes

Figure A-4
No Build PM Volumes

5 Percent 'In' Trips

5 Percent 'Out' Trips

Figure A-5
Trip Distribution Percentages

Figure A-6
Project Generated AM Volumes

Figure A-7
Project Generated PM Volumes

Figure A-8
2023 Build AM Volumes

Figure A-9
2023 Build PM Volumes

Table A-1

2021 Existing and 2023 No Build Conditions Level of Service Analysis

	Intersection	Weekday AM								Weekday PM							
		2021 Existing				2023 No Build				2021 Existing				2023 No Build			
		Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
	Signalized Intersections																
1	Maple Street and Municipal Place/Shopping Center Driveway																
	EB (Municipal Pl.)	LTR	0.71	33.6	C	LTR	0.72	33.9	C	LTR	0.74	35.4	D	LTR	0.74	35.7	D
	WB (Shopping Ctr. Drv.)	LTR	0.16	18.4	B	LTR	0.15	18.3	B	LTR	0.28	20.9	C	LTR	0.28	20.9	C
	NB (Maple St.)	LTR	0.22	9.9	A	LTR	0.23	10.1	B	LTR	0.40	12.3	B	LTR	0.40	12.3	B
	SB (Maple St.)	LTR	0.60	14.0	B	LTR	0.60	14.3	B	LTR	0.44	8.8	A	LTR	0.45	8.9	A
		Intersection		18.9	B	Intersection		19.2	B	Intersection		18.1	B	Intersection		18.2	B
2	Maple Street/Hudson River Road and S. Riverside Avenue (NYS Route 9A)																
	WB (Hudson River Rd.)	LR	0.22	4.1	A	LR	0.22	4.1	A	LR	0.09	1.0	A	LR	0.09	1.0	A
	SWB (Maple St.)	LR	0.63	23.9	C	LR	0.64	24.1	C	LR	0.29	15.0	B	LR	0.29	15.0	B
	NB (Rt. 9A)	T	0.29	23.6	C	T	0.29	23.6	C	T	0.54	25.6	C	T	0.55	25.8	C
		R	0.13	1.6	A	R	0.13	1.6	A	R	0.24	1.0	A	R	0.24	1.1	A
	SB (Rt. 9A)	LT	0.58	29.2	C	LT	0.60	29.6	C	LT	0.57	26.6	C	LT	0.58	26.9	C
		Intersection		21.6	C	Intersection		21.8	C	Intersection		17.0	B	Intersection		17.2	B
3	S. Riverside Avenue (NYS Route 9A) and Municipal Place																
	EB (Municipal Pl.)	LT	0.59	21.5	C	LT	0.60	21.9	C	LT	0.80	33.5	C	LT	0.81	34.3	C
		R	0.30	4.6	A	R	0.30	4.6	A	R	0.24	3.8	A	R	0.24	3.8	A
	WB (Municipal Pl.)	LTR	0.62	22.1	C	LTR	0.62	22.3	C	LTR	0.64	23.5	C	LTR	0.65	23.5	C
	NB (Rt. 9A)	LTR	0.27	10.6	B	LTR	0.27	10.7	B	LTR	0.55	18.9	B	LTR	0.56	19.6	B
	SB (Rt. 9A)	LTR	0.44	12.0	B	LTR	0.46	12.2	B	LTR	0.41	16.0	B	LTR	0.41	16.4	B
		Intersection		15.5	B	Intersection		15.6	B	Intersection		21.5	C	Intersection		21.9	C

Notes:

LOS = Level of Service, v/c = volume to capacity

L = Left Turn, T= Through, R = Right Turn; EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, SW = Southwestbound

Table A-2

2023 No Build and Build Conditions Analysis

	Intersection	Weekday AM								Weekday PM							
		2023 No Build				2023 Build				2023 No Build				2023 Build			
		Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
	Signalized Intersections																
1	Maple Street and Municipal Place/Shopping Center Driveway																
	EB (Municipal Pl.)	LTR	0.72	33.9	C	LTR	0.74	35.3	D	LTR	0.74	35.7	D	LTR	0.77	37.9	D
	WB (Shopping Ctr. Drv.)	LTR	0.15	18.3	B	LTR	0.16	18.4	B	LTR	0.28	20.9	C	LTR	0.28	21.1	C
	NB (Maple St.)	LTR	0.23	10.1	B	LTR	0.23	9.8	A	LTR	0.40	12.3	B	LTR	0.40	12.1	B
	SB (Maple St.)	LTR	0.60	14.3	B	LTR	0.61	14.2	A	LTR	0.45	8.9	A	LTR	0.45	8.8	A
		Intersection		19.2	B	Intersection		19.5	B	Intersection		18.2	B	Intersection		18.7	B
2	Maple Street/Hudson River Road and S. Riverside Avenue (NYS Route 9A)																
	WB (Hudson River Rd.)	LR	0.22	4.1	A	LR	0.22	4.1	C	LR	0.09	1.0	A	LR	0.09	1.0	A
	SWB (Maple St.)	LR	0.64	24.1	C	LR	0.64	24.2	B	LR	0.29	15.0	B	LR	0.29	15.0	B
	NB (Rt. 9A)	T	0.29	23.6	C	T	0.29	23.6	D	T	0.55	25.8	C	T	0.55	25.8	C
		R	0.13	1.6	A	R	0.13	1.6	A	R	0.24	1.1	A	R	0.25	1.1	A
	SB (Rt. 9A)	LT	0.60	29.6	C	LT	0.60	29.6	A	LT	0.58	26.9	C	LT	0.58	26.9	C
		Intersection		21.8	C	Intersection		21.8	C	Intersection		17.2	B	Intersection		17.1	B
3	S. Riverside Avenue (NYS Route 9A) and Municipal Place																
	EB (Municipal Pl.)	LT	0.60	21.9	C	LT	0.60	21.8	C	LT	0.81	34.3	C	LT	0.92	49.7	D
		R	0.30	4.6	A	R	0.30	4.4	A	R	0.24	3.8	A	R	0.25	4.1	A
	WB (Municipal Pl.)	LTR	0.62	22.3	C	LTR	0.63	22.2	C	LTR	0.65	23.5	C	LTR	0.71	25.8	C
	NB (Rt. 9A)	LTR	0.27	10.7	B	LTR	0.28	11.1	B	LTR	0.56	19.6	B	LTR	0.54	16.7	B
	SB (Rt. 9A)	LTR	0.46	12.2	B	LTR	0.46	12.6	B	LTR	0.41	16.4	B	LTR	0.41	14.2	B
		Intersection		15.6	B	Intersection		15.8	B	Intersection		21.9	C	Intersection		25.1	C
	Unsignalized Intersections																
4	Maple Street and Project Site Driveway																
	EB	Does Not Exist in No Build				LR	0.04	14.1	B	Does Not Exist in No Build				LR	0.02	12.9	B
	NB					L	0.01	8.6	A					L	0.01	8.2	A

Notes:

LOS = Level of Service, v/c = volume to capacity

L = Left Turn, T= Through, R = Right Turn; EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound, SW = Southwestbound

Table A-3
Build Development Trip Generation

ITE Land Use		# of Units	Weekday AM Peak Hour			Weekday PM Peak Hour		
#	Description		In	Out	Total	In	Out	Total
220	Multifamily Housing (Low-Rise)	33	6	14	20	13	10	23

Source:
Based on Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition* .

SUMMARY OF DEVELOPMENT OF PRE-PANDEMIC 2021 EXISTING TRAFFIC VOLUMES

To account for pre-pandemic existing baseline traffic conditions, AKRF developed and applied an adjustment factor to apply the March 2021 Turning Movement Count ("TMC") data as it was collected during the ongoing pandemic.

AKRF utilized data from the Streetlight Insight platform[1] to obtain historical TMC data at the study area intersections

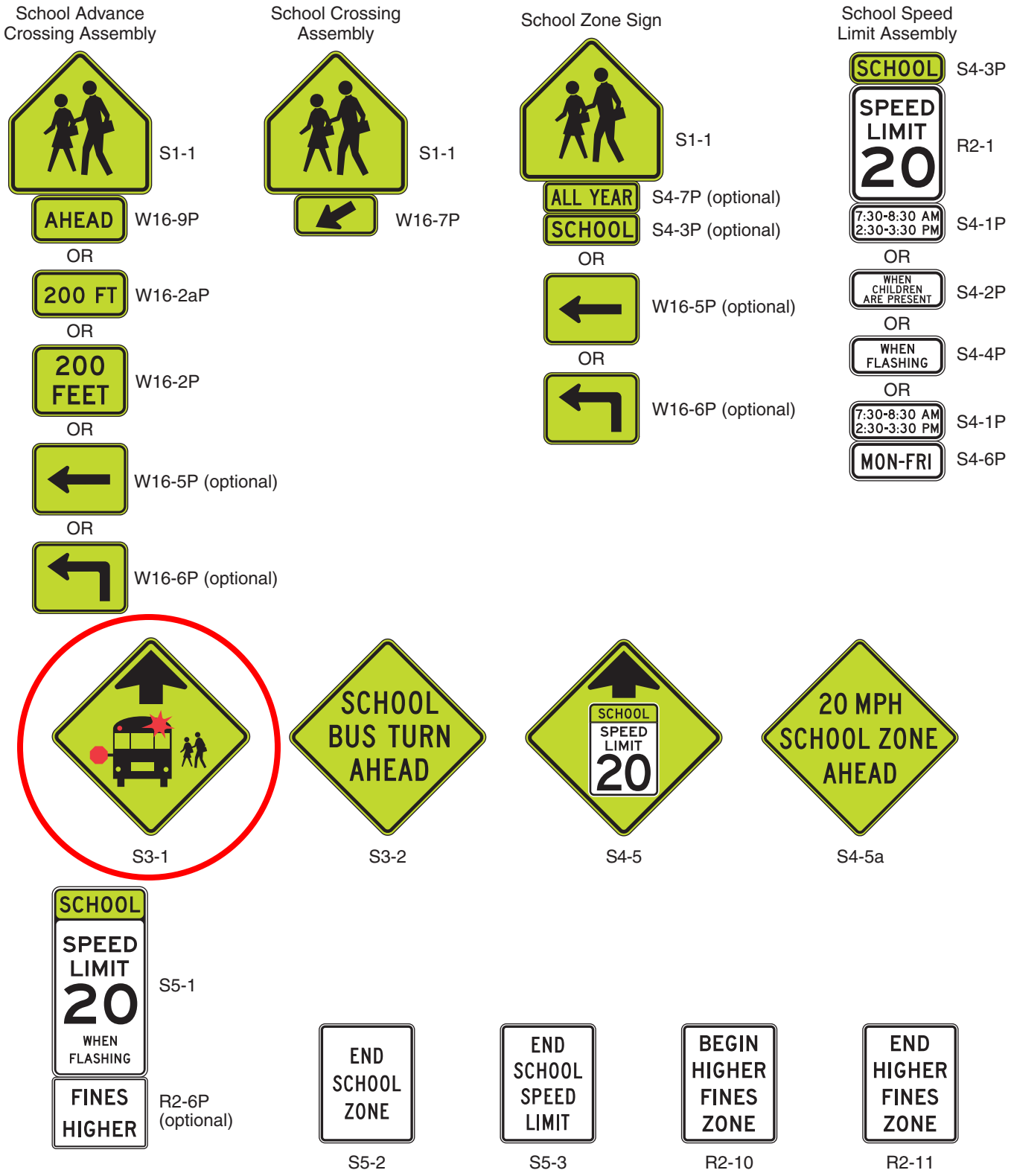
Average weekday TMC data from Streetlight from the 4-month period of March through June, 2019 was obtained from the Streetlight platform. This period was selected as it is the most recent pre-pandemic 4-month period which (1) schools were in session (2) were not summer months and (3) did not cover the fall/winter periods which contain several holidays and inclement weather.

The 2019 Streetlight TMC data was then grown by 0.5 percent per year to 2021 levels. These grown volumes were then compared against AKRF's 2021 field collected TMCs.

The more conservative values between the grown Streetlight TMCs and the AKRF TMCs for each intersection movement were then selected for use in the traffic study area network and the network volumes were then balanced to establish the 2021 pre-pandemic Existing Conditions traffic volumes.

[1] The StreetLight Data InSight platform is an on-demand web platform for transportation, which utilizes a system of location-based services/mobile phone and navigation device data to develop time-based location data points. StreetLight Data has seen an increase in use among transportation consultants and agencies for traffic data in response to the pandemic.

Figure 7B-1. School Area Signs



05 The Overhead Pedestrian Crossing (R1-9 or R1-9a) sign (see Section 2B.12 and Figure 2B-2) may be modified to replace the standard pedestrian symbol with the standard schoolchildren symbol and may be used at unsignalized school crossings. The STATE LAW legend on the R1-9 series signs may be omitted.

06 A 12-inch reduced size in-street School (S1-1) sign (see Figure 7B-6) may be used at an unsignalized school crossing instead of the In-Street Pedestrian Crossing (R1-6 or R1-6a) or the In-Street Schoolchildren Crossing (R1-6b or R1-6c) sign. A 12 x 6-inch reduced size diagonal downward pointing arrow (W16-7P) plaque may be mounted below the reduced size in-street School (S1-1) sign.

Standard:

07 **If an In-Street Pedestrian Crossing sign, an In-Street Schoolchildren Crossing sign, or a reduced size in-street School (S1-1) sign is placed in the roadway, the sign support shall comply with the mounting height and special mounting support requirements for In-Street Pedestrian Crossing (R1-6 or R1-6a) signs (see Section 2B.12).**

08 **The In-Street Pedestrian Crossing sign, the In-Street Schoolchildren Crossing sign, the Overhead Pedestrian Crossing sign, and the reduced size in-street School (S1-1) sign shall not be used at signalized locations.**

Section 7B.13 School Bus Stop Ahead Sign (S3-1)

Guidance:

01 *The School Bus Stop Ahead (S3-1) sign (see Figure 7B-1) should be installed in advance of locations where a school bus, when stopped to pick up or discharge passengers, is not visible to road users for an adequate distance and where there is no opportunity to relocate the school bus stop to provide adequate sight distance.*

Section 7B.14 SCHOOL BUS TURN AHEAD Sign (S3-2)

Option:

01 The SCHOOL BUS TURN AHEAD (S3-2) sign (see Figure 7B-1) may be installed in advance of locations where a school bus turns around on a roadway at a location not visible to approaching road users for a distance as determined by the "0" column under Condition B of Table 2C-4, and where there is no opportunity to relocate the school bus turn around to provide the distance provided in Table 2C-4.

Section 7B.15 School Speed Limit Assembly (S4-1P, S4-2P, S4-3P, S4-4P, S4-6P, S5-1) and END SCHOOL SPEED LIMIT Sign (S5-3)

Standard:

01 **A School Speed Limit assembly (see Figure 7B-1) or a School Speed Limit (S5-1) sign (see Figure 7B-1) shall be used to indicate the speed limit where a reduced school speed limit zone has been established based upon an engineering study or where a reduced school speed limit is specified for such areas by statute. The School Speed Limit assembly or School Speed Limit sign shall be placed at or as near as practical to the point where the reduced school speed limit zone begins (see Figures 7B-3 and 7B-5).**

02 **If a reduced school speed limit zone has been established, a School (S1-1) sign shall be installed in advance (see Table 2C-4 for advance placement guidelines) of the first School Speed Limit sign assembly or S5-1 sign that is encountered in each direction as traffic approaches the reduced school speed limit zone (see Figures 7B-3 and 7B-5).**

03 **Where increased fines are imposed for traffic violations within a reduced school speed limit zone, a FINES HIGHER (R2-6P), FINES DOUBLE (R2-6aP), or $XX FINE (R2-6bP) plaque (see Figure 2B-3) shall be installed as a supplement to the reduced school speed limit sign to notify road users.**

04 **Except as provided in Paragraph 5, the downstream end of an authorized and posted reduced school speed limit zone shall be identified with an END SCHOOL SPEED LIMIT (S5-3) sign (see Figures 7B-1 and 7B-5).**

Option:

05 If a reduced school speed limit zone ends at the same point as a higher fines zone, an END SCHOOL ZONE (S5-2) sign may be used instead of a combination of an END HIGHER FINES ZONE (R2-11) sign and an END SCHOOL SPEED LIMIT (S5-3) sign.

06 A standard Speed Limit sign showing the speed limit for the section of highway that is downstream from the authorized and posted reduced school speed limit zone may be mounted on the same post above the END SCHOOL SPEED LIMIT (S5-3) sign or the END SCHOOL ZONE (S5-2) sign.

Guidance:

07 *The beginning point of a reduced school speed limit zone should be at least 200 feet in advance of the school grounds, a school crossing, or other school related activities; however, this 200-foot distance should be increased if the reduced school speed limit is 30 mph or higher.*

02 The Circular Intersection (W2-6) symbol sign (see Figure 2C-9) may be installed in advance of a circular intersection (see Figures 2B-21 through 2B-23).

Guidance:

03 *If an approach to a roundabout has a statutory or posted speed limit of 40 mph or higher, the Circular Intersection (W2-6) symbol sign should be installed in advance of the circular intersection.*

Option:

04 An educational plaque (see Figure 2C-9) with a legend such as ROUNDABOUT (W16-17P) or TRAFFIC CIRCLE (W16-12P) may be mounted below a Circular Intersection symbol sign.

05 The relative importance of the intersecting roadways may be shown by different widths of lines in the symbol.

06 An advance street name plaque (see Section 2C.58) may be installed above or below an Intersection Warning sign.

Guidance:

07 *The Intersection Warning sign should illustrate and depict the general configuration of the intersecting roadway, such as cross road, side road, T-intersection, or Y-intersection.*

08 *Intersection Warning signs, other than the Circular Intersection (W2-6) symbol sign and the T-intersection (W2-4) symbol sign should not be used on approaches controlled by STOP signs, YIELD signs, or signals.*

09 *If an Intersection Warning sign is used where the side roads are not opposite of each other, the Offset Side Roads (W2-7) symbol sign (see Figure 2C-9) should be used instead of the Cross Road symbol sign.*

10 *If an Intersection Warning sign is used where two closely-spaced side roads are on the same side of the highway, the Double Side Roads (W2-8) symbol sign (see Figure 2C-9) should be used instead of the Side Road symbol sign.*

11 *No more than two side road symbols should be displayed on the same side of the highway on a W2-7 or W2-8 symbol sign, and no more than three side road symbols should be displayed on a W2-7 or W2-8 symbol sign.*

Support:

12 Figure 2A-4 shows the typical placement of an Intersection Warning sign.

Section 2C.47 Two-Direction Large Arrow Sign (W1-7)

Standard:

01 **The Two-Direction Large Arrow (W1-7) sign (see Figure 2C-9) shall be a horizontal rectangle.**

02 **If used, it shall be installed on the far side of a T-intersection in line with, and at approximately a right angle to, traffic approaching from the stem of the T-intersection.**

03 **The Two-Direction Large Arrow sign shall not be used where there is no change in the direction of travel such as at the beginnings and ends of medians or at center piers.**

04 **The Two-Direction Large Arrow sign directing traffic to the left and right shall not be used in the central island of a roundabout.**

Guidance:

05 *The Two-Direction Large Arrow sign should be visible for a sufficient distance to provide the road user with adequate time to react to the intersection configuration.*

Section 2C.48 Traffic Signal Signs (W25-1, W25-2)

Standard:

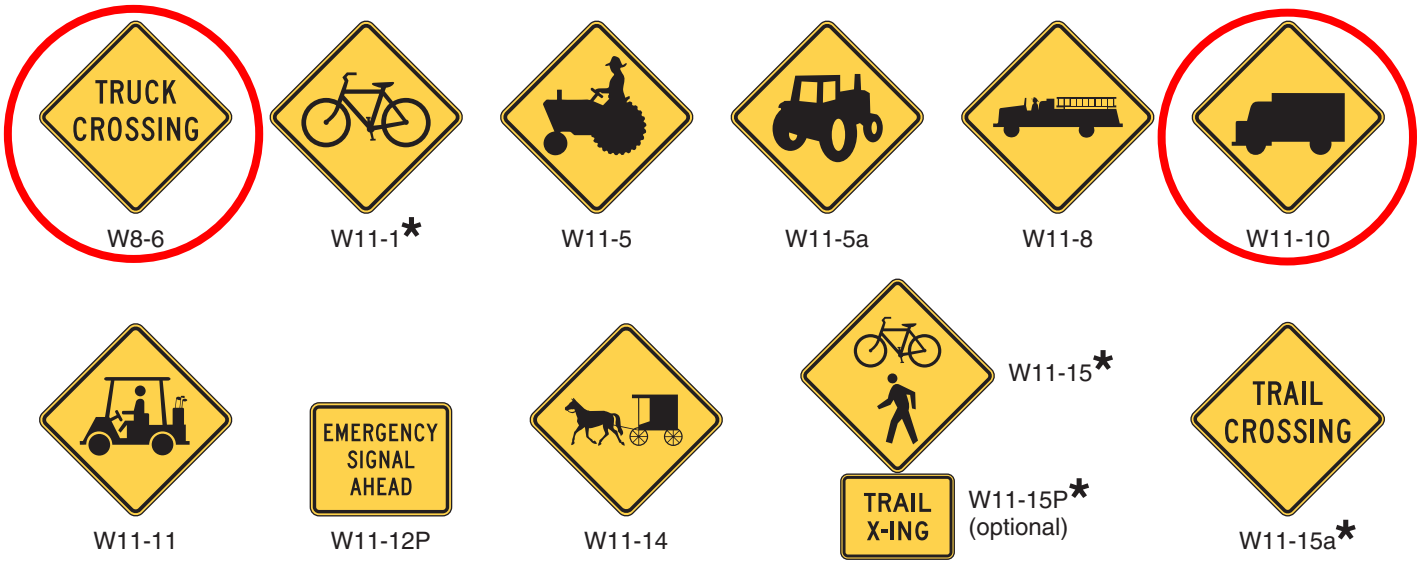
01 **At locations where either a W25-1 or a W25-2 sign is required based on the provisions in Section 4D.05, the W25-1 or W25-2 sign (see Figure 2C-9) shall be installed near the left-most signal head. The W25-1 and W25-2 signs shall be vertical rectangles.**

Section 2C.49 Vehicular Traffic Warning Signs (W8-6, W11-1, W11-5, W11-5a, W11-8, W11-10, W11-11, W11-12P, W11-14, W11-15, and W11-15a)

Option:

01 Vehicular Traffic Warning (W8-6, W11-1, W11-5, W11-5a, W11-8, W11-10, W11-11, W11-12P, W11-14, W11-15, and W11-15a) signs (see Figure 2C-10) may be used to alert road users to locations where unexpected entries into the roadway by trucks, bicyclists, farm vehicles, emergency vehicles, golf carts, horse-drawn vehicles, or other vehicles might occur. The TRUCK CROSSING (W8-6) word message sign may be used as an alternate to the Truck Crossing (W11-10) symbol sign.

Figure 2C-10. Vehicular Traffic Warning Signs and Plaques



* A fluorescent yellow-green background color may be used for this sign or plaque.

Support:

02 These locations might be relatively confined or might occur randomly over a segment of roadway.

Guidance:

03 *Vehicular Traffic Warning signs should be used only at locations where the road user's sight distance is restricted, or the condition, activity, or entering traffic would be unexpected.*

04 *If the condition or activity is seasonal or temporary, the Vehicular Traffic Warning sign should be removed or covered when the condition or activity does not exist.*

Option:

05 The combined Bicycle/Pedestrian (W11-15) sign may be used where both bicyclists and pedestrians might be crossing the roadway, such as at an intersection with a shared-use path. A TRAIL X-ING (W11-15P) supplemental plaque (see Figure 2C-10) may be mounted below the W11-15 sign. The TRAIL CROSSING (W11-15a) sign may be used to warn of shared-use path crossings where pedestrians, bicyclists, and other user groups might be crossing the roadway.

06 The W11-1, W11-15, and W11-15a signs and their related supplemental plaques may have a fluorescent yellow-green background with a black legend and border.

07 Supplemental plaques (see Section 2C.53) with legends such as AHEAD, XX FEET, NEXT XX MILES, or SHARE THE ROAD may be mounted below Vehicular Traffic Warning signs to provide advance notice to road users of unexpected entries.

Guidance:

08 *If used in advance of a pedestrian and bicycle crossing, a W11-15 or W11-15a sign should be supplemented with an AHEAD or XX FEET plaque to inform road users that they are approaching a point where crossing activity might occur.*

Standard:

09 **If a post-mounted W11-1, W11-11, W11-15, or W11-15a sign is placed at the location of the crossing point where golf carts, pedestrians, bicyclists, or other shared-use path users might be crossing the roadway, a diagonal downward pointing arrow (W16-7P) plaque (see Figure 2C-12) shall be mounted below the sign. If the W11-1, W11-11, W11-15, or W11-15a sign is mounted overhead, the W16-7P supplemental plaque shall not be used.**

Option:

10 The crossing location identified by a W11-1, W11-11, W11-15, or W11-15a sign may be defined with crosswalk markings (see Section 3B.18).