Insite Northeast Engineering & Land Surveying, P.C.

Civil Engineering • Site Design • Land Development • Utilities • Stormwater • Land Surveying

SECOND AVENUE APARTMENTS

NARRATIVE DESCRIPTION REPORT

JANUARY 2021

Project Info:
Second Avenue and Roosevelt Avenue
City of Troy and Town of Schaghticoke
Rensselaer County, New York

Prepared for:
Kevin Vandenburgh
430 9th Ave
Troy, NY 12182

Prepared by:
Insite Northeast
2301 Western Avenue
Guilderland, NY 12084

Table of Contents

Section I: Executive Summary & Project Description

1. Executive Summary

The Project Applicant proposes to construct three (3) 4-story multi-family apartment buildings on Second Avenue in the City of Troy (City), NY. The 11-acre property is situated next to the Hudson River and includes two parcels, the larger of which is in the City with the smaller portion in the Town of Schaghticoke. As part of the Project, the Applicant proposes rezoning the City parcel to be within the Planned Development District Zone as well as applying for several Variances to accommodate the Project as further outlined herein.

Each apartment building will include a mix of one and two-bedroom apartments with above and below-ground parking. Project impacts are minimal, and results in reduced impacts vs. an alternative single-family residential development allowed under existing zoning.

The Project comports with the *Realize Troy 2018 Comprehensive Plan* and includes notable improvements to the County Sewer System, and provides public access to the Hudson River, a multi-use trail and sidewalks along Second Avenue. Due to the private maintenance of the infrastructure, the Project will generate additional tax revenue without greatly increasing the burden on the City or school district. The Project is intended to provide new rental housing opportunities in the City along the Hudson River waterfront. The Project has been designed to appeal to the community by preserving open-space while achieving density demands required to complete the Project.

2. Legal Authorization

It should be noted that the Applicant previously retained MJ Engineering and Land Surveying, P.C. (MJ) to provide engineering support for the Project discussed herein. Pursuant to conversations with the Applicant, Insite Northeast Engineering & Land Surveying, P.C. (Insite) has express authorization to reference materials developed by MJ. Insite acknowledges these items as being developed by MJ and makes no attempt to copy or alter the Work. The exhibits provided and discussed herein were supplied by the Applicant and were previously submitted to the City. As such, they are considered public record. Further, Insite will replace the drawings as the project development proceeds.

3. Project Description

The proposed Project consists of three (3) 4-story apartment buildings with a total of 220-240 residential units on Second Avenue (Dickson Avenue) adjacent to the Hudson River and across from the intersection of Roosevelt Avenue. The Project is situated on an 11.0± acre property primarily located in the City of Troy, with a portion of the property located in the Town of Schaghticoke. The Project proposes development primarily within the City, with the land in Schaghticoke used solely for stormwater infrastructure. Underground parking will be provided in each of the buildings.

Each apartment building will include a mix of one and two-bedroom apartments. It is anticipated that the distribution of the apartments will be generally equal and include:

- 110-120 one-bedroom apartments
- 110-120 two-bedroom apartments

The one-bedroom apartments are projected to be generally around 800 square feet (SF), while the two-bedroom apartments will be between 1,000 to 1,200 SF.

The Project will include two (2) driveway entrances to Second Avenue, each of which shall be provided with a Stop Sign from the Project site. The main entrance will be located directly across from Roosevelt Avenue, with a secondary entrance located along Second Avenue to the south, to serve as a second means of ingress/egress and accommodate emergency site access. The Project site will also accommodate several pedestrian walkways throughout the site, between buildings and connecting to the Multi-Use Trail that will be constructed as part of this Project.

Several wooded areas throughout the Project site will be preserved during the development to maintain a visual buffer, reduce disturbance and maximize greenspace. Several tree plantings will be provided between Second Avenue and the parking areas, as well as throughout the Project site. Additional landscaping plantings will be located throughout the site to increase the curb-appeal and aesthetics of the apartment facility.

Two (2) options were developed for the proposed Project by MJ, which include the Apartment Buildings in slightly different locations. Concept Plan #1, which shows a parking area adjacent to the Hudson River is the preferred Option. Refer to Figures 1 and 2 for the Concept Plan Options.

CONCEPT PLAN DEVELOPED BY MJ ENGINEERING AND LAND SURVEYING, P.C. INCLUDED WITHIN THIS REPORT WITH THE APPLICANT'S AUTHORIZATION AS A REFERENCE ONLY.

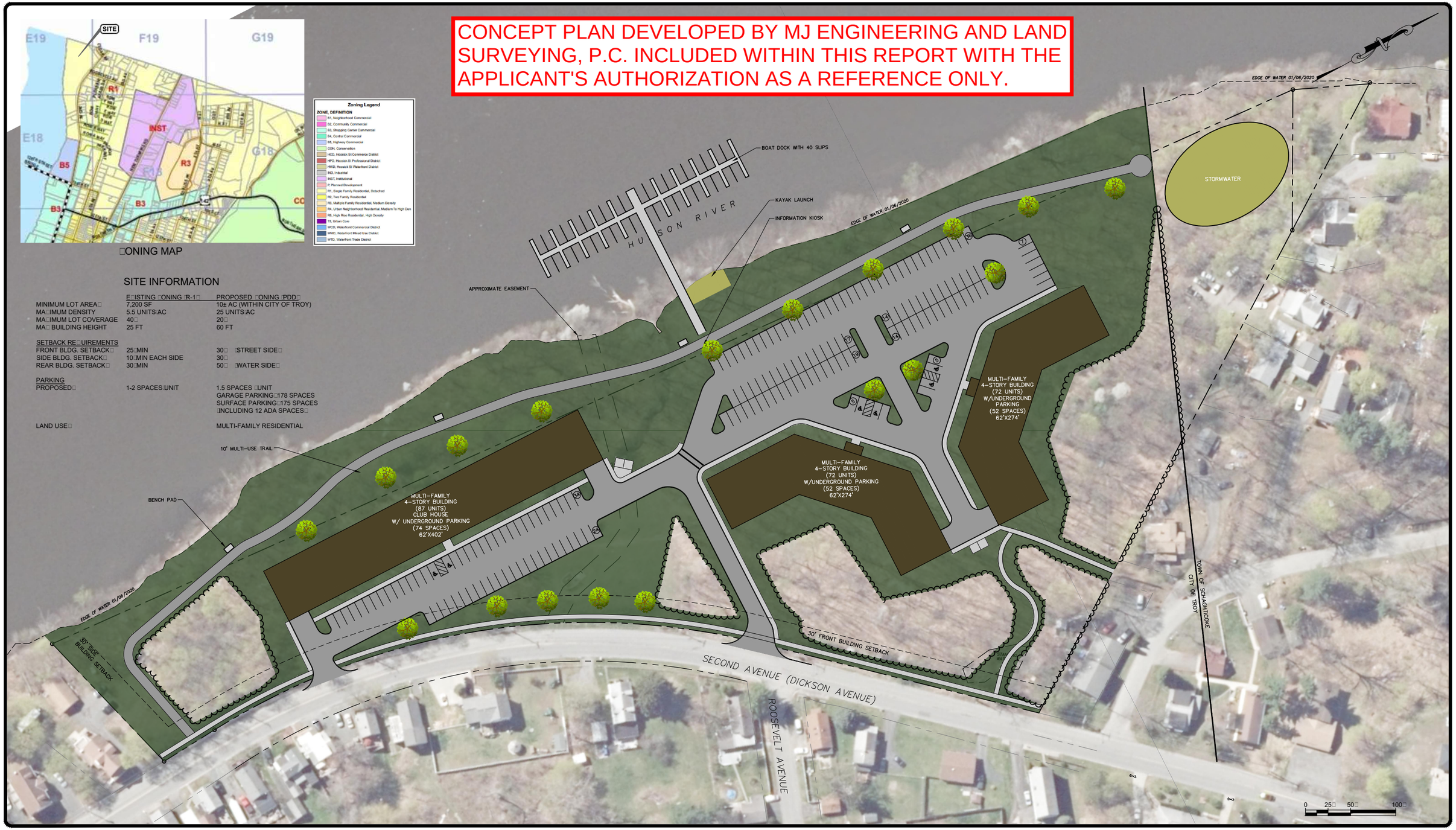
ZONING MAP

Zoning Legend

ZONE, DEFINITION
- R1, Neighborhood Commercial
- R2, Community Commercial
- B3, Shopping Center Commercial
- B4, Central Commercial
- B5, Highway Commercial
- CON, Conservation
- HCD, Hoosick St Commerce District
- HPO, Hoosick St Professional District
- HWD, Hoosick St Waterfront District
- IND, Industrial
- INST, Institutional
- P, Planned Development
- R1, Single Family Residential, Detached
- R2, Two Family Residential
- R3, Multiple Family Residential, Medium Density
- R4, Urban Neighborhood Residential, Medium To High Den
- R5, High Rise Residential, High Density
- TS, Urban Core
- WCD, Waterfront Commercial District
- WMD, Waterfront Mixed Use District
- WTD, Waterfront Trade District

SITE INFORMATION

	EXISTING ZONING R-1	PROPOSED ZONING PDD
MINIMUM LOT AREA	7,200 SF	10± AC (WITHIN CITY OF TROY)
MAXIMUM DENSITY	5.5 UNITS/AC	25 UNITS/AC
MAXIMUM LOT COVERAGE	40%	20%
MAX. BUILDING HEIGHT	25 FT	60 FT
SETBACK REQUIREMENTS		
FRONT BLDG. SETBACK	25' MIN	30' STREET SIDE
SIDE BLDG. SETBACK	10' MIN EACH SIDE	30'
REAR BLDG. SETBACK	30' MIN	50' WATER SIDE
PARKING		
PROPOSED	1-2 SPACES/UNIT	1.5 SPACES/UNIT GARAGE PARKING: 178 SPACES SURFACE PARKING: 175 SPACES INCLUDING 12 ADA SPACES
LAND USE		MULTI-FAMILY RESIDENTIAL



THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS "A" MISDEMEANOR.

SUBMITTAL REVISIONS

No.	DATE	DESCRIPTION	BY	REVIEWED BY	DATE

PROJ. MANAGER	JWE
CHIEF DESIGNER	JWE
DESIGNED BY	JWE
DRAWN BY	JWE
CHECKED BY	-

SEAL

DRAFT

Engineering and Land Surveying, P.C.
1533 Crescent Road - Clifton Park, NY 12065

TROY SECOND AVE

CONCEPT PLAN #1

KEVIN VANDENBURGH

CITY OF TROY AND TOWN OF SCHAGHTICOKE NEW YORK

SCALE: 1" = 50'
CONTRACT No.: -
MJ PROJ. No.: 972.44
DATE: AUGUST 2020

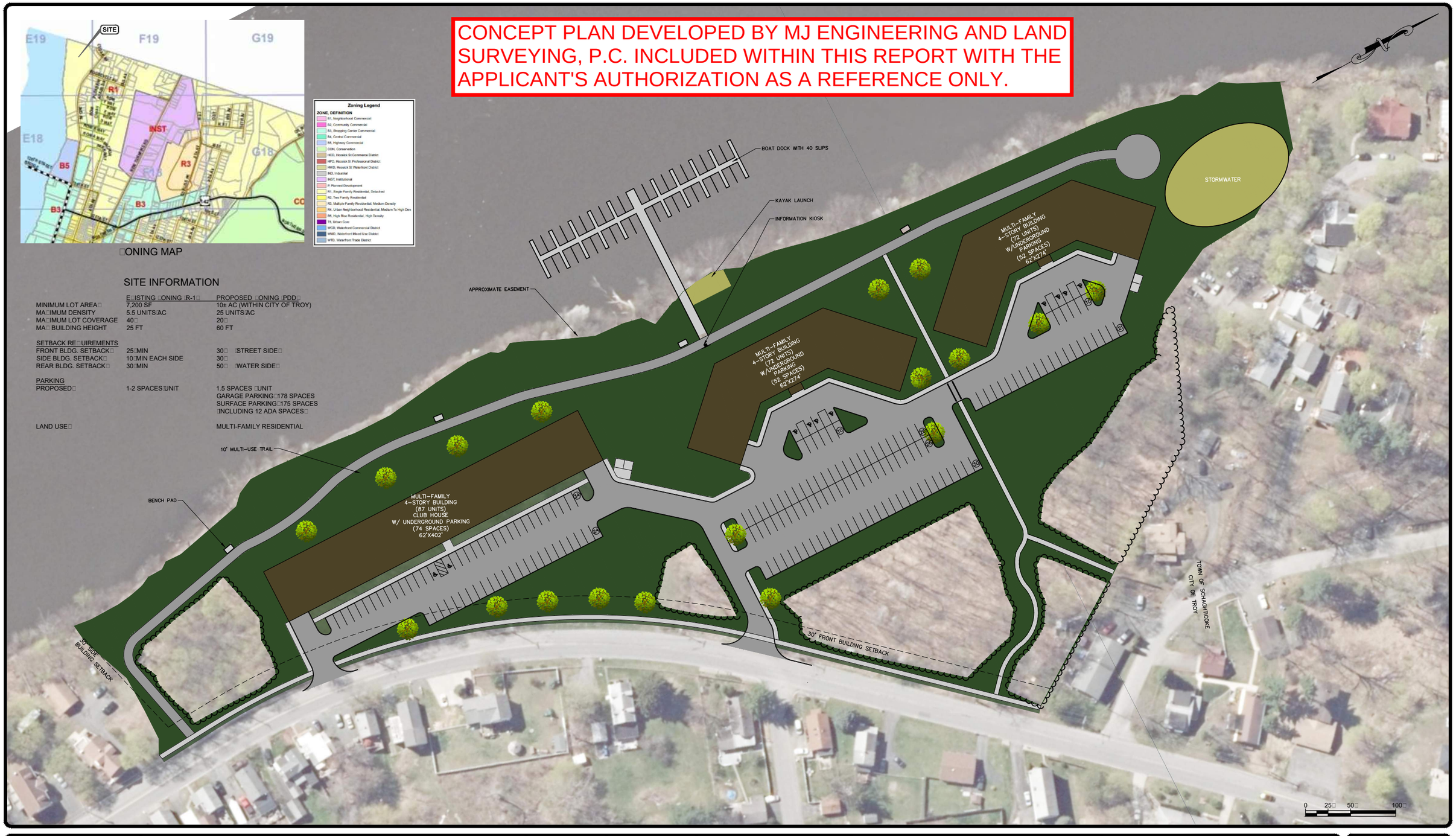
C-1

CONCEPT PLAN DEVELOPED BY MJ ENGINEERING AND LAND SURVEYING, P.C. INCLUDED WITHIN THIS REPORT WITH THE APPLICANT'S AUTHORIZATION AS A REFERENCE ONLY.

□ONING MAP

SITE INFORMATION

	E□ISTING □ONING :R-1□	PROPOSED □ONING :PDD□
MINIMUM LOT AREA□	7,200 SF	10± AC (WITHIN CITY OF TROY)
MA□IMUM DENSITY	5.5 UNITS/AC	25 UNITS/AC
MA□IMUM LOT COVERAGE	40□	20□
MA□ BUILDING HEIGHT	25 FT	60 FT
SETBACK RE□UIREMENTS		
FRONT BLDG. SETBACK□	25□MIN	30□ □STREET SIDE□
SIDE BLDG. SETBACK□	10□MIN EACH SIDE	30□
REAR BLDG. SETBACK□	30□MIN	50□ □WATER SIDE□
PARKING		
PROPOSED□	1-2 SPACES/UNIT	1.5 SPACES □UNIT GARAGE PARKING□178 SPACES SURFACE PARKING□175 SPACES □INCLUDING 12 ADA SPACES□
LAND USE□		MULTI-FAMILY RESIDENTIAL



SUBMITTAL □REVISIONS

No.	DATE	DESCRIPTION	BY	REVIEWED BY□	DATE

PROJ. MANAGER□	JWE
CHIEF DESIGNER□	JWE
DESIGNED BY□	JWE
DRAWN BY□	JWE
CHECKED BY□	-

SEAL

DRAFT

En□ineerin□ and Land Surve□in□, P.C.
1533 Crescent Road - Cli□ton Par□, NY 12065

TROY SECOND AVE

CONCEPT PLAN #2

KEVIN VANDENBURGH

CITY OF TROY AND TOWN OF SCHAGHTICOKE NEW YORK

SCALE□1" □ 50□
CONTRACT No.□-
MJ PROJ. No.□972.44
DATE□AUGUST 2020

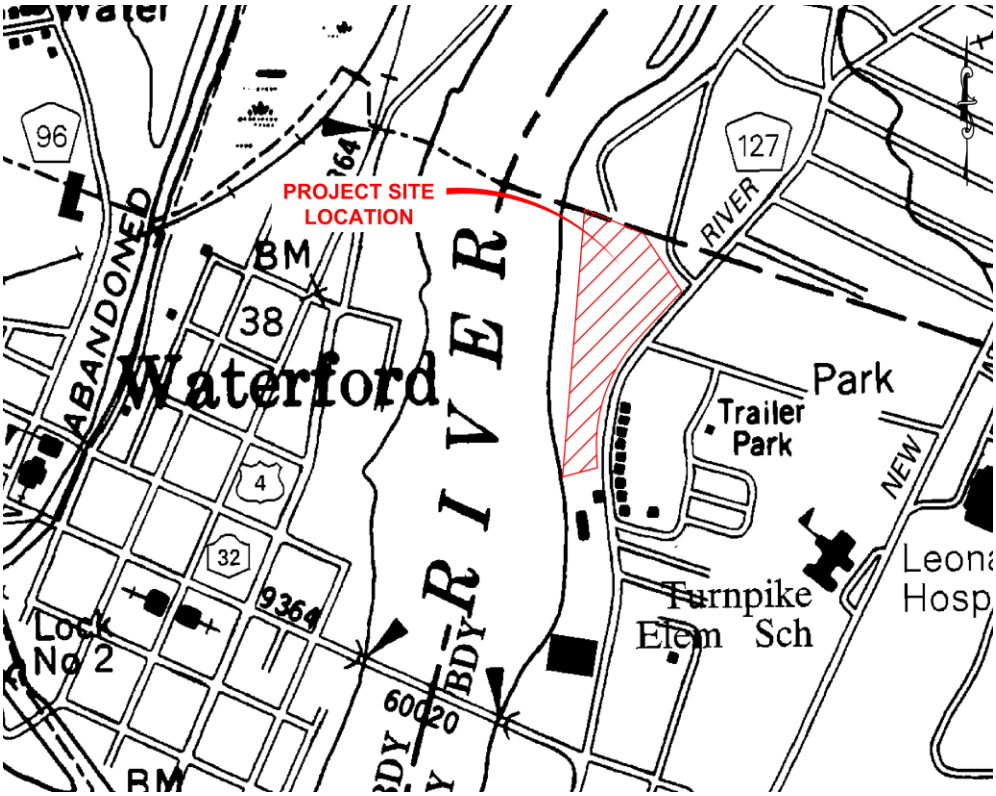
C-1

Section II: Existing Conditions and Environmental Considerations

1. Site Location

The Project site is located along Second Avenue (Dickson Avenue) adjacent to the Hudson River and across from the intersection of Roosevelt Avenue. The Project area is primarily located within the City. Refer to Figure 3 for the Site Location Map.

Figure 3 – Site Location Map



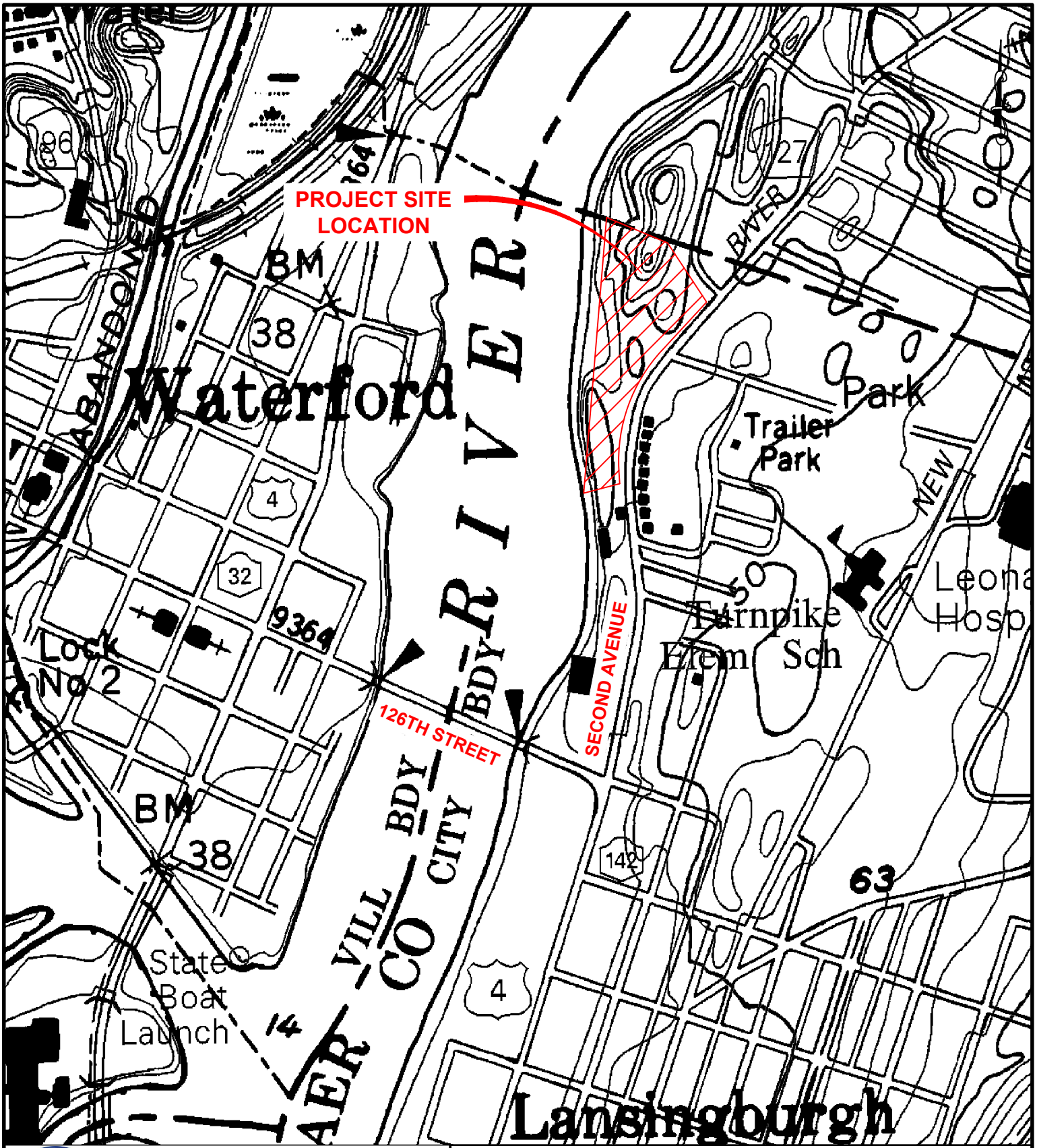
2. Topography and Vegetation

The topography varies greatly within the Project property. The steepest slope within the property is greater than 50% with some areas flattening off closer toward the watercourse. The existing topography is rolling from the north and south ends of the property to the center. The overall grade drops approximately 70 feet from the north end and 40 feet from the south end towards the center of the parcel.

The property is primarily wooded, with a small field area and an existing access road.

A field survey was completed by MJ but was not furnished to Insite Northeast at the time of this Narrative Report. A more detailed analysis of topography and vegetation will be provided once the field survey information is made available.

Refer to Figure 4 for a topographical map of the Project site.



Insite Northeast
2390 Western Avenue • Guilderland, NY 12084
518-867-3323 • www.InsiteNortheast.com

SITE TOPOGRAPHY MAP
SECOND AVENUE
SECOND AVENUE AND ROOSEVELT AVENUE

REV.	DATE	DESCRIPTION	DATE		KEVIN VANDENBURGH * 430 9TH AVENUE TROY, NY 12182		
			JOB #		S.B.L. 70.64-1-1 AND S.B.L. 70.56-1-6		
			SCALE		CITY OF TROY TOWN OF SCHAGHTICOKE	RENSSELAER COUNTY	NEW YORK

3. Site Soils and Geotechnical Analysis

The USDA Soil Survey was used to verify the existing soils within the Project boundaries. Hydrologic soil groups (HSG) were identified for each soil and are defined as follows:

> *Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.*
>
> *Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.*
>
> *Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.*
>
> *Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high-water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.*

According to the Soil Survey Mapping, the proposed Project area is entirely Nassau-Rock outcrop complex, hill (NrD) soil which has not been classified with a HSG.

Table 1 – Existing Soils and Hydrologic Soil Groups

	Map unit name	Slopes	HSG Rating
NrD	Nassau-Rock outcrop Complex	Hilly	N/A

The soil profile per USDA Soil Survey is described in Table 2.

Table 2 – Existing Soil Profile

Depth	USDA Texture
0-7 inches	Very channery silt loam
7-15 inches	Very channery silt loam, very channery loam
15-19 inches	Unweathered bedrock

Pursuant to the Soil Profile information obtained from USDA, it is assumed that bedrock may be present at relatively shallow depths. It should be noted that the bedrock is assumed to be rippable shale and shall not require blasting to excavate and remove. Test pits have not yet been conducted and shall be performed as part of the site plan development approval process. A more detailed analysis of the soils shall be provided following soil testing.

4. Floodplain and Floodway

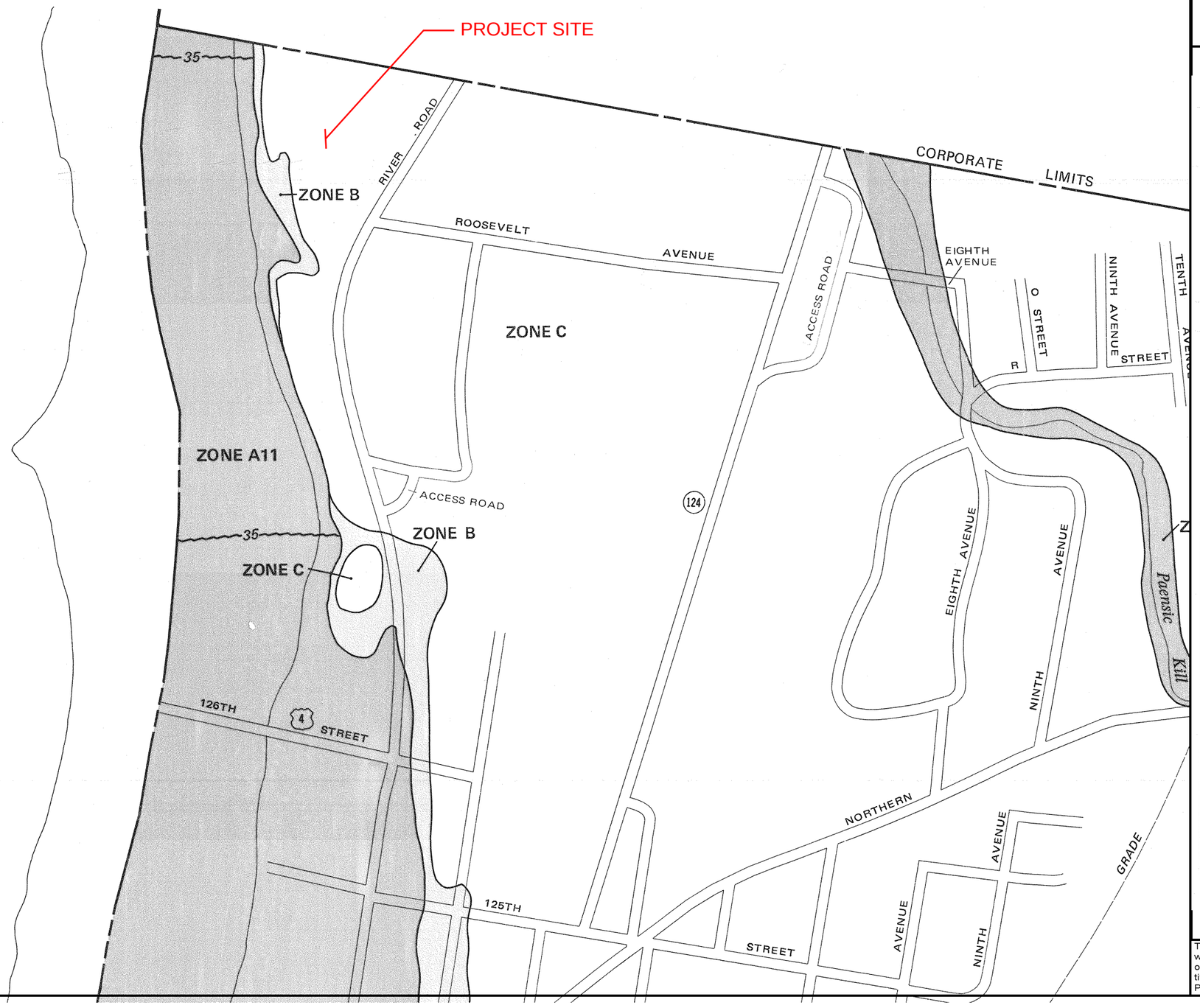
The Federal Emergency Management Agency (FEMA) was consulted to review available flood information for the Project site. Pursuant to Flood Insurance Rate Map (FIRM) Panel 3606770001B, dated March 18, 1980, the property is located in Zone A11, Zone B and Zone C. Refer to Figure 5 for the Firmette generated.

Zone A11 is designated as the 100-year (1% annual chance) floodplain, Zone B is designated as the 500-year (0.2% annual chance) floodplain, and Zone C is designated as areas of minimal flooding.

Pursuant to the FIRM Panel, the 100-year flood elevation at the Project site is 35-feet. It should be noted that approximately 90-95% of the site is greater than 5 feet above 100-year flood plain elevation. Refer to Appendix B for FIRM Panel 3606770001B.

5. Wetlands and Watercourses

The Project site was surveyed and screened for wetlands by MJ Engineering and Land Surveying, P.C. (MJ). Based on the site survey, there are no wetlands on site. The Hudson River directly abuts the property to the west but does not encroach within the property boundary or the buildable area. No other drainage courses are known to be located on the property.



APPROXIMATE SCALE

400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

CITY OF

TROY, NEW YORK

RENSSELAER COUNTY

PANEL 1 OF 4

(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
360677 0001 B

EFFECTIVE DATE:
MARCH 18, 1980

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FEDERAL INSURANCE ADMINISTRATION

6. Threatened/Endangered Species

The US Fish and Wildlife database was consulted through the NYSDEC Nature Explorer for the presence or reports of threatened and/or endangered species within the Project boundaries. No species have been recorded as being threatened and/or endangered at the site. Similarly, the site is not known to contain suitable habitats for threatened or endangered species noted by the NYSDEC. The map is included in Appendix C.

7. Archaeology

The Project site is known to contain several archaeological areas located throughout the property. A *Phase 1A, 1B and Phase II Archeological Site Evaluation* report was developed by Hartgen Archeological Associates, Inc. (Hartgen) dated April 2020. Hartgen visited the site in 2019 to perform the field investigation, and determined the site contained a mix of quarried outcrops, lithic workshops and camp locations. Hartgen recommended avoidance of the defined site areas or additional Phase III Data Recovery. Refer to Figure 6 for a visual depiction of the concentrated areas on the Project site. Refer to Appendix D for the complete Hartgen Report.

The applicant will coordinate with OPRHP to determine the proper method of remediating the archeologic area. This work will contain throughout the site plan development approval process. The Project proposes a Phase III Data Recovery to maximize developability of the site.

8. NYSDEC Environmental Remediation Sites

Three (3) environmental remediation sites were recorded within 2,000 feet of the Project site. The incidents are summarized in Table 3.

Table 3 – NYSDEC Site Remediation Records

Site	Location	Program	Location	Classification and Status
546031	Hudson River PCB Sediments	State Superfund Program	02	02 - Registry of Inactive Hazardous Waste Disposal Sites. See Note 1.
546053	Former Ford Manufacturing Company Mill Site	State Superfund Program	121-125 2nd Street Waterford, NY	C - Remediation has been satisfactorily completed under a remedial program
E546053	Former Ford Manufacturing Company Mill Site	Environmental Restoration Program	121-125 2nd Street Waterford, NY	N - No Further Action at this Time

Note 1: NYSDEC Classification 02 – A site at which:

a. the disposal of hazardous waste has been confirmed and the presence of such hazardous waste or its components or breakdown products represents a significant threat to public health or the environment: or;

b. hazardous waste disposal has not been confirmed, but the site has been listed on the Federal National Priorities List (NPL).

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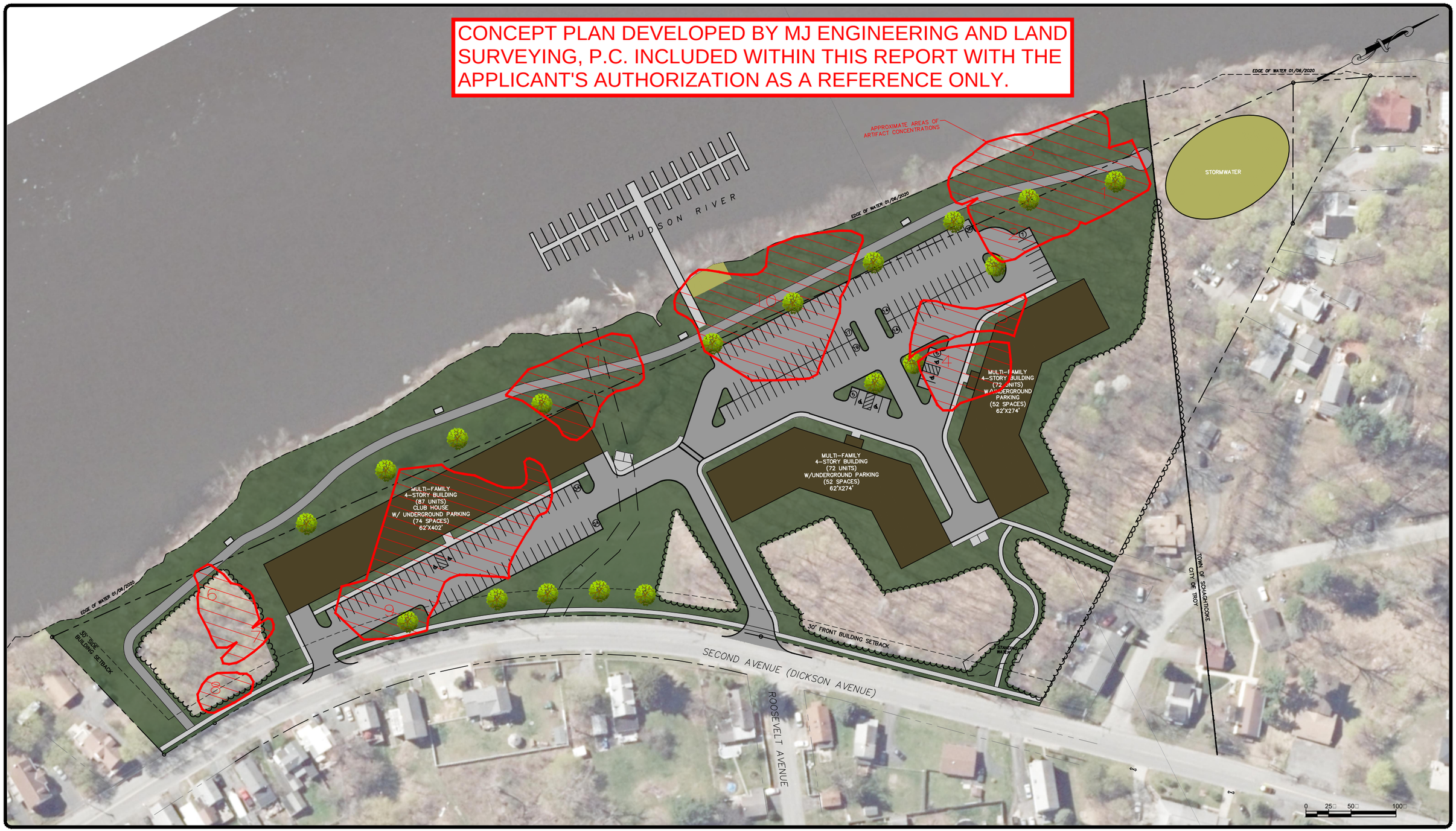


SUBMITTAL / REVISIONS

No.	DATE	DESCRIPTION	BY	REVIEWED BY	DATE

PROJ. MANAGER:	JWE
CHIEF DESIGNER:	JWE
DESIGNED BY:	JWE
DRAWN BY:	JWE
CHECKED BY:	-

SEAL

DRAFT

Engineering and Land Surveying, P.C.
1533 Crescent Road - Clifton Park, NY 12065

TROY SECOND AVE

ARCHEOLOGICAL CONCENTRATION PLAN

KEVIN VANDENBURGH

CITY OF TROY AND TOWN OF SCHAGHTICOKE NEW YORK

SCALE: 1" = 50'
CONTRACT No.: -
MJ PROJ. No.: 972.44
DATE: AUGUST 2020

C-2

Section III: Land Use and Zoning

1. Site Location and Parcels

The Project site consists of two parcels totaling 11.0 acres; the larger parcel, SBL 070.64-1-1, is 9.93 acres, located within the City of Tory (City) and is Zoned R-1 (Residential). The second parcel, SBL 070.56-1-6, is in the Town of Schaghticoke. The Project parcels are summarized in Table 4.

Table 4 - Project Lot Area Summary

Parcel ID	*Current Use*	*Current Zone*	*Proposed Zone*	*Municipality*	*Area (Acres)*
70.64-1-1	Vacant	R-1 Single Family Residential	P Planned Development	Troy	9.93
70.56-1-6	Residential/Vacant	HD Pleasantdale Hamlet Pleasantdale		Schaghticoke	1.07
Total Land Area					**11.0**

The Project site is located adjacent to several residential areas. Parcels to the north are located in Schaghticoke and are zoned HD Pleasantdale (Hamlet Pleasantdale). The adjacent properties to the south and east are zoned R-1 (Single Family Residential). Adjacent property lots generally range in size from 0.15 to 0.35 acres. It should be noted that a trailer park is located directly southeast of the Project site.

The Project site is encumbered by a utility easement for a 24" City water supply transmission main which bisects the property. It is assumed that this portion of the property cannot contain structures, but is suitable for parking, roadways, or other non-structure development work.

2. City of Troy Zoning Regulations

The property within the City is zoned R-1, or Single Family Residential. A selection of the allowable uses and bulk requirements for the zone were obtained from the City Zoning Ordinance Article IV Chapter 285 and are summarized below.

Table 5 –Zone R-1 Single Family Residential Allowed Uses

Allowed Uses	*Special Permit Uses*
Detached Single-Family Residences	Churches
Open Spaces	Nonpublic Elementary and Secondary Schools
Home Occupations	
Accessory Structures Incidental to Allowed Uses	

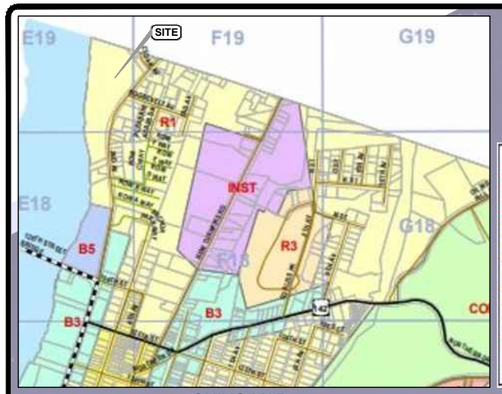
The bulk requirements for the R-1 Zone are summarized in Table 6.

Table 6 – Zone R-1 Single Family Residential Bulk Requirements

Parameter	*Bulk Requirement*
Minimum Lot Area	7,200 square feet
Minimum Lot Width	70 feet at front building line
Minimum Front Setback	25 feet
Minimum Rear Setback	30 feet
Minimum Side Setback	10 feet each or 20 feet on one side, if zero lot line design
Maximum Lot Coverage	40%
Maximum Density	5.5 Units per Acre
Building Height	25 feet
Off-Street Parking	Single Family: Two spaces per unit Home Occupation: Two spaces Other Uses: See Parking Schedule

Based on the bulk requirements and the allowed uses, the Project site can support approximately thirty-six (36) single-family residential homes. Refer to Figure 7 for a conceptual layout developed by MJ which depicts a single-family residential layout utilizing the R-1 Zone bulk requirements.

CONCEPT PLAN DEVELOPED BY MJ ENGINEERING AND LAND SURVEYING, P.C. INCLUDED WITHIN THIS REPORT WITH THE APPLICANT'S AUTHORIZATION AS A REFERENCE ONLY.



ZONING MAP

SITE INFORMATION

	EXISTING ZONING R-1	PROPOSED ZONING R-1
MINIMUM LOT AREA	7,200 SF	10± AC (WITHIN CITY OF TROY)
MAXIMUM DENSITY	5.5 UNITS/AC	3.6 UNITS/AC (36 UNITS TOTAL)
MAXIMUM LOT COVERAGE	40%	28%
MAX BUILDING HEIGHT	25 FT	35 FT
MINIMUM LOT FRONTAGE	70 FT	70 FT
SETBACK REQUIREMENTS		
FRONT BLDG. SETBACK	25' MIN	25'
SIDE BLDG. SETBACK	10' MIN EACH SIDE	10'
REAR BLDG. SETBACK	30' MIN	30'
PARKING		
PROPOSED	2 SPACES/UNIT	2 SPACES/UNIT
LAND USE		SINGLE FAMILY RESIDENTIAL

SUBMITTAL/REVISIONS

No.	DATE	DESCRIPTION	BY	REVIEWED BY	DATE

PROJ. MANAGER	JWE
CHIEF DESIGNER	JWE
DESIGNED BY	JWE
DRAWN BY	JWE
CHECKED BY	-

SEAL

DRAFT

Engineering and Land Surveying, P.C.
1533 Crescent Road - Clifton Park, NY 12065

TROY SECOND AVE

ALTERNATE SUBDIVISION PLAN

KEVIN VANDENBURGH

CITY OF TROY AND TOWN OF SCHAGHTICOKE NEW YORK

SCALE	1" = 50'
CONTRACT No.	-
MJ PROJ. No.	972.44
DATE	AUGUST 2020

C-1
ALT

Zone Change to Planned Development District

Pursuant to City Code, a zone change to the Planned Development District (P) allows for the development of multi-family structures and flexibility with the development process. Section *§285-57 A* defines the City's Philosophy for the justification to change to the P Zone.

> ***Philosophy***
>
> *This District is designed to maximize choice in the types of environment, housing, densities, occupancy tenure, lot sizes, community facilities, usable open space and recreational areas within a large parcel of land in which a planned mix of residential uses is proposed. The intent of this District is to foster a creative and efficient use of land resulting in small networks of utilities and streets, the preservation of existing natural resources, and a development pattern consistent with community needs and standards.*

The allowed uses and bulk requirements for the P Zone are included in Tables 4 and 5.

Table 7 – Planned Development District (P) Allowed Uses

Allowed Uses	Special Permit Uses
Dwelling Units (detached, semidetached, attached or a combination thereof whether single-family, duplex, multiplex, condominium or low-rise multifamily)	None
Recreational facilities expressly designed for use by occupants of the above cited dwelling units.	

Table 8 – Planned Development District (P) Bulk Requirements

Parameter	Single-Family Detached	Two-Family	Other Residential	Recreational Facilities
Minimum Lot Area	5,800 sqft	3,000 sqft per unit	2,500 sqft per unit	10,000 sqft
Minimum Lot Width at Front Building Line	40 feet	40 feet	20 feet per unit	50 feet
Minimum Front Setback	20 feet	15 feet	25 feet	20 feet
Minimum Rear Setback	30 feet	20 feet	20 feet[1]	35 feet
Minimum Side Setback	5 feet either side or a total of 10 feet on one side, if zero lot line design	5 feet either side or a total of 10 feet on one side, if zero lot line design	10 feet total	10 feet each side
Maximum Lot Coverage	50%	50%	60%	50%
Maximum Density	6 units /acre	14 units / acre	21.5 units / acre	N/A
Building Height	30 feet	35 feet	40 feet	25 feet
Off-Street Parking	Two spaces per unit	Two spaces per unit	Two spaces per unit[2]	See Note 3

1. Rear setback applies to shoreline for parcels on Hudson River.
2. See *285-87 Planned Development Parking* (Table 9)
3. See *285-91 General Required Off-Street Parking*

Based on the summary included in Table 8, the proposed Project would be considered "other residential", with maximum lot coverage of 60%, maximum building height of 40 feet and maximum density of 21.5 units per acre. As the Project proposes 220 - 240 Dwelling Units/Apartments, the Project proposes a density of approximately 20-21.8 units/acre, inclusive of both parcel areas (11-acres) as the basis for development. Utilizing only the City parcel (9.93-acres) as the basis for the calculation, the effective density increases to 22.1-24.2, and a Variance would be required.

The City has specific criteria and definitions for what constitutes a residence type. Specifically, each building type (i.e. single-family, multifamily, etc.) are defined in *§285-12*, and are included below.

RESIDENCE

A building containing one or more dwelling units. This shall not include hotel, motel, or HRF.

(1) MULTIFAMILY, HIGH-RISE *A dwelling no more than 250 feet high used solely as a dwelling and which contains at least three dwelling units.*

(2) MULTIFAMILY, HIGH-RISE, MULTIUSE *A dwelling no more than 250 feet high which contains at least three dwelling units and which provides commercial and/or professional services on all or part of the first floor only.*

(3) MULTIFAMILY, LOW-RISE, MEDIUM-DENSITY APARTMENT HOUSE *A dwelling no more than 40 feet high which contains three or more dwelling units. A condominium or a townhouse is not an apartment house.*

(4) MULTIFAMILY, LOW-RISE, MEDIUM-DENSITY TOWNHOUSE *A dwelling not more than 40 feet high containing three or more dwelling units, the units of which are individually owned, each owner receiving a deed enabling him/her to sell, mortgage or change his/her unit independent of the owners of the other units in the dwelling.*

(5) SINGLE-FAMILY, ATTACHED AND SEMIATTACHED *A dwelling not more than 40 feet high containing at least three dwelling units separated by party walls. The land upon which each unit is located is in individual ownership.*

(6) MULTIFAMILY, MEDIUM-RISE, MULTIPLEX *A dwelling no less than 40 feet, nor more than 90 feet high, used solely as a dwelling and which contains at least three dwelling units.*

(7) MULTIFAMILY, MEDIUM-RISE, MULTIUSE *A dwelling no less than 40 feet, nor more than 90 feet high, which contains at least three dwelling units and which provides commercial and/or professional services on all or part of the first floor only.*

(8) SINGLE-FAMILY, DETACHED *A dwelling containing no more than one dwelling unit not abutting or connected to any other dwelling or building (except accessory buildings, e.g., garage, toolshed).*

(9) TWO-FAMILY *A dwelling no more than 35 feet high, used exclusively as a dwelling and containing two dwelling units only.*

(10) TWO-FAMILY DUPLEX *A dwelling containing two dwelling units side by side separated by party wall. Each unit is located on a separate lot.*

Based on the included definitions, the Project proposes a **Multifamily, Low-Rise, Medium-Density Apartment House.**

The City defines Building Height as follows:

BUILDING HEIGHT

The vertical distance to the highest point of the roof, if it is flat, or to the mean level between the eaves and the highest point of the roof, if the roof is of any other type, measured as follows:

(1) If the building adjoins the front property line or is not more than 10 feet distance therefrom, measured at the center of the front wall of the building from the established grade of the curb or, if no grade has been officially established and no curb exists, measured from the average level of the finished ground surface across the front of the building.

(2) If the building is more than 10 feet from the front property line, measured from the average level of the finished grade adjacent to the exterior walls of the building. Where the finished grade surface is made by filling, the level of such finished grade, for the purpose of this definition, shall be deemed to be no more than three feet above the established grade of the curb.

(3) When a lot fronts on two or more streets of different levels, the lower street or the average elevation of the lot with regard to the abutting streets may be taken as the base for measuring the height of the building.

Based on the definition of Building Height, it is assumed the building will be measured from the grade adjacent to the exterior walls. The Project proposes a maximum building height of approximately 50 feet from ground level, which exceeds the 40-foot height limit for the Multifamily Low-Rise buildings. As such a Variance will be required.

In addition to the P Zone bulk requirements, there are additional standards that the Commission shall ensure to enforce the Philosophy of the P Zone is met. The *Review Standards* from *§285-57 H* are included below:

(1) *To the extent feasible, at least 10% of the total number of dwellings within this District should be in single-family detached structures.*

(2) *Building height, size and design shall be appropriate to the location within the district where proposed and shall further be appropriate to the overall development plan of the district.*

(3) *There shall be off-street parking facilities which shall be adequate for the particular development, as determined by the Commission. In no cases shall campers, boats and other recreational vehicles be stored in other than screened or enclosed structures.*

(4) *Landscaped open spaces or open areas left in their natural state should be provided at a ratio of not less than 1,000 square feet of open space for every dwelling unit.*

(5) *A buffer strip of adequate width should be provided, where appropriate, between residential and nonresidential areas and between residential areas and state and county roads. Said buffer strip may be created by utilizing suitably landscaped green areas, by design, configuration and location of particular buildings, or by an other method meeting the approval of the Commission. No parking shall be permitted as a buffer area.*

(6) *Where feasible, natural features such as streams, rocks, outcrops, topsoil, trees and shrubs shall be preserved and incorporated in the landscape of the development.*

(7) *To improve the quality of the environment and to reduce inconvenience during bad weather, the underground installation of electrical and telephone equipment shall be required where feasible.*

Parking

The parking requirements for the Planned Development District are included in two (2) places in the City Code, with different requirements. Pursuant to *§285-57*, two spaces are required per unit. The Code references *§285-86* for additional regulations

Parking within the Planned Development Zone

Due to the traffic-intensive nature of planned residential developments, as defined in §285-57, additional nonassigned off-street parking is crucial to orderly development within this Zone district. The intent of this section is to provide a total number of spaces to be allocated between assigned and unassigned.

The Parking Schedule included in *§285-86* is summarized in Table 9.

Table 9 – Planned Development District (P) Parking Requirements

Square Feet per Unit	*Assigned*	*Unassigned*
700 or less	1.0	-
700 – 800	1.0	0.17
801 – 900	1.0	0.34
901 – 1000	2.0	0.50
1001 – 1300	2.0	0.84
1301 – 1400	2.0	1.18
1401 – 1500	2.0	1.34
Over 1500	2.0	1.50

The Project will utilize both underground and above ground parking to accommodate the City parking requirements. Based on the number and size of the apartments, the parking requirements for the Project are summarized in Table 10.

Table 10 – Multifamily Project Parking Requirements

Apartment Type	***Apartment Size***	***Required Assigned Spaces*** *(Per Unit)*	***Additional Unassigned Spaces*** *(Per Unit)*	***Total Required Spaces*** *(Per Unit)*
One Bedroom	800± SF	1.0 / Unit	0.17 / Unit	1.17 / Unit
Two Bedroom	1,000-1,200 SF	2.0 / Unit	0.84 / Unit	2.84 / Unit

As previously noted, the Project proposes approximately 220-240 apartments, with a generally even distribution between one and two-bedroom apartments. Utilizing the requirements in Table 10 and the number of proposed apartment units, the required parking was calculated, and is included as follows:

110 – 120 One-Bedroom Apartments x 1.17 Parking Spaces/Unit = *129 – 140 Parking Spaces*
110 – 120 Two-Bedroom Apartments x 2.84 Parking Spaces/Unit = *312 - 341 Parking Spaces*

Based on the above calculations, a total of 441 to 481 parking spaces are required to accommodate the proposed Project pursuant to City code requirements for the Planned Development Zone. This represents a larger number of parking spaces than would generally be provided for the proposed 220 – 240 apartments. In lieu of the above City requirements, the Project would be seeking a Variance or proposing land-banked parking to reduce the number of constructed parking spaces. By reducing the number of parking spaces, the Project can reduce site disturbance and impervious areas, thereby minimizing impacts.

The Project proposes reducing the parking requirements from 2 spaces per apartment to approximately 1.5 spaces per apartment unit, which would result in 345 to 375 spaces for the Project.

A total of 353 parking spaces have been accommodated in the current site plan. The underground garage parking will include approximately 178 stalls, with the remaining spaces accommodated in the above-ground parking areas distributed throughout the site.

Each space shall have minimum dimensions of 9-feet by 18-feet in accordance with City requirements. A total of twelve (12) Handicap Accessible parking spaces are provided and will be distributed throughout the site in the above and below-ground parking areas.

City Variances Required

Based on the proposed concept, Variances will be required in addition to the Zone change from R-1 to P. A summary of the bulk requirements and proposed Variances are included in Table 11.

Table 11 – City Bulk Requirements Summary and Proposed Variances

Parameter	***Bulk Requirement***	***Proposed***	***Variance Needed***
Minimum Lot Width	20 feet per unit	> 20 feet per unit	No
Minimum Front Setback	25 feet	> 25 feet	No
Minimum Rear Setback	20 feet	>20 feet[1]	No[1]
Minimum Side Setback	10 feet total	> 10 feet	No
Maximum Lot Coverage	60%	< 60%	No
Maximum Density	21.5 units / acre	20 – 21.8 units/acre 22.1-24.2 units/acre (City Parcel Only)	Yes[2]
Building Height	40 feet	50 feet	Yes
Off-Street Parking	Two spaces per unit[3]	~1.5 spaces per unit	Yes

1. Rear setback applies to shoreline for parcels on Hudson River.
2. Variance required when using only 9.93-acre parcel for density calculations.
3. See parking requirements summarized herein.

3. City of Troy Comprehensive Plan

The proposed Project generally comports with *the Realize Troy 2018 City Comprehensive Plan* and will have a positive impact on the community. The City has provided initial review of the proposed Project as is depicted in the Comprehensive Plan Analysis provided by the City. As shown in the analysis, the Project meets many of the goals and intent of the comprehensive plan. A selection of the review items are included below:

Waterfront – p.18 – lack of access to waterfront

It is an opportunity that will require a range of strategies from improving connections, removing barriers, increasing access to and from the water and determining the specific role and character of the area as a successful waterfront place

Goal 1: Grow the Economy & Population P28

Supports target of 1% new growth annually.

Goal 2: Promote Healthy, Safe, and Green Neighborhoods. Pg 33

The creation of new areas for mixed-use development with a range of housing choices will support new home ownership and rental options which are needed to keep established neighborhoods healthy. Enhancing the relationship between the city's existing and new neighborhoods, the riverfront and the city's park lands through new connections, linkages and public realm improvements will connect established neighborhoods to new investment making these areas more attractive places to live within the city and region.

Encourage a diverse housing stock to meet the needs of Troy's existing and future population pg 34- 2.2.1

A variety of housing types in terms of housing form, tenure and affordability will be promoted. In particular, townhouses and multi-unit buildings will be encouraged in the neighborhoods. New housing will be compatible and complementary to the existing building stock. Within primarily residential areas, the City will identify methods to prohibit uses which create heavy parking demand where insufficient capacity exists.

***2.4.1** Land use and development will be planned in a manner that ensures residents have access to a basic food store, park or other open space amenities within a fifteen-minute walk of their home or workplace.*

***2.4.2** Neighborhoods will have high-quality pedestrian sidewalks and bicycle infrastructure to support active transportation.*

***2.4.3** Linkages and corridors to existing and planned parks and open spaces will be improved to ensure green spaces are within walking distance of nearby residents.*

Place-Specific Strategies – Lansingburgh P 36

Reconnect Lansingburgh visually and physically to the Hudson River shoreline.

***L11:** Improve sidewalk conditions throughout the neighborhood to improve safety and neighborhood connections.*

***3.3.2** Neighborhoods will be planned to encourage walking and cycling by ensuring that key routes and corridors have sidewalks and safe crossing zones. The City of Troy will work with property owners to encourage maintenance of local sidewalks.*

***4.1** Ensure Troy has an adequate supply of accessible, well maintained parks and open spaces to provide active and passive rec. ops.*

***4.2.3** A city-wide waterfront trail/promenade along the Hudson River will be planned to improve access to the water's edge and to enhance recreational opportunities.*

***4.2.5** Entryways into the city will be enhanced by ensuring new buildings are appropriately sited and massed to define these entryways and through the introduction of landscape elements, pedestrian amenities and other special treatments such as decorative pavement, distinctive street furniture, public art and/or other landscape features.*

Goal 5: Invest in sustainable infr. & protect the env. Pg 57

***5.1.1** Watercourses and major open spaces, shown on Map 12 will be protected and the City will prohibit major development in these areas. Pg 58*

Goal 6 Support Compact Growth pg 62

Map 9 pg. 148 shows waterfront trail connection to north of Hannaford.

4. Town of Schaghticoke Zoning Regulations

The parcel located within the Town of Schaghticoke is proposed to be utilized for stormwater management only. As such, a detailed review of zoning regulations for Town of Schaghticoke is excluded. The zone for this property is HD Pleasantdale, or "Hamlet Pleasantdale". A summary of the Use and Bulk Requirement for the HD Zone is included in Table 12.

Table 12 – Town of Schaghticoke HD Pleasantdale (Hamlet) Zone Section V.E Schedule of Use Regulations

Parameter	*Bulk Requirement*
Minimum Lot Area	20,000 sf
Number of Dwellings per Acre	20,000 sf / dwelling unit
Maximum Structure Coverage	35%
Minimum Open Space	20%
Maximum Height	45
Minimum Lot Width/Depth	50 ft/100 ft
Minimum Side Yard	10 ft
Minimum Front Yard	20 ft
Minimum Rear Yard	20
Minimum Flood Area	600 sqft / dwelling unit

The Project shall incorporate the parcel into the greater common plan and does not intend to develop the parcel separately.

5. State and County Regulations

The Project is located in the State of New York and will make connections to public water and sewer. In addition, the Project proposes a total land disturbance greater than 1-acre. As such, the Project is subject to the review of several State agencies, outlined below:

New York State Department of Health (NYSDOH)

- The municipal water design shall conform with the 2012 *Recommended Standards for Water Works*
- The municipal sewer design shall conform with the 2014 *Recommended Standards for Wastewater Facilities*

New York State Department of Environmental Conservation (NYSDEC)

- The wastewater design is subject to the review of the NYSDEC
- The Project shall conform with the State Pollutant Discharge Elimination System (SPDES)
- The stormwater design shall conform with the 2015 *Stormwater Management Design Manual*
- The Project area shall confirm with the NYSDEC regulations for Threatened & Endangered Species
- The Project shall undergo an environmental impact assessment per the New York Codes, Rules, and Regulations (NYCRR) Part 617 State Environmental Quality Review (SEQRA)

New York State Office of Parks, Recreation and Historic Preservation (OPRHP)

- The State Historic Preservation Office (SHPO) operates as part of the OPRHP
- The Project area is subject to the review of the OPRHP/SHPO regulations for archaeological review

New York State Department of Transportation (NYSDOT)

- Highway Entrance Permit to construct driveway entrances on Second Avenue.
- Highway Work Permit to construct utility connections to existing municipal infrastructure.

6. Federal Regulations

Based upon the environmental findings, the US ACOE or FEMA may be involved agencies if wetlands, streams, or the floodplain is proposed to be altered. Should they remain undisturbed, permits or approvals will not be necessary. No encroachment into these areas is proposed as part of the Project.

No other federal regulations have been identified that would require permitting or approvals for this Project.

7. Permits, Variances and Approvals

SEQRA Review and Declaration

- The Project is subject to the environmental impact assessment per the New York Codes, Rules, and Regulations (NYCRR) Part 617 State Environmental Quality Review (SEQRA).
- Based on a review of the *Realize Troy 2018 Comprehensive Plan* and discussions with the City, the proposed Project is assumed to be a Type 1 action.
- The City Council is assumed to be lead agency.

Zoning Variances

- The proposed concept plan does not meet all bulk requirements as outlined in Article IV 285-57 Planned Development. Area Variances shall be requested of the City of Troy for these purposes, and are summarized in Table 11

Site Plan Approval

- Projects for the parcels located within the City of Troy will be subject to Site Plan approval through their Department of Planning office.
- Rensselaer County Planning Board is assumed to be an interested/involved agency but will not be lead agency.
- Town of Schaghticoke is assumed to be an interested/involved agency but will not be lead agency.

Section IV: Traffic

1. Existing Traffic Conditions

The Project area is situated on Second Avenue directly across from Roosevelt Avenue, a local road from a small nearby subdivision. The nearest major intersection to the Project site is located to the south at the 126th Street Bridge. The intersection is signalized and includes a left-turn lane in the southbound direction and a dedicated right-turn lane (southbound direction) from the 126th Street Bridge.

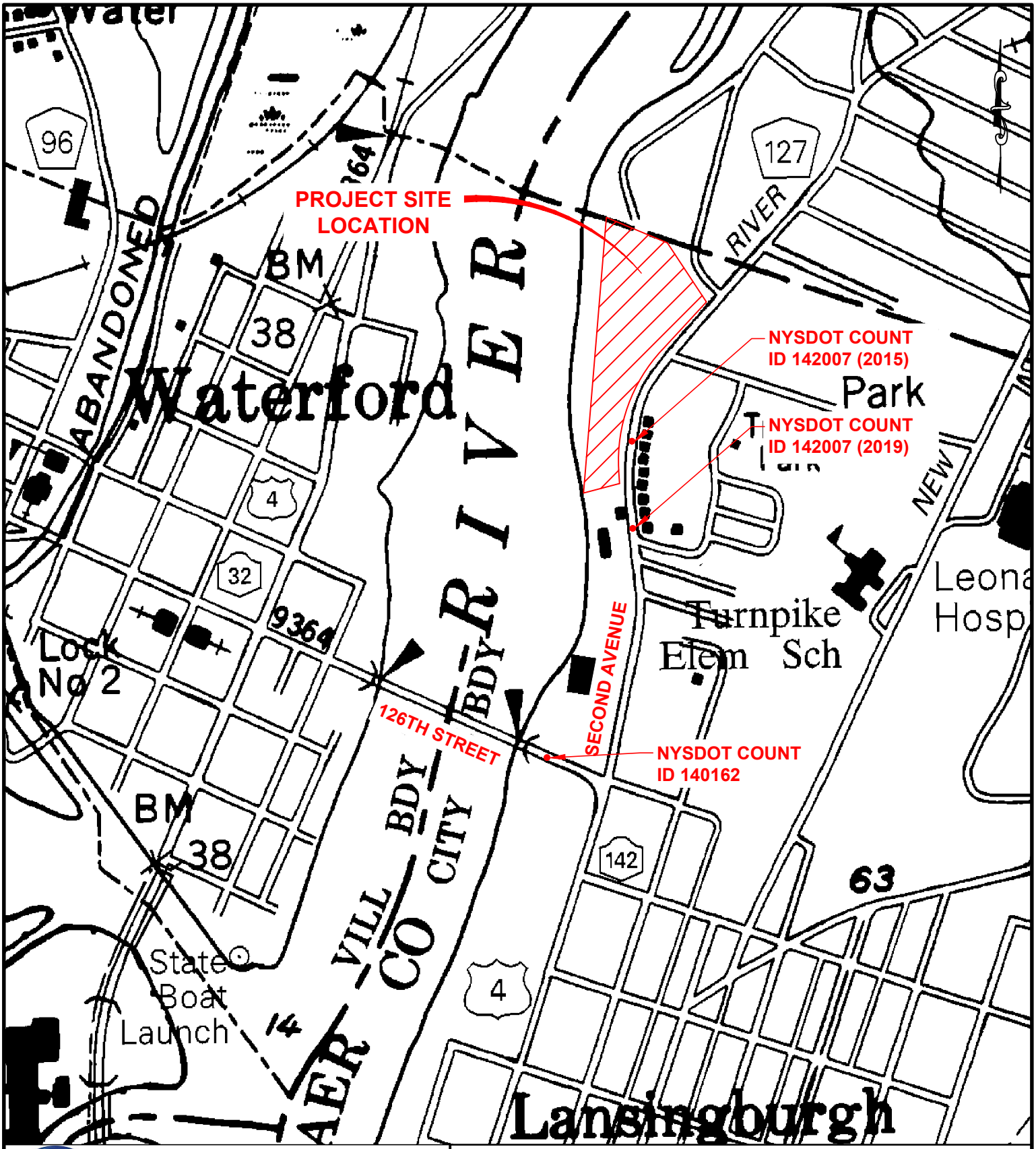
The NYSDOT Traffic Data Viewer was utilized to obtain vehicular traffic data on Second Avenue in the vicinity of the Project site. Data was obtained Second Avenue nearest the Project site location (ID 142007) and the 126th Street Bridge (ID 140162). Refer to Figure 8 for the traffic count locations.

Traffic counts for Second Avenue were performed in 2015 and 2019, while the 126th Street data is only available for 2015. Data for the traffic counts are included in Table 13.

Table 13 – Traffic Count Data

NYSDOT Count ID	Location	Date	Condition	Peak AM (7AM-9AM)	Peak PM (4PM-6PM)	AADT
140162 (2015)	98 Yards West of Second Ave	08/24/2015	Eastbound	378	578	5698
140162 (2015)	98 Yards West of Second Ave	08/24/2015	Westbound	356	546	5764
142007 (2019)	130 feet North of Row C Way	07/23/2019	Northbound	64	243	1855
142007 (2019)	130 feet North of Row C Way	07/23/2019	Southbound	184	100	1551
142007 (2015)	110 Yards South of Roosevelt Avenue	08/24/2015	Northbound	62	240	1747
142007 (2015)	110 Yards South of Roosevelt Avenue	08/24/2015	Southbound	149	112	1477

Based on the results in Table 13, the Peak AM Southbound Traffic increased from 149 to 184 (35 cars) from 2015 to 2019, and the Average Annual Daily Traffic (AADT) similarly increased in both the northbound and southbound directions.



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TRAFFIC COUNT LOCATION MAP
SECOND AVENUE
SECOND AVENUE AND ROOSEVELT AVENUE

REV.	DATE	DESCRIPTION	DATE		KEVIN VANDENBURGH * 430 9TH AVENUE TROY, NY 12182		
			JOB #		S.B.L. 70.64-1-1 AND S.B.L. 70.56-1-6		
			SCALE		CITY OF TROY TOWN OF SCHAGHTICOKE	RENSSELAER COUNTY	NEW YORK

2. Proposed Project Traffic Impacts

The proposed Project includes the development of 220 to 240 Dwelling Units/Apartments and will generate new trips along Second Avenue. Utilizing the calculation data provided by the Institute of Transportation Engineers (ITE) Trip Generation Manual 10th Edition, Peak Hour Trips can be estimated for the proposed development. The ITE Manual includes a formula to estimate the Peak Hour Trips as well as trip distribution based on historic ratios for similar projects. The ITE Multifamily Housing Low-Rise structure (ITE 220) was used for the calculations. A summary of the calculation ratios is included in Table 14.

Table 14 – Distribution Ratio for Peak Hour Trips

Proposed Use	Unit	AM Peak Trip Generation (7AM-9AM)			PM Peak Trip Generation (4PM-6PM)		
		Total	In	Out	Total	In	Out
Multifamily Housing Low-Rise (ITE 220)	Per Dwelling Unit	0.46	23%	77%	0.56	63%	37%

Assuming the maximum development of 240 dwelling units, the Peak Hour Trips can be calculated using the ITE Manual distribution described in Table 15. A summary of the Estimated Peak Hour Trips resulting from the proposed Project is included in Table 15.

Table 15 – Estimated Peak Hour Trips

Proposed Use	AM Peak Trip Generation (7AM-9AM)			PM Peak Trip Generation (4PM-6PM)		
	Total	In	Out	Total	In	Out
Multifamily Housing Low-Rise (ITE 220)	111	26	85	135	85	50

Based on the calculations, the Project will increase Peak Hour Trips by 111 cars in the AM Peak Hours and 135 cars in the PM Peak Hours.

It is anticipated that approximately 90% of traffic from the Project site will travel to and from the south (towards the 126th Street Bridge) while the remaining 10% will travel to and from the northerly direction. As such, 90% of traffic from the Project site will turn right (southbound) onto Second Ave, while the remaining 10% of traffic will turn left (northbound). Return Trips to the site are also assumed to match the departure, with 90% of PM Peak Hour Trips heading north along Second Avenue from the 126th Street Bridge. Applying these percentages with the ITE 220 calculated Peak Hour Trips, the Peak Hour Trip Distribution was calculated for both AM and PM Peak Hours and is included in Tables 16 and 17.

Table 16 – AM Peak Hour Trip Distribution

Exiting Project Site			Entering Project Site		
Total Trips	Northbound (10%)	Southbound (90%)	Total Trips	Northbound (90%)	Southbound (10%)
85	8	77	26	23	3

Table 17 – PM Peak Hour Trip Distribution

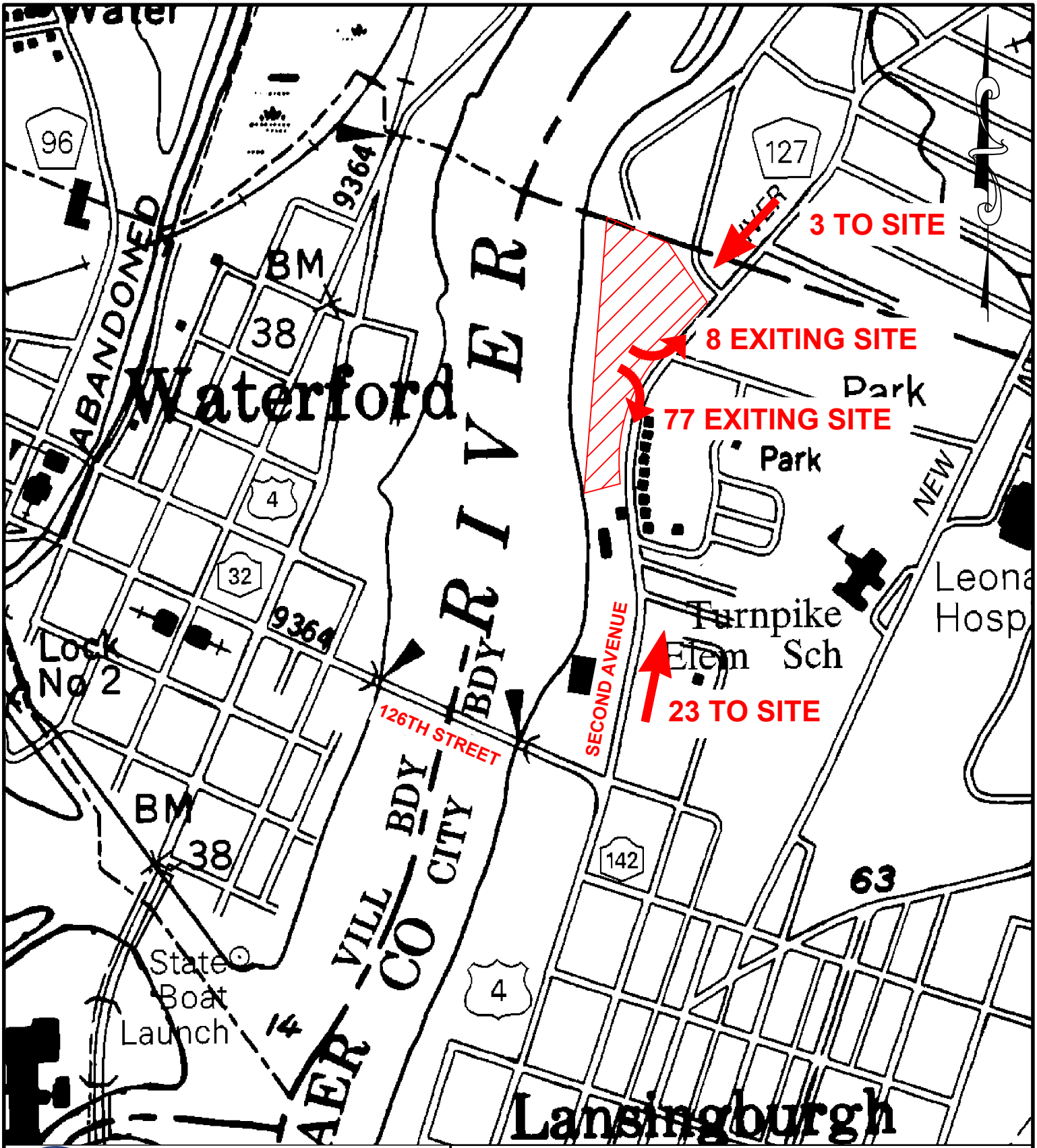
Exiting Project Site			Entering Project Site		
Total Trips	Northbound (10%)	Southbound (90%)	Total Trips	Northbound (90%)	Southbound (10%)
50	5	45	85	77	8

During the AM Peak Hour, it is assumed that the majority of the Total Peak Hour Trips will be leaving the site, travelling southbound along Second Avenue. During the PM Peak Hour, additional Trips are realized due to residents leaving for shopping, etc. Most of the trips impact the section of Second Avenue between 126th Street and the Project site. Refer to Figures 9 and 10 for the Peak Hour Trip Distribution. A summary of the Peak Hour Traffic Load Impacts is included in Table 18. It should be noted the summary in Table 18 includes only the portion of Second Avenue between the Project site and the 126th Street Bridge, as it was calculated to receive 90% of the traffic load. The remaining Trips beyond the Project site (to the north) are minimal and are thus excluded from the analysis table.

Table 18 –Peak Hour Traffic Load Impacts

Condition	Existing Peak AM	Peak Hour Increase	Post-Development Peak AM	Existing Peak PM	Peak Hour Increase	Post-Development Peak PM
Northbound	64	**23**	**87**	243	**77**	**320**
Southbound	184	**77**	**261**	112	**40**	**152**

Based on the calculations performed, 77 Peak Hour Trips are added to the southbound lane and 23 Peak Hour Trips are added to the northbound lane of Second Avenue during the AM Peak Hours. During the PM Peak Hours, 77 Trips are added in the northbound lane and 40 Trips are added to the southbound lane. Based on the existing number of trips, the additional traffic loads will not significantly impact the intersection. As previously noted, the signalized intersection is provided with a dedicated turning lane and it is assumed that the intersection is sufficient to accommodate the increased Peak Hour Trips calculated herein.



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TRAFFIC IMPACTS A.M. PEAK HOUR
SECOND AVENUE
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REV.	DATE	DESCRIPTION	DATE		KEVIN VANDENBURGH * 430 9TH AVENUE TROY, NY 12182		
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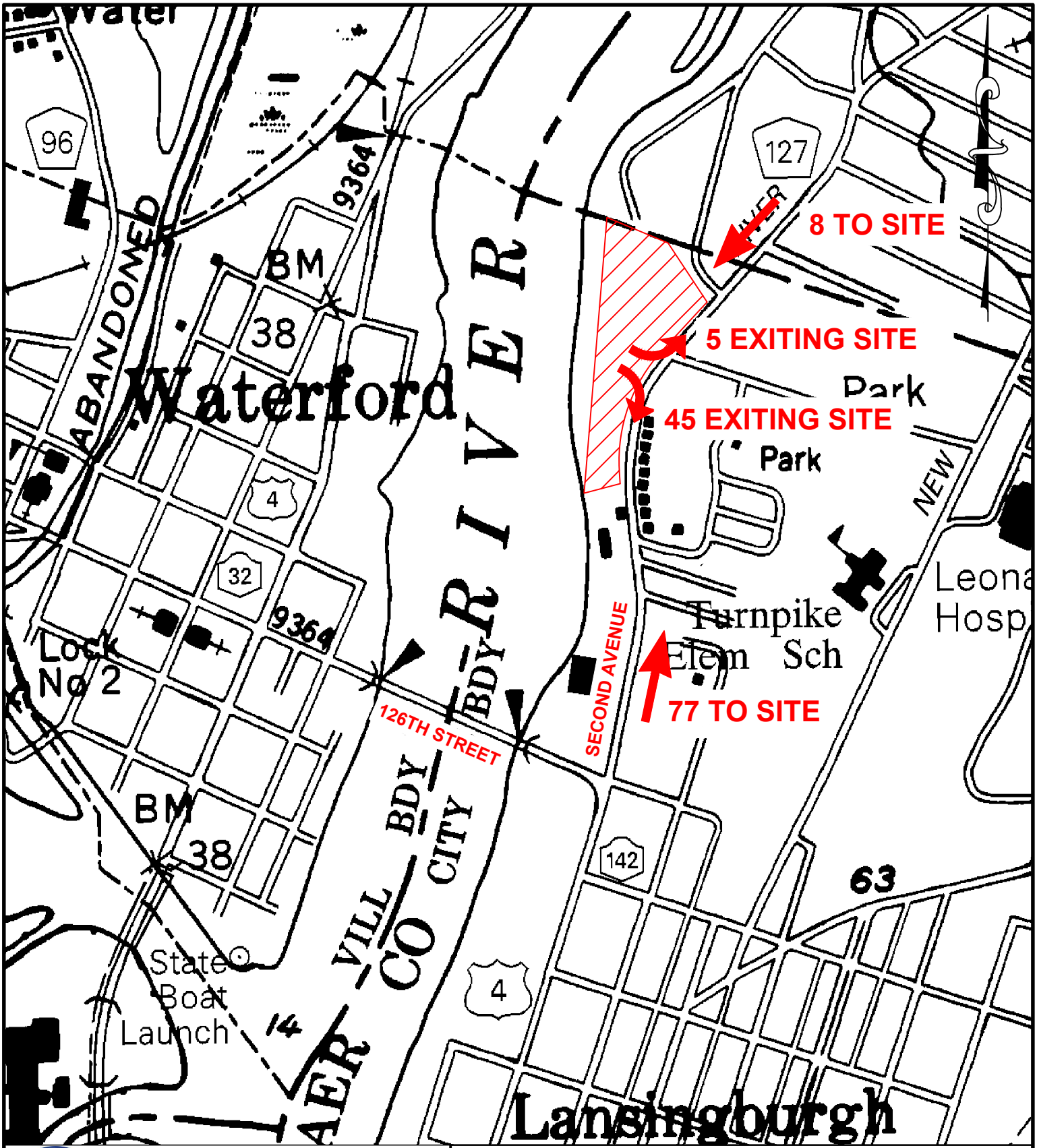

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TRAFFIC IMPACTS P.M. PEAK HOUR
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Section V: Utilities

1. Sewer

The Project site is located within the County Sewer District, and a Combined Sewer Overflow (CSO) gravity sewer line is located along Second Avenue. The existing County trunk sewer located along Second Avenue is comprised of an 18-inch RCP sewer and a 24-inch VCP overflow pipe. A *Sewer Engineering Report* dated October 19, 2019 was completed by MJ for Rensselaer County Sewer. Based on the report, there is capacity within the system to accommodate new flows; however, any new connections or sewer flows to the CSO should be offset by removing CSO connections elsewhere in the system. Refer to Appendix G for the report.

The projected hydraulic sewer loading was estimated utilizing the NYSDEC Design Standards for Wastewater Treatment Works, 2014, corresponding with a flow of 110 gallons per day (gpd) and associated with residential units. Assuming an equal distribution of 1 and 2-bedroom apartments for the maximum design case of 240 Dwelling Units/Apartments, a total of 360 bedrooms is calculated. Refer to Table 19.

Table 19 – Hydraulic Sewer Loading

Flow Component	*# of Units*	*Flow Rate per Unit – gallons per day*	*Total Component Flow*
Option 1 Apartments	360 bedrooms (120 1BR units and 120 2BR units)	110 per bedroom per day	39,600 gal/day

As the Project has not yet begin detailed engineering design, further analysis of the sewer system and required mitigation has not yet been performed. It is assumed that this will be performed during the site plan development process and will be reviewed by the City and the City's designated review engineer. Through the Project development, the applicant will be required to improve the function of the CSO system and therefore reduce effluent discharge to the Hudson River and relieve burden on the County Sewer system.

2. Domestic Water

The Project site is located within the City Water District, and public water is available along Second Avenue. A 24-inch ductile iron transmission waterline and associated utility easement dedicated to the City is located on the middle of the Project site. The Project site includes a small fenced-in area which houses and electric meter and associated waterline appurtenances. It is assumed that a water service connection will be provided along Second Avenue to accommodate the Project site. Cross-connection control will be provided within each building.

The domestic water demands can be assumed to be similar to the sewer loading previously calculated. As such, it is assumed that the Project shall require approximately 39,600 gal/day to accommodate the domestic water requirements. Additional capacity will be required during the Spring, Summer and early Fall for irrigation. It is assumed that an additional 20% of the domestic water requirements will be needed to accommodate the irrigation requirements of the Project site. As such, the total water demand for the Project site is assumed to be 47,520 gallons/day during the summer months.

Hydrant flow tests have not yet been performed, but due to the proximity to the transmission main, it is assumed that there is sufficient pressure and flow to accommodate the Project.

3. Fire Flow

The Project will include fully sprinklered buildings, fire hydrants and fire department connections as part of the development. The required fire-flow for the buildings will be calculated during the site plan development approval process, however it is estimated to be between 1,500 to 2,500 gallons per minute. Due to the proximity to the City transmission main, it is assumed that there is sufficient capacity to accommodate the fire flow without providing on-site water storage.

4. Electric, Gas and Telecommunications

As the Project site is situated on a major public roadway, there is direct access to electric, gas and telecommunications services along the Project site. Interconnections to the individual utilities will be handled by the utility purveyors. It is assumed there is sufficient capacity within each system to accommodate the proposed Project.

Section VI: Stormwater and Erosion & Sediment Control

1. NYSDEC Stormwater Regulations

Pursuant to the NYSDEC General Permit Requirements for Stormwater Discharges, the Project proposes greater than 1-acre disturbance, and is therefore subject to NYSDEC stormwater regulations. The Project shall be required to obtain the NYSDEC permit known as the General Permit 0-20-001.

The proposed Project is anticipated to require approximately 6-7 acres of disturbance and increase impervious coverage to approximately 4 acres. To mitigate the stormwater runoff impacts as a result of the Project, the site shall be designed to capture and treat the stormwater generated on-site.

Based on the topography and site conditions, it is assumed that the Project area located within the Town of Schaghticoke shall be used for stormwater management. The area lies adjacent to the Hudson River, where the post construction treatment system shall discharge directly. Pursuant to the *New York State Department of Conservation Stormwater Management Design Manual* (*NYSDEC SWDM*) several exemptions are provided for post construction stormwater management practices discharging directly into fifth order or larger streams, such as the Hudson River.

NYSDEC SWDM Section 4.5 which requires overbank flood control (Q_p) to attenuate the post development 10-year, 24-hour peak discharge rate to predevelopment rates,

> ***Section 4.5 – Overbank Flood Control Criteria (Q_p)***
>
> *The overbank flood control requirement (Qp) does not apply in certain conditions, including:*
>
> - *The site discharges directly tidal waters or fifth order (fifth downstream) or larger streams. Refer to Section 4.3 for instructions.*
> - *A downstream analysis reveals that overbank control is not needed (see section 4.10).*

Similarly *NYSDEC SWDM Section 4.6* requires extreme flood control (Q_f) storage to attenuate the post development 100-year, 24-hour peak discharge rate (Q_f) to predevelopment rates.

> ***Section 4.6 – Extreme Flood Control Criteria (Q_f)***
>
> *The 100-year storm control requirement can be waived if:*
>
> - *The site discharges directly tidal waters or fifth order (fifth downstream) or larger streams. Refer to Section 4.3 for instructions.*
> - *Development is prohibited within the ultimate 100-year floodplain*
> - *A downstream analysis reveals that 100-year control is not needed (see section 4.10)*

Stormwater management shall be designed to comply with the NYSDEC Storwmater Management regulations. The City has developed a Municipal Separate Storm Sewer System (MS4) program to comply with NYSDEC regulations, and therefore is considered an MS4 community.

2. Post Construction Stormwater Management

The Project proposes stormwater management in the form of detaining the stormwater runoff for a period of time to provide water quality volume (WQv) treatment. Green Infrastructure practices shall also be required to accommodate the Runoff Reduction Volume (RRv) for the site. Further development of the stormwater management facilities shall take place during the site plan development process.

It is anticipated that the stormwater runoff generated by this Project shall be collected by a series of drainage structures and be directed by a closed drainage system to the most northwestern area of the Project. This area shall contain the primary WQv practice. Runoff shall be discharged to the Hudson River psot treatment.

The Project owner shall be responsible for the long-term operation and maintenance of the stormwater management facility. This entails a legal agreement with the City to ensure the system is inspected and maintained on a regular schedule to ensure the stormwater treatment system is operating properly.

3. Erosion & Sediment Control

The Project site is subject to NYSDEC requirements for erosion and sediment control measures, to be implemented in accordance with the *New York State Standards and Specifications for Erosion and Sediment Control*, otherwise known as the "Blue Book". The City as an MS4 community shall oversee the implementation and maintenance of the erosion and sediment control (E&SC) measures. The E&SC measures are required to

be maintained throughout the duration of construction and are subject to weekly inspections by a qualified professional.

Section VII: School Enrollment and Impacts

1. School Enrollment Data

The New York State Education Department (NYSED) was consulted to obtain enrollment data for Elementary and Secondary schools. The Project site is located within the Lansingburgh Central School District, which has Turnpike Elementary School, Rensselaer Park Elementary School, Knickerback Middle School, and Lansingburgh High School. As of the date of this report, the 2019-2020 school year data was not yet available. Five years of data were obtained for each age group, segregated by Elementary, Middle School and High School. The age distribution per grade is shown in Table 20.

Table 20 – School Grade Distribution

Educational Stage	Grades
Elementary	1st - 5th
Middle School	6th - 8th
High School	9th – 12th

2. Existing School Data

Enrollment data from NYSED is summarized in Table 21.

Table 21 – School Enrollment Data

Record Year	Elementary School	Middle School	High School	Total
2014-2015	849	515	721	2085
2015-2016	840	484	735	2059
2016-2017	846	511	705	2062
2017-2018	883	500	694	2077
2018-2019	873	485	670	2029

Elementary and Middle School enrollment shows a generally steady enrollment of students over the last 5-6 years. There appears to be a small decline in High School students over the past two years.

3. Proposed Impacts

The Project proposes the addition of a maximum of 240 dwelling units, of which 50% shall be one-bedroom units. Utilizing a value of 12.5 school aged children for every 100 apartments and the conservative value of 240 dwelling units, a total of 30 students can be anticipated to be enrolled in the Lansingburgh Central School District. The Project anticipates a maximum of 30 students to be enrolled from the Second Avenue Apartments. It should be noted that the one-bedroom apartments are unlikely to house students and the resulting student load from the Project is likely to be further reduced.

The student distribution among the schools is assumed to average from Elementary to High School in a consistent manner. Elementary School aged children (1st through 5th grade) constitute 42% of students, Middle School aged children (6th through 8th grade) constitute 25% of students, and High School aged children (9th through 12th grade) constitute 33% of students.

It should be noted that the projected students that reside at the Second Avenue Apartments may not be new students but moving from one area within the school district to another. While this information cannot yet be estimated, it would result in reduced impacts to the district. Based on the data of the past 5 years, the fluctuations in enrollment numbers appear to allow for the potential addition of 30 students without impacting classrooms.

Section VIII: Project Development Analysis

1. Project Benefit, Improvements and Amenities

The Project proposes to construct a residential apartment complex in the City with direct access to the Hudson River. The Project satisfies the community needs outlined in the *Realize Troy 2018 Comprehensive Plan* and The Project creates housing diversity options by incorporating higher density development in an area that is generally developed, and provides public access to the waterfront. It is the intent of the Project to appeal to a variety of potential new residents, while also providing options for those looking to downsize while remaining in Troy.

As part of the Project develop, several improvements will be made to the site that will improve access to the Hudson River and improve pedestrian safety along Second Avenue. These items include:

Multi-Use Trail
- Direct Path from Second Avenue to Hudson River
- 10-feet wide; accommodates pedestrians, bicyclists, etc.
- Benches & Waste Receptacles
- Permanent Easement granted to City

Kayak Launch
- Publicly accessible from Multi-Use Trail or adjacent proposed parking area
- Maintained by Owner/Operator of Apartments
- Permanent Easement granted to City

Informational Kiosk
- Located Along Multi-Use Trail
- Improves safety and accessibility of Hudson River area

Sidewalks
- New sidewalk along Second Avenue
- Sidewalk will extend approximately 3,000 feet
- Will connect to 125th Street and extend beyond property to City Limits

Dock & Boat Slips
- Utilized for fishing (Accessible to Public)
- 40 Slips on Hudson River (Reserved for Residents)

As noted, a permanent easement will be granted to the City to maintain public access. In addition to the above improvements, a Clubhouse will be provided interior of one of the apartment buildings for exclusive use of the site residents. It is anticipated the clubhouse may include a common area, recreation room, fitness center etc.

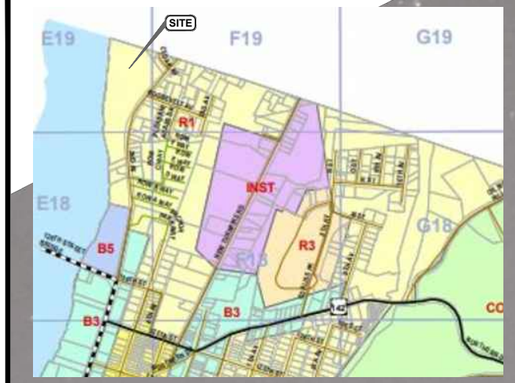
In addition to the above amenities, the Project will improve the County Sewer System by reducing CSO connections. This reduces peak loading to the sewer system and improves the health of the Hudson River.

2. Visual Impacts

The Project will be partially screened by existing and proposed vegetation, as well as the natural topography of the site. Several sections through the Project site were developed (by MJ) utilizing the topographic survey data and the conceptual plans. Refer to Figures 11 through 13.

To maximize the screening, the Project proposes below-ground parking, which lowers the overall height of the buildings.

CONCEPT PLAN DEVELOPED BY MJ ENGINEERING AND LAND SURVEYING, P.C. INCLUDED WITHIN THIS REPORT WITH THE APPLICANT'S AUTHORIZATION AS A REFERENCE ONLY.



ZONING MAP

SITE INFORMATION

	EXISTING ZONING R-1	PROPOSED ZONING PDD
MINIMUM LOT AREA	7,200 SF	10± AC (WITHIN CITY OF TROY)
MAXIMUM DENSITY	5.5 UNITS/AC	25 UNITS/AC
MAXIMUM LOT COVERAGE	40%	20%
MAX. BUILDING HEIGHT	25 FT	60 FT
SETBACK REQUIREMENTS		
FRONT BLDG. SETBACK	25' MIN	30' (STREET SIDE)
SIDE BLDG. SETBACK	10' MIN EACH SIDE	30'
REAR BLDG. SETBACK	30' MIN	50' (WATER SIDE)
PARKING		
PROPOSED	1-2 SPACES/UNIT	1.5 SPACES/UNIT GARAGE PARKING: 178 SPACES SURFACE PARKING: 175 SPACES (INCLUDING 12 ADA SPACES)
LAND USE		MULTI-FAMILY RESIDENTIAL

SUBMITTAL / REVISIONS

No.	DATE	DESCRIPTION	BY	REVIEWED BY	DATE

PROJ. MANAGER	JWE
CHIEF DESIGNER	JWE
DESIGNED BY	JWE
DRAWN BY	JWE
CHECKED BY	-

SEAL

DRAFT

Engineering and Land Surveying, P.C.
1533 Crescent Road - Clifton Park, NY 12065

TROY SECOND AVE

CONCEPT PLAN #1

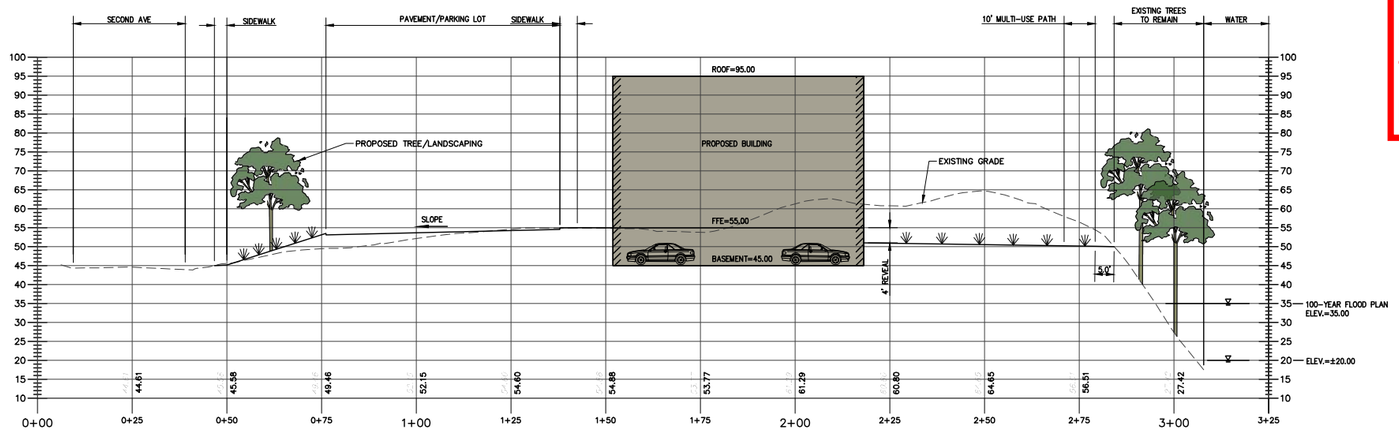
KEVIN VANDENBURGH

CITY OF TROY AND TOWN OF SCHAGHTICOKE NEW YORK

SCALE	1" = 50'
CONTRACT No.	-
MJ PROJ. No.	972.44
DATE	AUGUST 2020

C-1

CONCEPT PLAN AND PROFILES DEVELOPED BY MJ ENGINEERING AND LAND SURVEYING, P.C. INCLUDED WITHIN THIS REPORT WITH THE APPLICANT'S AUTHORIZATION AS A REFERENCE ONLY.



SECTION A-A

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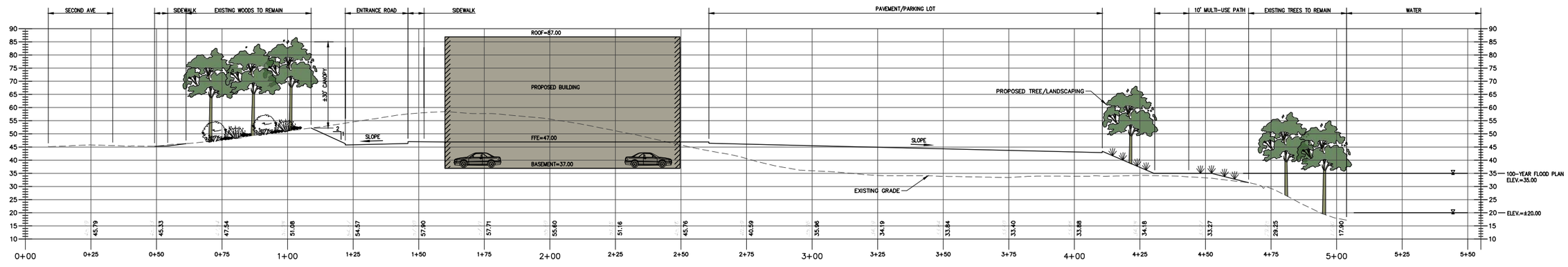
SCALE(VERT): 1



SECTION B-B

SCALE(HOR): 1
SCALE(VERT): 1

20□ 10□ 0 20□

SUBMITTAL □REVISIONS

No.	DATE	DESCRIPTION	BY	REVIEWED BY□	DATE

PROJ. MANAGER□	JWE
CHIEF DESIGNER□	JWE
DESIGNED BY□	JWE
DRAWN BY□	JWE
CHECKED BY□	-

SEAL

DRAFT

En□ineerin□ and
Land Surve□in□, P.C.
1533 Crescent Road - Cli□ton Par□, NY 12065

TROY SECOND AVE

PROFILES

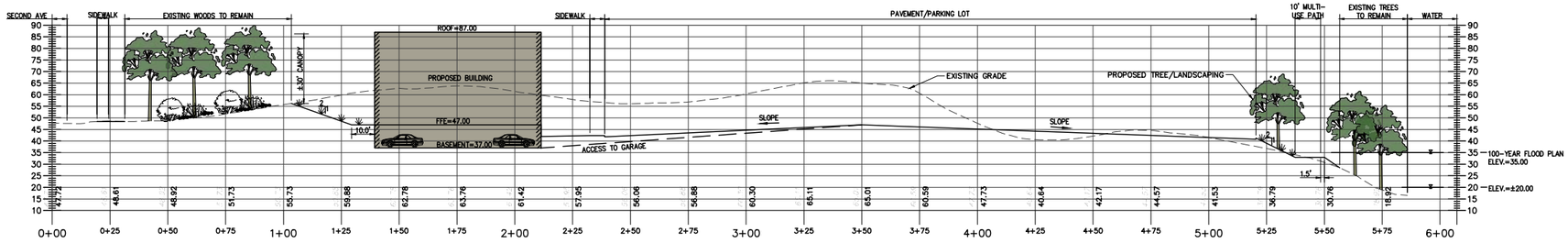
KEVIN VANDENBURGH

CITY OF TROY AND TOWN OF SCHAGHTICOKE NEW YORK

SCALE□1" □ 20□
CONTRACT No.□-
MJ PROJ. No.□972.44
DATE□AUGUST 2020

C-1

CONCEPT PLAN AND PROFILES DEVELOPED BY MJ ENGINEERING AND LAND SURVEYING, P.C. INCLUDED WITHIN THIS REPORT WITH THE APPLICANT'S AUTHORIZATION AS A REFERENCE ONLY.



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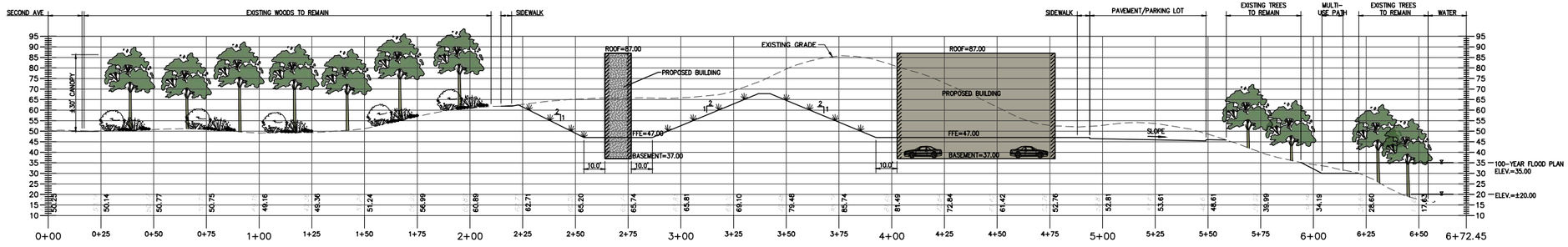


SECTION D-D
SCALE(HOR): 1
SCALE(VERT): 1

30□ 15□ 0 30□

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, □I.E.□ ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND□OR REGULATIONS AND IS A CLASS "A" MISDEMEANOR.

SUBMITTAL □REVISIONS

No.	DATE	DESCRIPTION	BY	REVIEWED BY□	DATE

PROJ. MANAGER□	JWE
CHIEF DESIGNER□	JWE
DESIGNED BY□	JWE
DRAWN BY□	JWE
CHECKED BY□	-

SEAL

DRAFT

En□ineerin□ and Land Surve□in□, P.C.
1533 Crescent Road - Cli□ton Par□, NY 12065

TROY SECOND AVE

PROFILES

KEVIN VANDENBURGH

CITY OF TROY AND TOWN OF SCHAGHTICOKE NEW YORK

SCALE□1" □ 30□
CONTRACT No.□-
MJ PROJ. No.□972.44
DATE□AUGUST 2020

C-2

3. Alternatives to the Proposed Action

As previously discussed, the Project includes an alternative utilizing the existing zoning, whereby the site would be developed as a single-family residential subdivision. This alternative site layout (Figure 7) was developed (by MJ) utilizing the existing R-1 Zone bulk requirements discussed in Section III, as well as an analysis of nearby adjacent lots. Utilizing the R-1 Zoning criteria, 36 single-family lots may be developed on the Project site. Compared to the proposed Multifamily Apartment Project, this alternative would result in several notable impacts to the community and reduced benefits. The items include:

- Reduced Dwelling Units compared to the Multifamily Apartment.
- Reduced growth for the City.
- Decreased tax revenues.
- Increased site disturbance, no preserved open-space areas.
- Reduced vegetative cover.
- Increased roadway maintenance for City. The City would be responsible for long-term maintenance, regularly plowing and upkeep in a residential subdivision vs. privately maintained roads.
- Municipally maintained utilities and drainage systems vs. privately maintained utilities.
- No visual or vegetative buffers will be provided to adjacent residential lots.
- Greater impact on the Lansingburgh School District.
- No multi-use waterfront trails.
- No public access to waterfront.

A comparison of the development options is included in Table 22.

Table 22 – Development Alternatives Summary

Use	*Alternate Site Use Residential Subdivision*	*Option # 1 (Preferred Plan)*	*Option # 2*
Residential	36 lots	220 – 240 units	220 - 240 units
Density	3.6 units/acre	20 - 25 units/acre	20 - 25 units/acre
Building Coverage	±1 Acres	±1.6 Acres	±1.6 Acres
Building Height	35 ± FT	60± FT	60± FT
Woodland Removals	11.00 Acres	±8.5 Acres	±9 Acres
Woodland Remaining	0.00 Acres	±2.5 Acres	±2 Acres
Visual/Auditory Buffers	No	Yes	Yes
Waterfront View/Access to Residents	No	Yes	Yes
School Age Children*	33(1)	30(2)	30(2)
Roadways Maintained by City	2,000± LF	0 LF (Private)	0 LF (Private)
Drainage Systems Maintained by City	3,000± LF	0 LF (Private)	0 LF (Private)
Water & Sewer Maintained by City	2,000± LF	0 LF (Private)	0 LF (Private)
Parking	2 per unit	1.5 per unit	1.5 per unit
Building Setbacks (Front, Rear, Side)	25’ min. 30’ min. 10’ min each side	30’ min. (street side) 50’ min. (water side) 30’	30’ min. (street side) 50’ min. (water side) 30’

(1) Pursuant to Table ST-F1-2000. Average Number of Children per Family and Per Family with Children, by State, 2000 Census. New York State 0.90 average children under 18 per family.

(2) This was calculated at 12.5 school age children for every 100 apartments. Similar size projects and a 50/50 mix on 1 & 2 bedrooms has approximately 10 to 12 students (K-12) per 200 units.

4. Summary and Conclusions

The proposed Project includes the development of Multifamily Apartment buildings with approximately 220 to 240 dwelling units. As part of the Project, there are several notable improvements being made to the Project site, including a multi-use trail and public access to the Hudson River. A sidewalk will terminate beyond the site, connecting to the nearby grocery stores and improving access for existing residences along Second Avenue.

The Project results in minimal traffic loading impacts and will improve the public sewer system by disconnecting a portion of the CSO loads. As the Project includes private utilities and roadways, there is no additional maintenance required of the City. A large increase in tax revenue can be realized without the associated increase in infrastructure spending. While there will be some new students generated from the development, a reduction in total students is realized vs. the alternative single-family residential subdivision. When comparing the Project to the alternative single-family residential subdivision, it is clearly shown that the Project reduces the potential burden on the City.

The noted improvements and positive benefits provide significant value to the community and outweigh the minor Project impacts.

APPENDIX A – EXISTING SOILS

Existing Soils Map and Report

Hydrologic Soil Group—Rensselaer County, New York, and Saratoga County, New York
(Second Ave Apartments)

Map Scale: 1:5,140 if printed on B landscape (17" x 11") sheet.

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

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 Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

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 scales ranging from 1:15,800 to 1:24,000.

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: Rensselaer County, New York
Survey Area Data: Version 17, Jun 11, 2020

Soil Survey Area: Saratoga County, New York
Survey Area Data: Version 20, Jun 11, 2020

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Jul 1, 2014—Sep 22, 2017

MAP LEGEND

MAP INFORMATION

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Du	Dumps, landfill		2.8	1.0%
FlA	Fluvaquents-Udifluvents complex, 0 to 3 percent slopes	A/D	42.0	15.1%
HoB	Hoosic gravelly sandy loam, 3 to 8 percent slopes	A	24.6	8.9%
NaB	Nassau-Manlius complex, undulating	D	39.0	14.0%
NaC	Nassau-Manlius complex, rolling	D	18.4	6.6%
NrD	Nassau-Rock outcrop complex, hilly		27.8	10.0%
W	Water		25.8	9.3%
Subtotals for Soil Survey Area			**180.4**	**64.9%**
Totals for Area of Interest			**277.9**	**100.0%**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BvC	Broadalbin-Manlius-Nassau, complex, rolling	C/D	10.0	3.6%
Fl	Fluvaqvents frequently flooded	A/D	2.2	0.8%
HuD	Hudson silt loam, hilly	D	2.9	1.0%
Ma	Madalin mucky silty clay loam	C/D	2.2	0.8%
Pv	Pits, sand and gravel		0.0	0.0%
RhA	Rhinebeck silt loam, 0 to 3 percent slopes	C/D	49.8	17.9%
RhB	Rhinebeck silt loam, 3 to 8 percent slopes	C/D	0.0	0.0%
Te	Teel silt loam	B/D	2.9	1.1%
W	Water		27.5	9.9%
Subtotals for Soil Survey Area			**97.5**	**35.1%**
Totals for Area of Interest			**277.9**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX B – FEMA MAPPING

FEMA Map Panel 3606770001B

KEY TO MAP

500-Year Flood Boundary	ZONE B
100-Year Flood Boundary	ZONE A1 DATE
Zone Designations* With Date of Identification e.g., 12/2/74	ZONE A5 DATE
100-Year Flood Boundary	ZONE B
500-Year Flood Boundary	
Base Flood Elevation Line With Elevation In Feet**	513
Base Flood Elevation In Feet Where Uniform Within Zone**	(EL 987)
Elevation Reference Mark	RM7 ×
River Mile	• M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
AO	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile, or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

For adjoining map panels, see separately printed Index To Map Panels.

INITIAL IDENTIFICATION:
APRIL 5, 1974

FLOOD HAZARD BOUNDARY MAP REVISIONS:
JULY 9, 1976

FLOOD INSURANCE RATE MAP EFFECTIVE:
MARCH 18, 1980

FLOOD INSURANCE RATE MAP REVISIONS:

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE date shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program at (800) 638-6620, or (800) 424-8872.

APPROXIMATE SCALE
400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
TROY, NEW YORK
RENSSELAER COUNTY

PANEL 1 OF 4
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
360677 0001 B

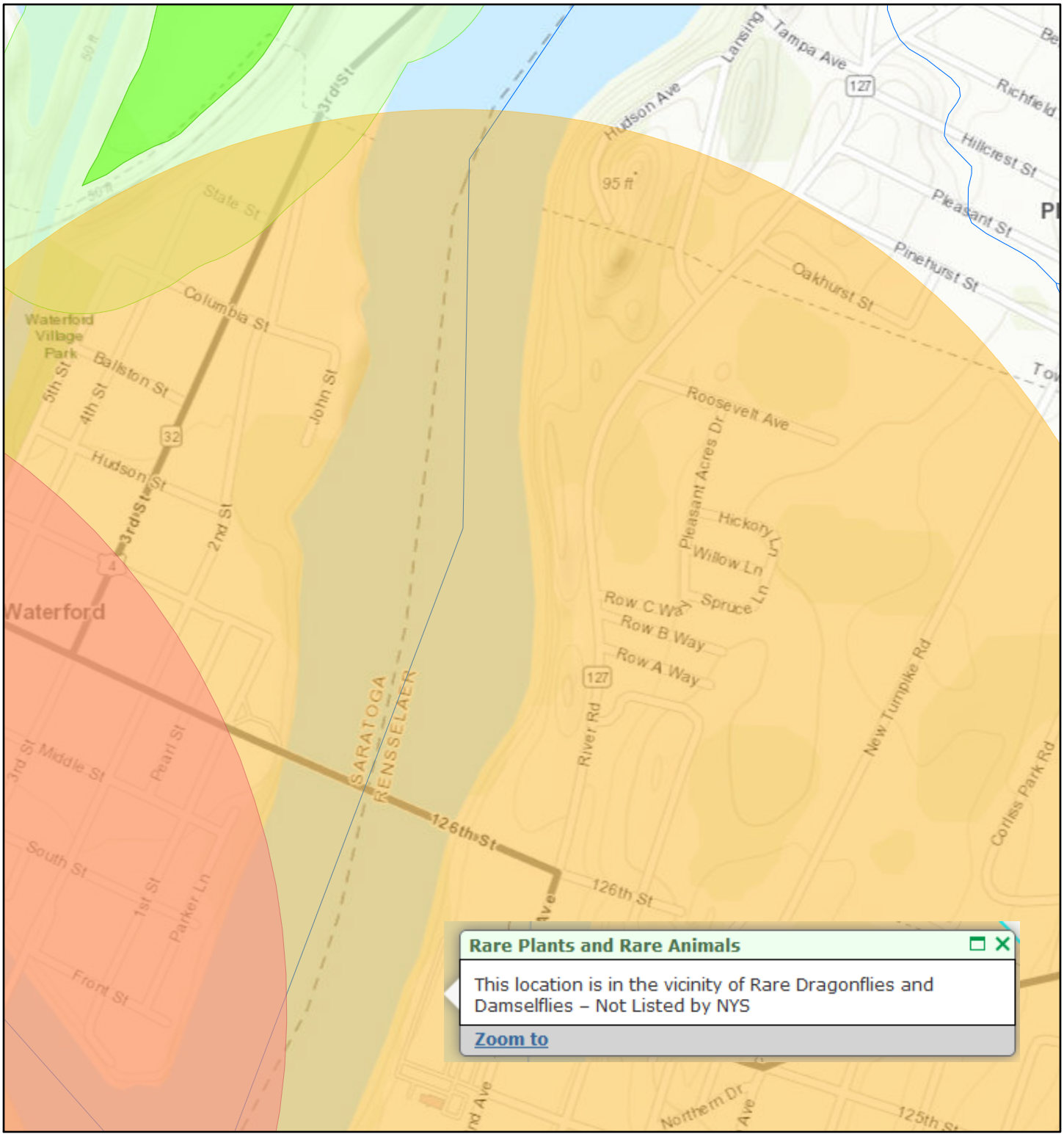
EFFECTIVE DATE:
MARCH 18, 1980

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

APPENDIX C – ENDANGERED SPECIES AND WATER RESOURCES

Environmental Resource Mapper

Second Avenue Apartments



January 19, 2021

1:9,028

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

NYS Department of Environmental Conservation
Not a legal document

APPENDIX D – ARCHAEOLOGICAL RESOURCES

Archaeological Survey IB/II by Hartgen

HARTGEN
archeological associates inc

PHASE IB/II ARCHEOLOGICAL SITE EVALUATION

Troy Starlight Development

2nd Avenue
City of Troy and Town of Schaghticoke
Rensselaer County, New York

HAA # 5470-41
OPRHP Not Yet Assigned

Submitted to:
Golub Properties of Watervliet, Inc.
461 Nott Street – MB 617
Schenectady, NY, 12308

Prepared by:
Hartgen Archeological Associates, Inc.

1744 Washington Avenue Ext.
Rensselaer, New York 12144
p +1 518 283 0534
f +1 518 283 6276
e hartgen@hartgen.com

www.hartgen.com

An ACRA Member Firm
www.acra-crm.org

April 2020

MANAGEMENT SUMMARY

SHPO Project Review Number: *Not Yet Assigned*
Involved State and Federal Agencies: *New York State Department of Environmental Conservation (NYSDEC)*
Phase of Survey: *Phase IB/II*

LOCATION INFORMATION

Municipality: *City of Troy and Town of Schaghticoke*
County: *Rensselaer County*

SURVEY AREA

Length: *1,440 feet (440 meters)*
Width: *560 feet (170 meters)*
Acres: *5.9 acres*

ARCHEOLOGICAL SURVEY OVERVIEW

Number and Interval of Shovel Tests: *65 at a 15 meter (50 foot) interval and 42 at a 7.5 meter (25 foot) interval for a total of 107 tests*
Number and Size of Units: *a total of 8 1x1 meter units*
Areas Raked and Surface Collected: *0.88 acres total with a 1.5 meter transect intervals*

RESULTS OF ARCHEOLOGICAL SURVEY

Number and Name of Precontact Sites Identified: *One - Dickerson Street Precontact Site (USN 08340.001736)*
Number and Name of Historic Sites Identified: *None*
Number and Name of Sites Recommended for Phase III or Avoidance: *One - Dickerson Street Precontact Site (USN 08340.001736)*

RESULTS OF ARCHEOLOGICAL SITE EVALUATION

Site Name and Site Number: *Dickerson Street Precontact Site (USN 08340.001736)*
Cultural Affiliation: *Precontact (Middle and Late Archaic)*
Site Size: *5.37 acres (21,723 m^2)*
Area of Surface Reconnaissance: *0.88 acres total with a 1.5 meter transect interval*
Number of Shovel Tests: *107*
Number of Units Excavated: *8*
Total Area Excavated: *8 square meters*
Number of Sites Recommended Eligible for National Register: *One*

RECOMMENDATIONS

The current APE contains the Dickerson Street Site, a Middle to Late Archaic quarry with multiple loci, representing a full range of extraction and production activities. The site has been determined to be National Register eligible. A Phase III investigation of portions of the site was completed in 2010. The current Study Area includes portions of the site that were not covered by Hartgen's earlier projects. The site has experienced minimal disturbance and demonstrates several criteria for integrity. Avoidance of the defined site area or additional Phase III Data Recovery is recommended.

Report Authors: *Bradley W. Russell, Ph.D.*
Date of Report: *April 16, 2020*

ABSTRACT

Hartgen Archeological Associates, Inc. (Hartgen) conducted a Phase IB/II archeological investigation for the proposed Troy Starlight Development (Project) located in the City of Troy and Town of Schaghticoke, Rensselaer County, New York. The Project requires approvals by New York State Department of Environmental Conservation (NYSDEC). The Project Area is located between 2nd Avenue and the Hudson River (Map 1). It begins north of Row C Way and ends south of Lansing Avenue. It straddles the border of the City of Troy and the Town of Schaghticoke. The development plan for the property has not been finalized. However, in generality, it will involve the construction of multiple unit residential buildings with associated driveways, parking and municipal utility connections. Plans will in part be based on avoidance areas defined by this and previous studies.

The area of potential effects (APE) includes all portions of the property that will be directly altered by the proposed undertaking. The APE encompasses ~9.75 acres total. However, it includes a roughly 4 acre area which was previously subjected to Phase I, II and III investigations and designated the Dickerson Street Precontact Site (USN 08340.001736). The site was determined to contain a mix of quarried outcrops, lithic workshops and camp locations. The survey area for the current study consists of previously undocumented areas within the broader APE and are located to the immediate north and south of the established Dickerson Street Precontact Site, which is believed to extend beyond the previously examined areas. It covers an area of approximately 5.75 acres.

La Porta's model outlines four zones that can be found in ancient quarry sites (La Porta 2000). These consist of Zones I through IV: extraction, milling, ore processing, and workshop zones (2000:12-13). All four of these zones are identifiable at the Dickerson Street Site. Extraction took place at several locations including outcrops located along River Road (presently or in the past), along the east side of a ridge at the southern end of the site and at outcrops present on the west side of ridges in the northern end of the site. These locations show evidence of the removal of material and in several cases contained large extraction hammerstones used in that removal. Milling took place in discrete locations in the southern end of the site, particularly in collection areas 7 and 8, which were marked by dense concentrations of early stage debitage consistent with the separation of useable ores from the surrounding matrix. Some milling activity was also mixed with ore processing in locations such as the workshop area in the southeast corner of the portion of the site investigate in 2008. Other workshop zones, specializing in mid to late stage manufacture of tools, were clustered in the floodplain along the banks of the Hudson.

The Dickerson Street Precontact Site has already been recommended as eligible for the National Register during Hartgen's initial 2008 study of the central portion of the site saying, "It is recommended that the Dickerson Street Site be considered National Register eligible under Criterion D as a site that has yielded or may be likely to yield, information important in history or prehistory." We concur with that recommendation for the whole of the expanded site as defined during the present study.

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PHASE I CULTURAL RESOURCES SURVEY

1 Introduction

Hartgen Archeological Associates, Inc. (Hartgen) conducted a Phase IB/II archeological investigation for the proposed Troy Starlight Development (Project) located in the City of Troy and Town of Schaghticoke, Rensselaer County, New York. The Project requires approvals by New York State Department of Environmental Conservation (NYSDEC).

This investigation was conducted to comply with Section 14.09 of the State Historic Preservation Act and will be reviewed by the New York State Office of Parks, Recreation and Historic Preservation (OPRHP). The investigation was conducted according to the New York Archaeological Council's *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections* (1994), which are endorsed by OPRHP. This report has been prepared according to OPRHP's *State Historic Preservation Office (SHPO) Phase I Archaeological Report Format Requirements* (2005).

The primary objective of this study was to delineate the boundaries of the site(s) so that appropriate avoidance measures can be determined. Our previous work at the Dickerson Street Site concluded:

> The shovel tests demonstrate that, although the artifact density within the Dickerson Street Site fluctuates, the site extends beyond the boundaries of the Study Area to the north and south and is bounded by the Hudson River on the west side. It also originally extended beyond the Study Area to the east, but has since been destroyed by the construction of River Road and likely significantly impacted if not completed destroyed in the vicinity of the houses and other development east of River Road. (Hartgen 2010a:22)

2 Project Information

2.1 Project Location

The Project Area is located between 2nd Avenue and the Hudson River (Map 1). It begins north of Row C Way and ends south of Lansing Avenue. It straddles the Border of the City of Troy and the Town of Schaghticoke.

2.2 Description of the Project

The development plan for the property has not been finalized. However, in generality, it will involve the construction of multiple unit residential buildings with associated driveways, parking and municipal utility connections. Plans will in part be based on avoidance areas defined by this and previous studies.

2.3 Description of the Area of Potential Effects (APE)

The area of potential effects (APE) includes all portions of the property that will be directly altered by the proposed undertaking. The APE encompasses ~9.75 acres total. However, it includes a roughly 4 acre area which was previously subjected to Phase I, II and III investigations and designated the Dickerson Street Precontact Site (USN 08340.001736). The site was determined to contain a mix of quarried outcrops, lithic workshops and camp locations. The survey area for the current study consists of previously undocumented areas within the broader APE and are located to the immediate north and south of the established Dickerson Street Precontact Site, which is believed to extend beyond the previously examined areas. It covers an area of approximately 5.75 acres.

Hartgen's earlier studies of the Dickerson Street Precontact Site (Hartgen Archeological Associates Inc. 2008, 2010a) were completed for the Hudson River PCB Superfund Water Line Project, which was located within

the Village and Town of Waterford and Town of Halfmoon, Saratoga County and the City of Troy, Rensselaer County. The project entailed the installation of a 4.3-mile (7 km) water main to provide the Towns of Waterford and Halfmoon with an alternative water supply during the removal of PCB-bearing sediments from the Hudson River upstream of these towns. A Phase IA/IB/II archeological investigation and site evaluation was completed for the project by HAA in June 2008. The study included a Phase IA literature review for the entire water line, Phase IB field reconnaissance in all appropriate locations along the water line, and Phase II site evaluations of two sites: the Dickerson Street Site and the Water Works Precontact Site (USN 09145.000747). The Phase III study completed in 2010 focused on a 0.5 acre APE for a staging area for directional drilling below the Hudson River. A second drilling location on the west bank of the river contained the Waterworks Precontact Site (USN 09145.000747) which was also investigated by a team from Hartgen (Hartgen Archeological Associates Inc. 2010b).

It should also be noted that a second site simply designated "chert quarries" (USN 08340.001092) in CRIS was initially reported by Karen Hartgen in 1992 as part of the study for the Charles Ellet Apartment Site Project. This should be considered the same as the Dickerson Street Precontact Site and is linked in CRIS although the system contains two distinct USNs and map markers.

According to La Porta's (2000:10-16) model of quarry development, quarries can be divided into various categories based on scale of activity. An "expression" indicates a prospect that may have been tested and demonstrates evidence of extraction during possibly a single episode. A "movement" is a small-scale quarry that may demonstrate division of tasks and specialized tools such as hammerstones. A "motion" is a large scale quarry with variety of quarrying tools and subdivision of tasks evident in the spatial organization of the site. A "trend" is a series of quarries along a strike (the compass direction of a bedded chert formation) (La Porta 2000:12). A group of trends in the same vicinity and within one area of similar geology is a "district." Based on this model, the Dickerson Street Site consists of an extensive movement or a limited motion within a district that extends from Lansingburgh to Pleasantdale.

3 Environmental Background

The environment of an area is significant for determining the sensitivity of the Project Area for archeological resources. Precontact and historic groups often favored level, well-drained areas near wetlands and waterways. Therefore, topography, proximity to wetlands, and soils are examined to determine if there are landforms in the Project Area that are more likely to contain archeological resources. In addition, bedrock formations may contain chert or other resources that may have been quarried by precontact groups. Soil conditions can provide a clue to past climatic conditions, as well as changes in local hydrology.

The development of the regional and local environment is essential to understanding the development of the Dickerson Street Site. In particular, two environmental conditions were most significant in making the site preferable for precontact habitation and use: proximity to the Hudson River and the existence of chert-bearing ridges of shale along the river. The formation of the river bed and topography within the site is primarily the result of the interaction of glaciers and the regional bedrock.

3.1 Present Land Use and Current Conditions

A site visit was conducted by Bradley Russell on December 16, 2019 to observe and photograph existing conditions within the Project Area. The parcel is bounded on the west by the Hudson River (Photo 1) and the east by 2nd Avenue (River Road). The majority of the Study Area remains wooded (Photo 2). A portion located in the previously studied APE contains a mowed lawn and a gravel drive/parking area. The topography is characterized by a series of ridges running north/south parallel to the river. The ridges consist of chert bearing Mount Merino formation shale and Cohoes Melange, with a number of outcrops exposed at the surface (Photo 3). In the southern portion of the property, the river's edge is marked by a sheer, shale cliff face. A relatively level flood plain runs along the river in the northern portion of the Project area. The geomorphology suggests that this portion of the site has been above flood height for several thousand years, allowing it to be a suitable

camp location for Native Americans drawn to the location by the available lithic raw material. Residential properties bound the parcel on its north and south sides resulting in some disturbance and accumulation of litter and other discarded material (Photo 4). The most significant of the disturbance is along the northwestern side of the property where a road bed and parking area have been built resulting in a mix of filling and grading. The northeastern portion of the property contains shallow standing water. Evidence of blasting associated with the construction of 2nd Avenue (River Road) is found in the exposed bedrock along the east side of the Project Area.

3.2 Soils

Soil surveys provide a general characterization of the types and depth of soils that are found in an area. This information is an important factor in determining the appropriate methodology if and when a field study is recommended. Much of the following information was provided by Dr. David DeSimone, who has extensively studied the geomorphology of the upper Hudson Valley and was the consulting geomorphologist for Hartgen's earlier investigations of the Dickerson Street archeological site (Hartgen Archeological Associates Inc. 2010a).

The surficial geology of the Hudson Valley is dominated by landforms and deposits that resulted from continental glaciations which occurred numerous times throughout the Pleistocene Epoch of the last 1.7 million years. The current distribution of glacial sediments is the result of the most recent cycle of glacial advance and retreat of the Hudson-Champlain ice lobe. This ice overrode the region before 25,000 years ago and retreated from the project area approximately 13,700 years ago. As the ice lobe retreated from the Hudson-Champlain lowlands a series of glacial lakes fronted the margin of the glacier. Fine grained lake silt-clay was deposited in the deeper and quiet waters of the lakes while sand was deposited along the wave impacted shores of the lakes. Deltas were deposited by tributary streams emptying into the lakes from the uplands and also from melt-water rivers flowing from beneath the glacier directly into the lakes. Researchers have recognized the importance of major floods of glacial lake discharge that initially came down the Mohawk Valley and formed the Cohoes Falls and other prominent features of our regional landscape (DeSimone, et al. 2008). The exposed bedrock in the project area dates from these flood discharges that stripped the glacial deposits off of the bedrock and defined the present day channels of both the Mohawk and Hudson Rivers.

Soil surveys for Rensselaer County (1988) and Saratoga County (2004) provide a framework for understanding and predicting soils encountered within one meter (3.3 ft) of the ground surface. Soil maps are reasonably reliable in the recognition of "C" horizon or parent material sediment texture. However, these same maps are somewhat unreliable in the interpretation of the origin of the parent material. To provide a context for the different soil types, a review of the mapped soils units, as defined by the soil survey are included below. Following which a more detailed description of the soil development within particular portions of the project area is provided. According to the Natural Resources Conservation Service soil surveys of Rensselaer County (2006 and 2007), soils in the Dickerson Street site consist of the Nassau-Rock outcrop complex, which is comprised of silt loam formed primarily by the disintegration of shale bedrock. Shale is a fissile rock formed in fine silt and clay settling out of deep water. It tends to fracture along thin laminations, resulting in silty loam soils containing large amounts of shale rubble. It is described in detail below in Table 1. The soil description includes the name and symbol, soil horizon and depth, texture and inclusions, slope, drainage characteristics, and the general landform on which they occur (USDA 2006b and 2006c).

Table 1. Soils in Project Area

Symbol	Name	Depth	Textures	Slope	Drainage	Landform
NrD	Nassau-Rock outcrop complex, hilly	0 to 7 inches 7 to 15 inches 15 to 19 inches	very channery silt loam very channery loam unweathered bedrock	25-35%	Somewhat excessively drained	Benches, ridges, till plains

3.3 Bedrock Geology

The bedrock of the Dickerson Street Site and vicinity is very complex and consists of the Cohoes Melange, a 20-kilometer (12.5-mile) wide band of rock that was highly deformed during the Taconic Orogeny. In older literature, the shale of the Hudson Valley is classified as the Normanskill/Canajoharie Formation (Fisher, et al. 1970). More recent research has demonstrated that this shale consists of several formations including the Utica shale and Schenectady Formation shale of the Proto North American plate and the Mount Merino shale associated with the Taconic Arc (Kidd, et al. 1995). It is the Mount Merino shale that contains the green chert identified along the bedrock ridges in the vicinity of the Dickerson Street Site, and therefore, this report refers to the shale as Mount Merino shale within the Cohoes Melange.

The Cohoes Melange formed toward the end of the Ordovician Age when the Iapetus Ocean closed. The pressures of the colliding plates caused the deformation of many of the bedrock formations and the juxtaposition of numerous types of bedrock formed in different environments within the Cohoes Melange. This juxtaposition of bedrock from different sources is evident within the Dickerson Street Site. Most of the bedrock observed within the Dickerson Site consists of Mount Merino formation chert-bearing shale. However, an outcrop of dolomitic sandstone was identified along the southwest ridge in the quarry workshop area. This sandstone was likely formed on the shelf or slop of the Taconic Allochthon and was juxtaposed with the deep water Mount Merino shale during the Taconic Orogeny's deformation and compression of the rocks of the Iapetus Ocean. As a result, rocks formed in very different environments and with different compositions and properties outcrop within 15 meters (50 ft.) of each other within the Cohoes Melange of the Dickerson Street Site.

The Cambrian- and Ordovician-age (570 to 505 and 505 to 436 million years ago) cherts of New York are relatively free of fossils and are generally found in formations of shale and argillite such as the Normanskill/Canajoharie and Mount Merino formations. Cherts bedded in shale and slate are typically thought to have formed in deep ocean deposits near volcanically active faults between continental plates. Some researchers theorize that these cherts formed directly from volcanic sediments under conditions of high pressure and dynamic temperature and that silica-secreting organisms were not involved (Luedtke 1992). This theory accounts for the lack of fossils in these cherts. The chert-bearing shale in the project area east of the Hudson River consists of Ordovician-age (505 to 436 million years ago) bedrock. The chert in this bedrock was formed in a deep ocean environment and does not include fossils. The chert within the formation ranges in quality from true chert to siliceous shale, or shale that has a high silica content and has similar properties to chert but is generally softer and grainier.

3.4 Physiography and Hydrology

Steeply sloped areas are considered largely unsuitable for human occupation. As such, the standards for archeological fieldwork in New York State generally exclude areas with a slope in excess of 12% from archeological testing (NYAC 1994). Exceptions to this rule include steep areas with bedrock outcrops, overhangs, and large boulders that may have been used by precontact people as quarries or rock-shelters. Such areas may still warrant a systematic field examination.

During the early Holocene, the Dickerson Street Site was located within a series of ridges bordered on the west by the Hudson River. These ridges were comprised of Mount Merino shale and other rocks of the Cohoes Melange. The chert within the shale and other types of bedrock such as the dolomite found within the Dickerson Street Site were more resistant to glacial and post glacial erosion, resulting in the preservation of the ridges as the surrounding shale was eroded.

The USDA soil survey of Rensselaer County (2006) does not include the floodplain located within the Dickerson Street Site. This area was likely overlooked and simply grouped with the surrounding Nassau rock outcrop during the soil survey mapping due to its small size. The floodplain was formed during the early to mid-Holocene and consists of a massive deposit of fine sand, very fine sand, silt, and minor clay. The flooding

may have begun during the early Holocene and ceased at least 3,900 years ago based on the finding of a Sylvan Stemmed projectile point (2400 to 1900 B.C.) within the A horizon developed above the massive silt deposit (Funk 1976:250). No evidence of cultural horizons such as A horizon development or artifacts were found deeper than one meter (3.3 ft.) during the archeological investigations, demonstrating that the site was occupied after flooding ceased. The cessation of flooding within the Dickerson Street Site may have been a result of isostatic rebound, which exerted a significant effect upon topographic development until the mid-Holocene and is still evident today in some areas. Though it has not been fully studied, there is evidence that terrain was affected disproportionately and that drainage and alluviation patterns were altered during isostatic rebound.

The location of the Project Area just one kilometer to the north of the confluence of the Hudson and Mohawk Rivers would have placed it at a key transport route for the native peoples of the area, allowing efficient canoe travel to the north, south and west. The waterways would have provided a variety of resources such as fish, waterfowl and beaver. In fact, all three were observed during our work at the site. Combined with the presence of available lithic raw materials, the location has very high Precontact sensitivity.

4 Previous Studies of the Dickerson Street Precontact Site

Phase IB/II investigation (Hartgen Archeological Associates Inc. 2008) of the Dickerson Street Precontact Site (USN 08340.001736) involved the hand excavation of 166 shovel tests and the mechanical excavation of four trenches totaling 62 meters (207 feet) in length and roughly 1 meter wide. The survey included a mix of 15 meter (50 foot) and 7.5 meter (25 foot) interval shovel tests.

Researchers divided the site into five distinct environmental zones (Southwest Ridge, Chert Workshop and Quarry, Floodplain, Northeast Ridge and East Swale) based on the topography and results of shovel tests. The Southwest Ridge contains exposed bedrock outcrops along its east side. Two depressions below the outcrops indicated possible chert extraction near tests 2 and 19. The Chert Quarry and Workshop extended north and east from these outcrops near Second Avenue (River Road). Tests from the area (STPs 1, 25, 27 and 47) produced between 100 and 277 lithic artifacts each. STP 1 contained remains representing several stages in the quarrying and reduction sequence from extraction to the production of preforms. The Floodplain located along the river contained the highest density of materials anywhere in the Project Area. The density was highest close to the shoreline and dropped moving to the east away from the water. The presence of numerous thinning and trim flakes from the area suggest mid to late stage production. The area also contained an abundance of fire-cracked rock indicating the possible presence of undiscovered hearths. The Floodplain was divided into a north and south section by the excavation of a modern sewer ditch draining into the Hudson. The two lowest density areas were the Northeast Ridge and the East Swale (erroneously referred to as the West Swale in the 2008 report text). The Northeast ridge is located east of the Floodplain and north of the Chert Workshop and Quarry. It contained no surface outcrops and was more exposed to the elements than other areas of the site. The East Swale contained some standing water and was likely wet, possibly seasonally inundated in the past accounting for limited finds.

The four backhoe trenches excavated during the investigation were divided between the high density flood plain area and an area of disturbance associated with a deeply buried sewer line running from southeast to northwest across the Study Area. Trenches 1 and 2 were excavated to provide data concerning the stratigraphy of the floodplain and to determine the depth of archeological deposits. Trench 1 revealed that the greatest density of artifacts occurred around the interface between level III, a dark brown, shale rubble colluvium and Level IV, a yellowish brown, silt alluvium. Both were covered by a roughly 50 centimeter deep layer of dark yellowish brown, clay topsoil. Trench 1 produced only 20 Precontact artifacts. There were only a few of each artifact subtype and the artifacts were not in usual proportions, demonstrating that Trench 1 was likely on the periphery of a larger deposit and not in the immediate vicinity of a lithic workstation or significant activity area. Interestingly, most of the debitage consisted of siliceous shale with only two chert artifacts.

784 artifacts were recovered from Trench 2. These included Late Archaic Brewerton and Lamoka projectile points from the Vosburg Complex (3,400 to 2,400 B.C.) and the Sylvan Lake Complex (2,400 to 1,900 B.C.) respectively (later reclassified see below). Most of the artifacts from Trench 2 were recovered from Level 1 topsoil and the very top of Level 2 alluvium, none deeper than 50 centimeters. The datable points were recovered from the interface of the two levels, indicating that the alluvial deposit developed in the early Holocene and that no artifacts would be present below 1 meter depth.

Trenches 3 and 4 were excavated across the route of the 1930's sewer pipeline to determine the boundaries of the associated soil disturbance. Results indicated that the disturbance ranged between 5 (Trench 1) and 9 meters (Trench 2) wide.

In total, the Phase IB work produced 3,990 artifacts suggesting that the site was divided into several distinct functional areas, with quarrying, milling, reduction/preform production and late stage lithic production which was associated with a riverside alluvial floodplain. Diagnostic points indicated that the site dated to the Late Archaic Period with examples of projectile points representing the Vosburg Complex (3,400 to 2,400 B.C.) and the Sylvan Lake Complex (2,400 to 1,900 B.C.). It was shown that the site extended from the River in the west to 2nd Avenue (River Road) in the east. However, it was not possible to define boundaries in the north or south because the deposits extended beyond the Study Area. It was determined that the site was National Register Eligible under Criterion D and was likely to yield information important to history or prehistory and met all seven aspects of integrity. It was recommended that Phase III Data Retrieval be conducted on any areas to be impacted by planned horizontal drilling operation.

Phase III study the Dickerson Street Precontact Site (Hartgen Archeological Associates Inc. 2010a) was restricted to areas that would be directly impacted by the planned horizontal drilling operation. It involved surface collection (following brush removal and surface exposure), the excavation of an additional 87 shovel tests (producing 253 tests total), and the excavation of 20 units. 15 of the units were located within the Phase II APE. With EPA approval, 5 additional tests were located in the area of the previously identified quarry and workshop to further clarify its structure and function. Specialized analysis included thin section analysis to identify raw materials being exploited and compare them to three other local quarry sites. Two projectile points were analyzed for the presence of residues to determine if and how they were used prior to discard. Pollen and phytolith analysis was used to reconstruct past environmental conditional at the site. Finally, samples of fire-cracked rock (FCR) were tested for the presence of organic residues. Taken together with the results of previous studies, a total of 6,721 precontact artifacts were collected from the Dickerson Street Site. Results of the study incorporated findings from all three phases of investigation.

4.1 Artifact Analysis

The thousands of recovered artifacts were analyzed to fully understand the extraction and production processes taking place at the Dickerson Street Site. Classifications for the lithic materials were based on widely accepted approaches (Andrefsky 1998; La Porta 2000, 2006; Odell 1982, 2004; Whittaker 1994) and considerations specific to the Dickerson Street Site. The collection was divided into five main artifact types as shown in Table 2.

Table 2. Artifact Types

Type	Count
chipped stone tool	41
debitage	6,175
fire-cracked rock	481
rough stone tool	21
projectile point	3
Total	**6,721**

The five artifact types were further divided into 25 subtypes. Since the Dickerson Street Site provides the rare opportunity to study the results of the stone tool manufacturing process from start to finish, the subtypes in Table 3 are in the order that they would usually be used or produced during the stone tool production process.

Table 3. Artifact Types and Subtypes

Type	Subtype	Count	Percentage of Type*
rough stone tool	extraction hammerstone	3	14%
	hammerstone	17	81%
	wedge	1	5%
debitage	gangue	554	9%
	shatter	1,707	28%
	block	401	6%
	core	69	1%
	exhausted core	11	0%
	flake	39	1%
	quarry flake	412	7%
	block flake	399	6%
	thinning flake	1,977	32%
	trim	564	9%
	bifacial thinning flake	42	1%
chipped stone tool	retouched block	2	4%
	retouched flake	5	11%
	biface, stage 1	14	31%
	biface, stage 2	6	16%
	biface, stage 3	6	11%
	biface, fragment	7	16%
	scraper	1	2%
projectile point	Sylvan Stemmed	1	2%
	stage 2	1	2%
	untyped	1	2%
fire-cracked rock		481	100%
Total		6,721	
*Projectile points are included with chipped stone tools in percentage calculations			

As with almost all precontact sites, the most common type was debitage, which consists of byproducts of the tool manufacture process consisting primarily of flakes. The second most frequent type was fire-cracked rock. The rarest types were projectile points, followed by rough stone tools and then chipped stone tools.

The combined results produced a detailed picture of quarrying and workshop activities across the study area which was divided into five distinct zones as discussed above. The combined data indicate that the strategically located site was exploited for Mount Merino chert (along with lower quality siliceous shale) and fine grained dolomite during the late Archaic Period. Both materials were quarried, refined and worked into finished tools at a mix of quarry and workshop locations across the site. The thin sections from the collection demonstrate that the site is unique in that it contains bedrock formed at different locations within the Iapetus Ocean that was subsequently brought together during the Taconic Orogeny. Native American quarriers and flintknappers at the site used both the chert of the deep-water Mount Merino shale formation and fine-grained dolomite formed from sandstone of a shallower shelf or slope environment as raw material for stone tool manufacture. Some Onondaga and Helderberg Formations chert was present but likely just from retouch and sharpening of tools made elsewhere. For geographical reasons, it seems likely that Mount Merino quarries in river valleys may have been preferable to Native Americans for their convenience and relative comfort. However, Onondaga

cherts were widely used and it was obvious that precontact people found it important to seek quarries of this material in the mountains.

4.2 Environmental Reconstruction

Pollen, phytolith, and organic residue identifications demonstrate that the environment of the flood plain was significantly different when it was first occupied compared to the modern environment. During the Late Archaic period, the flood plain was likely more open and contained more grasses and shrubs. A greater abundance of wetland vegetation was present. There is evidence of cattail and wild rice in the area at that time. These plants may have flourished wet portions of the floodplain such as the backswamp, where the current was much less than in the river channel. It is likely that these resources would have been used by precontact occupants of the site for food and basketry. Additionally, organic residues found on fire-cracked rock suggest use of pokeweed or other leaves, and tobacco, which may also be a modern contaminant. The fire-cracked rock samples each had residues of deteriorated cellulose from plant processing.

5 Background

The following summarizes the available site information prior to the current Phase IB/II investigations.

Table 4. Summary of archeological site information collected during the Phase I survey

Characteristic	**Site information**
OPRHP Site No.	08340.001736
Site Name	Dickerson Street Precontact
Description	The Dickerson Street Site is located on the east shore of the Hudson River on a series of ridges of chert-bearing Mount Merino shale and other rocks of the Cohoes Melange. Several precontact chert quarry sites have been identified in the vicinity. The Dickerson Street Site consists of a quarry and workshop area on one of the elevated ridges and a flood plain with evidence of camps. Three bedrock outcrops with two types of lithic ore were present at the site. The lithic ores consisted of chert and a fine crystallized dolomite that demonstrated conchoidal fracture and was worked extensively in the surrounding workshop. Artifacts collected from the workshop consisted of quarry tools such as a wedge and hammerstones. Chert cores and early stage bifaces were also common. Near the workshop was the relatively sheltered floodplain located between two ridges and the Hudson River. Late Archaic projectile points found near the surface indicate that the floodplain was formed over 4,500 years ago, and geomorphological evidence suggests that the precontact occupation occurred almost entirely after the floodplain was formed. In addition to projectile points and other tools, large quantities of debitage and fire-cracked rock were collected from excavations on the floodplain. These artifacts suggest that once cores and flake blanks were produced in the quarry workshop nearby, they were transported to the relatively sheltered camps on the floodplain to be made into finished tools. The Dickerson Street Site provides the opportunity to study the entire process of stone tool production from its initial states in the quarry workshop to the formal states in the floodplain camps.
Date	A Lamoka projectile point diagnostic of the Sylvan Lake Complex of the Late Archaic Period was identified at the site. The site was likely occupied at other times as well.
Function	Quarry, lithic workshop and temporary camp(s)
Size	5.37 Acres (21,723 m^2)
Location	NAD 83, UTM Zone 18, 608696 Easting, 4738688 Northing

6 Archeological Site Evaluation

6.1 Methodology

6.1.1 Shovel Testing

Our initial testing involved a 15 meter regular interval grid across all portions of the study area that were feasible for testing. Certain areas in the northern portion of the study were excluded based on standing water, steep slope or clear disturbance. Tests were excavated at a reduced interval of 7.5 meters (25 ft) within areas shown by the initial testing to contain archeological remains. Results of Phase IB testing indicated three specific areas that we deemed appropriate for close interval shovel testing. The first was on the relatively level flood plain along the Hudson River where initial testing revealed indications of lithic workshop activity. The second location chosen for close interval testing was a level area on top of a ridge showing evidence of extraction activity and later stage lithic tool production. The third area selected produced evidence of a historic midden deposit to the east of the largest ridge within the Study Area. All three of these areas were contained in the northern portion of the Study Area.

Each shovel test was 40 centimeters (16 in) in diameter. All excavated soil was passed through 0.25-inch hardware mesh and examined for both precontact (Native American) and historic artifacts. The stratigraphy of each test was recorded including the depth, Munsell color, soil description, and artifact content (Munsell Color 2000). The location of each shovel test was plotted on the project map. Test excavation was photographed (Photos 5-7).

6.1.2 Surface Collection

Eight areas (0.88 acres in total) were raked to remove dried leaves and light snow where present and a non-systematic sample of surface materials collected from each. Seven of the eight areas were positioned based on the presence of test that were positive for Precontact material and had scatters of surface material. Test Area #5 was selected because it was a slope below a linear shale outcrop with evidence of raw material extraction including a large hammer stone sitting directly on top of the outcrop. The area itself was not shovel tested because the slope made that work impractical and potentially unsafe.

Areas identified for surface collection were raked to remove leaf litter/snow and expose features and artifacts before the fieldwork began. Archeologists lined up at 1.5-meter (5-ft) intervals to walk the plowed areas. Precontact (Native American) artifacts and significant historic artifacts observed on the surface were collected from within numbered collection areas. All surface material was from areas 1-6. Areas 7 and 8 contained dense deposits of quarry flakes, block flakes and large shatter which was not collected. Instead it was cleared and photographed as it was felt that was the best way to characterize the nature of the material present. Each collection area was mapped using a Trimble Geo 7X GPS for inclusion in our maps. Surface collecting fieldwork was photographed (Photos 8-10).

6.1.3 Unit Excavation

Eight 1x1 meter units were excavated, six in the north portion of the Study area and two more in the south. Units #1 through 3 were all located in the floodplain in the north portion of the Study Area in a location with numerous positive shovel tests and abundant surface remains. Units #4 and 6 were located at the base of a slope descending west from the main bedrock outcrop in the north section of the Study Area. Unit #5 was located in a level area extending east from the top of the same bedrock. The area contained multiple positive shovel tests and a surface scatter. Unit #7 was located in a level area below a low ridge running parallel to the Hudson below two blocks of green Mount Merino chert located at the edge of the ridge. Unit #8 was located on top of the ridge on the east side of the chert finds. Both were located close to positive shovel tests containing Precontact materials.

Soil levels were excavated separately, and all excavated soil was passed through 0.25-inch hardware mesh and examined for both precontact (Native American) and historic artifacts. Soil depths, Munsell colors, textures,

artifact content, and other relevant observations were recorded (Munsell Color 2000). Profiles and plan views were drawn when appropriate. The location of each unit was mapped with a Trimble Geo 7X GPS and plotted on the project map. Unit excavation fieldwork and unit wall stratigraphy was mapped and photographed (Figures 1-8).

6.1.4 Artifacts and Laboratory

As general procedure, all precontact (Native American) cultural material identified during the fieldwork are collected. Significant historic artifacts such as glass, ceramics, food remains, hardware, and miscellaneous items are collected. Coal, ash, cinder, brick, and modern materials are noted. Any artifacts collected are placed in paper or plastic bags labeled by provenience and inventoried in a bag list. Bags are numbered in the field and transported to the Hartgen laboratory in the Town of North Greenbush, Rensselaer County, New York, for processing.

Shovel test records and other provenience information were entered into a Microsoft *Access* database (Appendix 1). Artifacts were cleaned and cataloged. Cataloging entailed entering artifact provenience information, counts, weights, and descriptive information into the database (Appendix 2).

6.2 Results

Phase IB archeological field reconnaissance and Phase II site evaluation were conducted between December 16, 2019 and January 3, 2020. The field crew consisted of Thomas Boyd, John Ham, Cynthia Jackson, Jamie Penk and Amy Wilson under the direction of Principal Investigator Bradley Russell, Ph.D.. The weather was a mix of late fall and early winter temperatures and precipitation. When work began, dry leaf litter covered the ground. It was covered in a light layer of snow which melted again toward the end of the work. The leaf litter was raked away to expose the surface for systematic collection. Overall, the weather did not negatively impact visibility, artifact recovery, etc.

A total of 107 shovel tests were excavated to an average depth of 35 centimeters during the combined Phase IB/II study. 65 of those tests were excavated in a regularly spaced 15 meter grid across the entire study area, these constituted the Phase IB portion of our work and guided later site evaluation work described below. The reminder of the shovel tests were placed to create a 7.5 meter, close interval grid in areas that the initial testing had produced positive tests and were part of the Phase II study of the site.

Testing confirmed our initial assumption that deposits related to the Dickerson Street Site extended beyond the previously studied central area of the APE. The clustering of positive tests in several areas suggested the presence of extraction/quarry areas, milling areas where chert ores were liberated from their surrounding shale matrix, and workshop areas where quarried material was crafted into finished tools. The workshop areas appear to have also functioned as temporary camps. Combined with previous Hartgen studies, this new data suggested a rather large, 5.37 acre site with multiple loci each serving distinct functions. See Table 5 for a summary of fieldwork conducted during the present study and Table 6 for a combined summary of all work from this and previous investigations.

Table 5. Summary of Phase II field investigations

Field method	Qty/Area	Rationale	Results
Shovel tests	107 tests	A 15 meter grid (50 foot) grid of shovel tests was utilized to initially characterize the distribution of archeological material within the Study Area. Additional close interval testing was conducted in three areas that were shown to have positive tests during the initial survey. The results of these tests served to guide our later placement of excavation units and surface collection activities.	6 shovel tests were positive for Historic remains. The majority of these tests were located directly to the east of the large ridge located in the north end of the APE. 32 shovel tests were positive for Precontact archeological material. Clustering of positive tests suggested several loci of activity and guided the placement of units.

Field method	Qty/Area	Rationale	Results
Surface collection	8 areas totaling 0.88 acres	Observation of the site conditions suggested that a larger sample of the archeological material present could be efficiently collected by removing the leaf litter and surface collecting areas where positive shovel tests clustered.	Collection produced a significantly expanded sample of the artifacts present at the site.
Units	8	Eight units were excavated to provide a larger sample and to provide more vertical control and a better understanding of the site stratigraphy.	Units provided more detailed information about site stratigraphy and a controlled sample of artifacts present at the site.

The findings of the Phase IB survey indicated that Phase II site evaluation would be appropriate and necessary to define the site's boundaries and chronology. This process involved excavation of the 42 close interval shovel tests described above in locations where the initial testing has produced clusters of precontact tests. That sample was further expanded by raking away leaf litter obscuring the ground surface and systematically walking and surface collecting 8 areas based on positive shovel tests and the presence of observable surface artifact scatters. In total, 0.88 acres were cleared and collected. Based on the results of the combined shovel testing and observation of the surface remains, eight locations were selected for placement of 1 by 1 meter excavation units. Three units (#'s 1-3) were placed in the flood plain running along the Hudson River. Two units (#'s 4 and 6) were placed at the base of a slope below an outcrop of shale and chert that showed evidence of having been quarried. One unit (# 5) was placed on a level area at that top of these outcrop. All six of these were located in the northern portion of the Study area. Two additional units were placed in the southern portion, one (# 8) on top of a low ridge where several large cobbles of green chert (Photo 14) were observed and one (# 7) in a flat area between the ridge and the steep drop off to the Hudson River below.

Table 6. Combined summary of all field investigations

	Site Area	Central (2010)					North (2020)	South (2020)					
		Phase IB/II	Phase III	Total	Area m2	Area ft2	Phase IB/II	Phase IB/II	Total	Area m2	Area ft2	Area Acres	Grand Total
Mechanical Excavation													
Backhoe Trenches		4		4	63	678							4
Hand Excavation													
Shovel Tests		166	87	253			88	19	107				360
Units			20	20	20		6	2	8	8	86		28
Surface Collections													
# of areas		12	32	44			5	3	8	3561	38330	0.88	

6.2.1 Site Boundaries within APE

By combining the results of the current study of the northern and southern portions of the APE and findings from Hartgen's previous investigations within the central portion of the Project Area (Table 6), we have been able to establish boundaries for the broader Precontact site and four distinct loci within it (Maps 3a and 3b). Those four loci reflect distinct activity areas related to extraction of raw material from chert bearing shale outcrops, the processing of the extracted ores to remove and discard unwanted matrix material and workshop areas where the high-graded ores were processed into finished tools. La Porta provides a description of major

task areas that are found within many quarries, especially within motions. These consist of Zones I through IV: extraction, milling, ore processing, and workshop zones (2000:12-13). The 2010 Hartgen study suggested that the Dickerson Street Site is somewhat less spatially segregated that the LaPorta model suggests, combining some milling and ore processing activities into the same areas. The conclusions of the 2010 study on the central area of the APE concluded:

> In contrast to LaPorta's four-zone model, the Dickerson Site could more easily be described in terms of three zones: 1) the zone of extraction where milling also occurred, 2) preliminary workshops where milling, ore processing, and the reduction of ore into manageable cores occurred, and 3) workshops where cores were chipped into finished tools.

However, the addition of the deposits of large early stage waste material encountered in Areas 7 and 8 conform well to LaPorta's Zone II milling area, bringing the site into closer conformity with the model.

- Zone I Extraction - In addition to the extraction zone previously identified along River Road at the southeast corner of the 2010 study area, new extractions areas were identified along the east side of collection area 6 in the south of the APE (Locus 1) and along a linear outcrop located at the top of a ridge running between collection areas 4 and 5 in the north (Locus 3) (Photo 11). While specific outcrops were not observed along the large ridge at the northern boundary. Finds from STPs 53 and 54 indicate the possibility of extraction along the west slope of the ridge. Survey of the ridge, the largest in the study area, was not systematic and was particularly difficult due to the heavy slope and vegetation.

- Zone II Milling - Deposits in surface collection areas 7 and 8 (Photos 12 and 13), located at the southern end of the APE contained almost exclusively large quarry flakes, and shatter consistent with milling of material most likely extracted from the previously identified extraction zone along River Road (much now likely destroyed by road construction, blasting, etc. documented during the 2010 study) and a ridge of usable material located along the eastern edge of collection area 6.

- Zone III Ore Processing Zone – The earlier 2010 study identified artifacts consistent with ore processing activity in what we are now calling Locus 2 (note that Locus 2 boundaries have been drawn to exclude areas of disturbance associated with a graded gravel parking area). The location also contained evidence of some milling activity.

- Zone IV Workshop – The 2010 study identified a workshop/campsite area on the floodplain along the shore of the Hudson (Locus 4). Our research shows that the area extends north along the river and taken together contains two areas that likely represent consecutive occupations at different points during the long use of the site as a quarry.

The survey also revealed the presence of an early 20th century dump immediately to the east of the large ridge at the very north end of the APE. It was revealed in remains recovered from STPs 40, 42, 102 and 104, which contained, among other items, a complete Brownatone hair dye (TPQ 1911) (Photo 15) and Mazola salad bottle (TPQ 1940). No associated features, foundations, etc. were located in the area. The small deposit does not have the potential to provide significant information about the past and did not warrant additional investigation (units or surface collection) beyond close interval tests used to establish its extent.

With regard to the vertical distribution of archeological material, our results conformed to the earlier studies finding that all remains were located in the first meter below the surface. Of the eight units excavated during the present study, none produced artifacts below 80 cm. See below for a more detailed discussion of site stratigraphy.

6.2.2 Site stratigraphy

A total of eight units were excavated and provide our best vertical control and information about site stratigraphy. The stratigraphy varied significantly across the site, particularly between the low lying flood plain

and areas on ridges. Units 1-3 were all located near the river, on the northern floodplain. They were our deepest units. Units 4 and 6 were located at the base of a ridge with a worked shale outcrop. Unit 5 was located on a level area at the top of that outcrop in very shallow soil. Units 7 and 8 were placed in the southern section of the APE immediately below and on top of a bedrock ridge running parallel to a steep drop off down to the Hudson River.

Northern Floodplain

Unit 1 was excavated to a depth of 1 meter in 8 arbitrary levels (Figure 1). It contained three distinct strata. The first was a dark, yellowish brown (10YR 4/4) silt loam organic layer measuring 16 cm deep which contained a mix of modern bottle glass, lithic flakes and fire-cracked rock. He second was an A Horizon of dark, yellowish brown (10YR 5/6) silt loam extending down to approximately 50 cm which contained FCR, lithic flakes and shatter. The subsoil was a light, yellowish brown (10YR 6/4) silt loam containing a small number of lithic flakes (near its top) that was excavated into sterile soil 1 meter below the surface.

Unit 2 was excavated to an average depth of 76 cm in 7 arbitrary levels (Figure 2). It contained two strata sloping down toward the west. The first was a very dark, greyish brown (2.5 YR 3/2) silt loam A Horizon containing a mix of modern material (bottle glass, metal and plastic) and lithic flakes. The subsoil is a light olive brown silt loam containing a biface, lithic flakes, shatter and fire-cracked rock. It was terminated at bedrock.

Unit 3 was excavated to a depth of 70 cm in 5 arbitrary levels (Figure 3). Its stratigraphy was similar to Unit 1 with a dark brown (10YR 3/3) A Horizon roughly 12 cm deep which contained a well preserved, intact Genesee point near the interface with the subsoil which was the same light, yellowish brown (10YR 6/4) silt loam seen before. It contained lithic flakes, shatter, and FCR which decreased in density until sterile soils between 50 and 70 CM led to the end of excavation.

Base of Northern Ridge

Unit 4 was excavated to an average depth of 80 cm in 6 arbitrary levels (Figure 4). Soils contained dense concentrations of fragmentary shale channery that has accumulated at the base of the ridge. The stratigraphy was somewhat more complex than seen along the river floodplain. We encountered 4 distinct strata. The uppermost was a very dark brown (10YR 2/2) silt loam containing historic ceramics, a lithic biface, flakes, a core, shatter and fire-cracked rock. It reached a maximum depth of 40 cm below the surface. Below that was a dark yellowish brown (10YR 4/4) silt loam with a great deal of channery, roughly 15 cm deep. It contained flakes and shatter. The third strata, present in the northeast corner of the units was a very dark brown (10YR 2/2) silt loam with channery with just three flakes. At the base of the unit was a layer of dark greyish brown channery silt loam that contained one flake near the top and became sterile, resulting in unit termination.

Unit 6 was placed farther north along the base of the same ridge as Unit 4 (Figure 6). It was excavated to a depth of 80 cm in 4 arbitrary levels. Three strata were identified. The upper strata contained very dark greyish brown (10YR 3/2) silt loam containing flakes, shatter and bottle glass. It was roughly 40 cm deep. The second strata was also 10YR 3/2 silt loam, with a depth of around 15 cm. But, it had a significant quantity of shale channery present. It contained lithic shatter and a single hammerstone. The lowest strata was a yellowish brown gravelly silt loam. It was sterile throughout leading to the termination of the unit.

Top of Northern Ridge

Unit 5 was a very shallow unit sitting just above a worked section of the exposed bedrock of the northern ridge (Figure 5). A large extraction hammer stone was found sitting at the top of the exposure and a significant surface scatter was present all around the unit's locations. It was excavated to bedrock, an average depth of 11.5 cm, in a single natural level. It consisted of black silt loam and contained lithic flakes and shatter.

Base of Southern Ridge

Unit 7 was placed just to the west of two large cobbles of green chert (Photo 14) visible on the surface of the southern ridge in surface collection area 6 (Figure 7). It was excavated to an average depth of 34.5 cm in two

arbitrary levels. It contained two strata. The first was a very dark brown (10YR 2/2) silt loam with channery with an average depth of around 15 cm. It contained no artifacts. The second strata was a light reddish brown (2.5YR 6/4) silt loam which contained a great deal of channery. It was excavated to sloping bedrock with a maximum depth of 56 cm and was also found to be sterile.

Top of Southern Ridge

Unit 8 was located to the east of the same green chert cobbles mentioned above and was excavated to an average depth of 61.5 cm in 3 arbitrary levels (Figure 8). It contained just a single strata, the same very dark brown (10YR 2/2) silt loam with channery seen at the bottom of the ridge. However, it proved to be heavily disturbed with precontact materials intermingled with historic and modern artifacts. The profile of the excavation showed a block of exposed bedrock which was once likely exposed before the disturbed material was piled up around it. The unit was abandoned once the extensive disturbance was understood. It is probably that the material was bulldozed onto and down the west slope of the ridge during construction of the home south of the APE. Further examination of the green chert cobbles showed them to be sitting on surface the disturbance, loosely imbedded and out of their original context.

6.2.3 Site Chronology

Despite the presence of a significant quantity of fire-cracked rock recovered from the combined projects, no intact hearths or other features were encountered that might have provided datable carbon samples. Therefore, the chronology for the Dickerson Precontact Site is based entirely on four diagnostic projectile points. Hartgen's previous studies varied in their interpretation of the points collected in their 2008 season. The investigators initially reported two Late Archaic points, a Brewerton from the Vosburg Complex (5,000 - 4,000 B.P.) and a Lamoka from the Sylvan Lake Complex (5,500 - 3,500 B.P.). A third untyped point was also recovered. The later 2010 analysis reclassified the first of these as simply an unfinished and therefore not diagnostic stage 2 point while reclassifying the Lamoka as a Late Archaic Sylvan Stemmed point. Therefore they assigned a Late Archaic date to the site, while noting that other occupations were possible. This survey produced three additional diagnostic points (Photo 15), all from Locus 4, the workshop/camp location on the river's northern floodplain. Unit Three produced a Middle Archaic Genesee point (4,900 - 3,800 B.P.) from approximately 20 cm below the surface near the subsoil interface. Surface collections from Area 3 produce two additional specimens not far from Unit three, a Late Archaic to Early Woodland Adena Point (3,500 - 1,300 B.P.) and a Middle Archaic Vosburg point (5,200 - 4,500 B.P.). Consequently, we can say that the deposits represent a multi-component site utilized in the Middle and Late Archaic periods, possibly into the Early Woodland. This may account for two distinct clusters of remains within Locus 4, the workshop/camp portion of the site.

6.2.4 Artifact Analysis

Rather than simply focus on the finds from the current project, it is more direct and more accurately describes the nature of the entire site to look at the combined results of the 2008, 2010 and the current project. All totals are broken down in Table 7 below. Taken together, the data indicate that the site was a quarry site that contains four specific loci of activity reflecting all four zones of quarry activity that were part of the La Porta model, zones of extraction, milling stations, ore processing stations and workshops (La Porta 2000). Diagnostic artifacts indicate that the quarry was in use during the Middle Archaic, Late Archaic and possibly the Early Woodland Period. The site has experienced very limited disturbance and retains key elements of site integrity and the potential to provide valuable information about the past which make it National Register Eligible as indicated in earlier reports and confirmed by this additional investigation.

In order to facilitate comparisons and provide a holistic picture of activities across the entire site, the current study followed the analytical methods and categories employed in the 2010 report. Five main types of artifacts were documented including: rough stone tools, debitage, chipped stone tools, projectile points and fire-cracked

rock. Those were further broken down into a number of subtypes in order to elucidate specific activities taking place across the site.

A total of 8,247 precontact artifacts have been collected from the Dickerson Street Site. As with almost all precontact sites, the most common type was debitage, which consists of byproducts of the tool manufacture process consisting primarily of flakes. The second most frequent type was fire-cracked rock. The rarest types were projectile points, followed by rough stone tools and then chipped stone tools.

Rough Stone Tools

Rough stone tools generally consist of cobbles or other stones made of materials other than chert. They are often selected for their shape, size, and other properties and used with little preparation. Whereas chert artifacts are typically categorized by the way the artifact was prepared before use, rough stone tools are typically categorized by use-wear, such as peck marks and pitting on hammer and anvilstones or polish on rough stone tools used for grinding. Rough stone tools are described first in this analysis because many of the rough stone tools found at the Dickerson Street Site were employed during the extraction of the lithic material from bedrock outcrops or the initial high-grading and reduction of the material into manageable pieces. All but one of the rough stone tools consist of hammerstones, or hard cobbles used as hammers to break lithic material into more manageable pieces. Hammerstones have damage such as pecking or flake scars on the striking surface. The other rough stone tool is a possible wedge used to focus the force of a hammerstone during the process of sizing blocks of ore.

A total of 34 rough stone tools were recovered during all stages of investigation at the Dickerson Street site. Six (18%) of those were large, heavy extraction hammerstones (Photos 17-19) used to dislodge ore and surrounding matrix from the various outcrops being exploited. They were, as would be expected, generally found in the vicinity of rock outcrops. The vast majority (79%) of the rough stone tool collection consisted of the smaller hammerstones (Photos 20-21) used to refine extracted ores and produce finished tools. These hammerstones were generally small enough to be wielded in one hand and were used to refine raw lithic material and during flintknapping. Hammerstones were disproportionately encountered in the workshop areas in the central portion of the site and in workshops in in Locus 4 floodplain. The latter were typically small examples suggesting more refined late stage production activities. A single wedge shaped piece of stone showing use wear was believed to have been used to focus the force of extraction blows and aid in widening cracks in the matrix.

Debitage

Debitage consists of the lithic byproducts of the stone tool production process. Debitage includes a wide variety of artifacts including waste from all stages of stone tool manufacture including extraction, high-grading, initial reduction, and finishing stages. The types of debitage found in an area are often the clearest indicators of the stages of tool production that took there. Following the progression of tool manufacture, this section describes the debitage subtypes produced during the extraction and beneficiation processes, and then the flakes produced during the flintknapping process.

The extraction and beneficiation (early stage) processes produce a large quantity of angular and irregular fragments of chert and surrounding matrix as the lithic material is broken from outcrops, separated from its matrix, and high-graded. The byproducts of these processes have been categorized into subtypes block, gangue, and shatter. The following subtype classifications were used for angular blocks of chert resulting from the initial stages of tool manufacture:

- **Block.** A piece of lithic material generally bounded by joint or cleavage planes, lacking flake scars, and containing at least one blank. A block consists of useable ore removed from an outcrop with no additional processing. In all, 440 blocks were recovered, representing 6% of the site's debitage.
- **Gangue.** A piece of lithic material with a length of four centimeters or greater, a thickness of one centimeter or greater, generally bounded by joint or cleavage planes, lacking flake scars, and not containing any blanks. Gangue consists of unusable ore. Gangue is typically removed from the outcrop to expose and access higher quality ore, or gangue may be attached to higher quality ore upon removal from the outcrops and detached at a later time (LaPorta 2000: Appendix 2-1). 697 pieces of gangue were recorded at the site, representing 9% of the debitage.
- **Shatter.** Small to medium angular pieces of lithic material less than four centimeters in any dimension produced during ore extraction or during bipolar percussion. Gangue denotes material in which the quality is too poor to produce a tool, and shatter consists of material that is too small to make a tool. Shatter was abundant at the site, with a total of 1815 pieces collected, 24% of all debitage.

Taken together these three subtype make up 39% of all debitage at the site, although that number may minimize its total representation as much of this material was simply documented in place through photos during the surface collection activities, particularly in collection areas 7 and 8. At many sites, it is not possible to be certain that each block, gangue, and shatter fragment were culturally generated. However, because of the massive floods from glacial lakes that swept through the valley at the end of the last ice age and carried away the soil and rocks excluding the largest cobbles from the Dickerson Street Site, it is likely that a higher percentage of the blocks, gangue, and shatter at the Dickerson Site is cultural compared to many other quarry sites (DeSimone, et al. 2008).

Flakes are fragments of stone removed from artifacts such as cores (mid stage) and bifaces by percussion or pressure (late stage). This process follows the extraction and high-grading process. Hand hammerstones, antler tines, and other materials are used to remove flakes from a piece strategically to form a tool. Flakes bear conchoidal fractures due to the fracturing properties of microcrystalline quartz. Presence of conchoidal fractures combined with provenience is generally strong evidence that a stone has been culturally modified.

Flakes typically have the following characteristics:

- **Striking platform.** The portion of the flake where force is applied during its removal. The striking platform is often a small flat surface roughly perpendicular to the overall planar surface of the flake.
- **Bulb of percussion.** A rounded protrusion that is often evident below the striking platform on the ventral side of a flake.
- **Flake scars.** Impressions from flake removal left on the material from which flakes were removed. Several types of flakes have flake scars on the dorsal side that resulted from flakes removed before the flake bearing the scars was struck.

Flakes are typically the most common artifacts found at an archeological site. Flakes from the Dickerson Street Site were cataloged within the following four categories. The categories are generally listed in the order that the flakes were created during the stone tool production process:

- **Quarry Flake.** A flake with a striking platform and bulb of percussion with a thickness of one centimeter or greater at the thickest point between the dorsal and ventral side. Quarry flakes are large flakes removed during the process of separating high-quality chert from lower quality material and reducing cores to manageable sizes. 488 quarry flakes were found at the Dickerson Street Site, 6% of the debitage collected (Photos 22-25). Although often quarry flakes are simply waste, several models of stone tool production techniques entail manufacturing bifaces from large flakes. Quarry flakes were typically large enough to make stone tools, and bifaces and cores at the site were formed by removing flakes from the ventral side of quarry flakes.

- **Block Flake.** A flake with a striking platform, bulb of percussion, rippled ventral side, and angular dorsal side lacking, or with few, flake scars. Block flakes are removed early in the process of refining a

core or blank to remove waste material and begin the reduction and thinning process. In all, 607 block flakes were identified at the Dickerson Street Site, 8% of the debitage collected.

- **Thinning Flake.** A flake with a striking platform, bulb of percussion, rippled ventral side, and flake scars on the dorsal side. As the name implies, it is typically removed to thin a chipped stone tool. With a count of 2,511, thinning flakes (Photos 26-28) were the most common artifact type at the Dickerson Street Site representing 33% of the debitage collected. However, this may be somewhat biased by the fact that thinning flakes have very clear attributes, making their identification as cultural more likely.

- **Trim Flake.** A flake equal to or less than 1.5 centimeters (0.6 in) that may have a striking platform and flake scars on the dorsal side. In all, 703 trim flakes (9%) (Photo 29) were collected from the Dickerson Street Site.

Typically, precontact sites that are not in the vicinity of quarries have far greater quantities of thinning and trim flakes than other debitage, such as blocks, shatter, and gangue. This reflects that the primary tool manufacturing at these sites consist of the final production stage and tool kit maintenance. On the contrary, quarry sites often have high quantities of gangue, shatter, blocks and quarry flakes compared to low numbers of smaller flakes from more advance stages of tool production. At the Dickerson Street Site, however, roughly half of the debitage consists of gangue, shatter, blocks, and quarry flakes, which would be anticipated at a quarry site. The other half consists of block flakes, thinning flakes, and trim. This demonstrates that the Dickerson Street Site contains evidence of the entire range of tool production stages from extraction to finishing.

The stone tool production process begins when blocks of chert are removed from outcrops or when chert cobbles are procured from glacial till. Once a block is procured, the flintknapper begins to alter the block by reducing its size, typically by removing flakes. Although such scars can be caused by plowing, the presence of multiple flake scars are strong indicators of intentional activity. Once flakes have been removed from a block of chert it is considered a core.

- **Core.** A multifaceted piece of lithic material with flake scars demonstrating the intention to produce one or more tools, containing at least one blank, and that was previously a block or tested cobble. A core differs from a biface or more advanced tool because it has not been edged or thinned and does not have two discrete faces. A total of 91 cores (Photos 30-31) were collected across the sits suggesting a considerable quantity of production despite the fact that they represent just 1% of the debitage collection.

- **Exhausted Core.** A multifaceted piece of lithic material with flake scars which is less than four centimeters at its greatest dimension. A core fragment has been fractured to the point that it is too small to make most types of tools. 12 exhausted cores were collected during all phases of work at the site.

Chipped Stone Tools

In general, the category of chipped stone tool includes projectile points (arrow, spear, and dart tips), knives, scrapers for wood and hides, and a variety of other subtypes. Chipped stone tools that cannot be identified by purpose because they are in an unfinished state or have an ambiguous form are categorized as bifaces.

A total of 43 **bifaces** (Photos 32-33) were collected from the Dickerson Street Site. These bifaces were separated into four categories including three stages of production and a fourth category for bifaces for which the stage could not be determined. Different published lithic typologies use between three and six stages for biface analysis. Four to five stages are common. Since the initial stage in these models typically consists of a blank, block, core, or flake; this stage was not used for this analysis. Therefore, three stages were adopted, which are similar to the stages proposed by Odell (Odell 1982).

- **Stage 1** consists of edged bifaces, and 22 (16% of the chipped stone tools) of these artifacts were found at the site. Stage 1 bifaces differ from cores because they have an edge that divides the two faces of the artifact. These artifacts typically have a width-to-thickness ratio of 2:1. Interestingly, several Stage 1 bifaces collected had been worked, sometimes significantly, only on one side, with the side retaining a blocky, angular surface.

- **Stage 2** consists of the primary thinning stage. Six Stage 2 bifaces were found at the Dickerson Street Site. These bifaces have been thinned to roughly a 3:1 width-to-thickness ratio. 8 stage 2 bifaces were collected representing 6% of this type.

- **Stage 3** consists of the secondary thinning stage, and these bifaces can be considered finished tools. Six Stage 3 bifaces were found at the Dickerson Street Site. These bifaces have been thinned to a 4:1 width-to-thickness ratio or higher. 6 stage 3 bifaces were recovered accounting for 6% of the chipped stone tools.

Seven fragmentary bifaces that could not be categorized by stage were found. These bifaces were typically fragments of one edge and were lacking a sufficient cross-section to determine the degree of thinning. The decrease in number as we move from stage 1 to 3 potentially reflects the fact that bifaces were manufactured at the Dickerson Street Site and many bifaces were discarded on site after difficulties were encountered during the first stage, whereas later stage bifaces were removed from the site for finishing and use elsewhere.

Projectile Points

Three projectile points were found within the Dickerson Street Site. Although commonly known as "arrowheads," projectile points also consist of spear and atlatl dart heads and hafted knives. Projectile point styles were specific to precontact cultures, and dated projectile point typologies have been developed by archeologists based on the stratigraphic context of different point styles and associated radiocarbon dates.

A total of seven projectile points (7% of the chipped stone tools) were recovered during Hartgen's combined investigations at the Dickerson Street Site. Three of these points were not diagnostic. Two were classified as incomplete Stage 2 points and thus were not assigned a type. A third was fragmentary and a type was unable to be determined. However, the remaining points were all complete and assigned temporally diagnostic types (Photo 16). These included:

- A Late Archaic **Sylvan Stemmed point** (4,300 - 3,500 B.P.) from Trench 2 of the 2008 investigations.

- A Middle Archaic **Genesee point** (4,900 - 3,800 B.P.) from approximately 20 cm below the surface near the subsoil interface of Unit 3 of the present study.

- A Late Archaic to Early Woodland **Adena Point** (3,500 - 1,300 B.P.) recovered during surface collection in Area 3.

- A Middle Archaic **Vosburg point** (5,200 - 4,500 B.P.) also recovered during Area 3 surface collection.

Just one end **scraper** was collected from the ground surface on the floodplain. It was composed of a very dark chert that may have been a local variant, although was not common within the Dickerson Street Site itself.

Retouch consists of any modification of a piece after it has been stuck from its parent. Therefore, cores, bifaces, and tools have retouch. Flakes, which are typically discarded after being struck, do not generally have retouch. However, occasionally flakes were retouched to create various tools. The authors of the 2010 report indicated that they were extremely cautious about classifying edge modification as retouch, erring decidedly on the skeptical side during their Phase III investigation. They classified only 5 artifacts as retouched flakes. We took a different less skeptical approach and classified 71 flakes as retouched (Photos 34-35). That shift in method means that while the 2010 study only considered the category to represent 11% of their chipped stone

tools, our added data drives the number up to 56%. A more detailed study of these expedient tools would be appropriate if additional Phase III investigations were to occur. There was less difference in our classification of retouched blocks, which represented just 9 total from all investigations, however 7 of those were from the present investigation. The retouched blocks (Photo 36) differed from cores because the retouch was small and localized. This suggests that the retouch was intended to produce an expedient tool from the block.

Fire-Cracked Rock

Fire-cracked rock at the site was abundant with a total of 567 pieces recovered across all stages of work at the site. Quartzite and sandstone was present in the collection. However, quartzite was far more common. The presence of this quantity of material suggests that there are likely intact hearths still undiscovered. Accessing these features has the potential to provide carbon that could help refine the site chronology through radiocarbon dating.

Table 7. Combined Artifact Types and Subtypes

Type	Subtype	20028 and 2010 Count	2008 and 2010 Percentage of Type	2020 Count	2020 Percentage of Type	Combined Count	Combined Percentage of Type
rough stone tool	extraction hammerstone	3	14%	3	23%	6	18%
	hammerstone	17	81%	10	77%	27	79%
	wedge	1	5%	0	0%	1	3%
debitage	gangue	554	9%	125	8%	679	9%
	shatter	1,707	28%	108	7%	1815	24%
	block	401	6%	39	3%	440	6%
	core	69	1%	22	1%	91	1%
	exhausted core	11	0%	1	0%	12	0%
	flake	39	1%	260	17%	299	4%
	quarry flake	412	7%	76	5%	488	6%
	block flake	399	6%	208	14%	607	14%
	thinning flake	1,977	32%	534	35%	2511	33%
	trim	564	9%	139	9%	703	9%
	bifacial thinning flake	42	1%	0	0%	42	1%
chipped stone tool	retouched block	2	4%	7	8%	9	7%
	retouched flake	5	11%	71	77%	76	56%
	biface, stage 1	14	31%	8	9%	22	16%
	biface, stage 2	6	16%	2	2%	8	6%
	biface, stage 3	6	11%	0	0%	6	4%
	biface, fragment	7	16%	0	0%	7	5%
	scraper	1	2%	0	0%	1	1%
projectile point	Sylvan Stemmed	1	2%	0	0%	1	1%
	stage 2	1	2%	1	0%	2	1%
	untyped	1	2%	0	0%	1	1%
	Adena	0	0%	1	1%	1	1%
	Genesee	0	0%	1	1%	1	1%
	Vosburg	0	0%	1	1%	1	1%
fire-cracked rock		481	100%	86	100%	567	100%
Total		6,721					
*Projectile points are included with chipped stone tools in percentage							

calculations				

6.2.5 Artifact Distribution

The distributional patterns evident at the Dickerson Street Site allow us to define site boundaries, identify specific loci within the site and describe the specific production activities associated with each locus. Map 3a depicts the distribution of all Precontact artifacts recovered from shovel testing. It incorporates data collected from all stages of Hartgen's investigations at the site. It was the basis for drawing the broad boundaries of the site and its four loci. Overall, the site encompasses 5.37 acres (21,723 m^2) running along the banks of the Hudson River and inland to incorporate several ridges of bedrock that were exploited for lithic raw material. It measures approximately 373 m (1,224 ft) north to south along the river and 84 m (274 ft) east from the banks of the river. The boundaries were drawn to incorporate the highest density of materials encountered. A limited quantity of material extends farther east that the boundaries that we have established. However, any occupation in this areas was brief, leaving a very light footprint that is less likely to provide significant information.

Four distinct loci was established around the densest concentrations within the site boundaries. Locus 1 is located at the southern end of the project APE along a low ridge that was a likely extraction zone based on the presence of a large extraction hammerstone located along its east side. It also incorporates two dense deposits of large gangue, blocks and other waste debris which would have been the result of milling activity. The deposit in Collection Area 7 likely related directly to the ridge extraction zone and the deposit in Collection Area 8 likely relates to material being quarried from outcrops along River Road or destroyed during its construction. Locus 2 incorporates an extraction zone and milling/ore processing area at the southeastern corner of the central section of the site (surveyed in 2008). Locus 3 contains newly identified extraction zones along the east face of two ridges in the northern portion of the site. One large extraction hammerstone with two large spalls missing was located sitting directly on top of the ridge in an area showing clear evidence of quarrying. A scatter of lithic flaked and smaller hammerstones on a flat area above the worked ridge suggests some mid to late stage production in addition to the initial raw material quarrying. Locus 4 is located on the floodplain running from the central through the northern portions of the survey areas. The 2010 study demonstrated that the area was home to small camps where later stage lithic production was taking place. There are two clear clusters of remains within the locus with some fall off in between. This likely represents two independent camps established at different times as we have evidence that the site was in use for a long period of time, both the Middle and Late Archaic Periods and possible beyond. A lower density of remains along the floodplain were not included in the locus. However, they appear to represent similar activity, with fewer remains present. It should be noted that broadly speaking the densities of material were lower for areas surveyed in the present study. It is uncertain if this variation reflected genuine decrease in densities of if our team took a more conservative approach in identifying material as cultural. However, the latter cause seems very likely.

The functions ascribed to these loci were informed by the varying distributions of four categories of material collected during shovel testing (Map 3b). These include: quarry and block flakes, representing early stage processing of extracted ores, thinning flakes representing mid stage processing, trim flakes indicative of late stage processing and fire-cracked rock suggesting the presence of hearths that would be an indicator of campsite locations. Loci 1 and 2 contained the greatest concentrations of early stage material. These concentrations would be even higher if the results of surface collection were incorporated. However, these early stage materials were found in all four loci in lower densities suggesting that in some cases unprocessed raw material was being transported away from the extraction and main milling zones for further processing. Thinning flakes represent shaping of blanks and tools. They were widespread across the site with particular concentrations in the locus 2 workshop are and in the workshop/camps in locus 4. They were rare near the extraction zones in loci 1 and 3, suggesting that high graded ores were being refined into tool forms in other locations. The distribution of trim flakes is more restricted than we have seen for the early and mid-stage processing indicators. These were overwhelmingly concentrated in the workshop/camp areas of locus 4, with some also being found in the locus 2 workshop area. Fire-cracked rock had the most restricted distribution of all, being found almost exclusively in the floodplain area. Although a low density was also located near River Road to the east of where we drew the site boundary, suggesting some light occupation of that area as well.

Interestingly, no FCR was recovered from shovel tests at the north end of locus 4. However, it was not uncommon in the units excavated in that area.

These four indicator classes give us a great deal of insight into the overall organization of activities across the Dickerson Street Site. They make it clear where various stages of quarrying and tool production were taking place. They provide a clear indication of locations where small camps were placed. Additional insights could likely be gained from more detailed examination of the distribution of other artifact classes such as cores and bifaces. However, such analysis would be more appropriate for a Phase III investigation.

7 Interpretation

The Dickerson Street Precontact Site is a quarry that is just one of several located along the east side of the Hudson just north of its confluence with the Mohawk. According to La Porta's (2000:10-16) model of quarry development, quarries can be divided into various categories based on scale of activity. An "expression" indicates a prospect that may have been tested and demonstrates evidence of extraction during possibly a single episode. A "movement" is a small-scale quarry that may demonstrate division of tasks and specialized tools such as hammerstones. A "motion" is a large-scale quarry with variety of quarrying tools and subdivision of tasks evident in the spatial organization of the site. A "trend" is a series of quarries along a strike (the compass direction of a bedded chert formation) (LaPorta 2000:12). A group of trends in the same vicinity and within one area of similar geology is a "district." Based on this model, the Dickerson Street Site consists of an extensive movement or a limited motion within a district that extends from Lansingburgh to Pleasantdale.

La Porta's model outlines four zones that can be found in ancient quarry sites (La Porta 2000). These consist of Zones I through IV: extraction, milling, ore processing, and workshop zones (2000:12-13). All four of these zones are identifiable at the Dickerson Street Site. Extraction took place at several locations including outcrops located along River Road (presently or in the past), along the east side of a ridge at the southern end of the site and at outcrops present on the west side of ridges in the northern end of the site. These locations show evidence of the removal of material and in several cases contained large extraction hammerstones used in that removal. Milling took place in discrete locations in the southern end of the site, particularly in collection areas 7 and 8, which were marked by dense concentrations of early stage debitage consistent with the separation of useable ores from the surrounding matrix. Some milling activity was also mixed with ore processing in locations such as the workshop area in the southeast corner of the portion of the site investigate in 2008. Other workshop zones, specializing in mid to late stage manufacture of tools were clustered in the floodplain along the banks of the Hudson.

The site offered many advantages to local populations. The easily broken shale bedrock containing much of the usable ore was easily worked and contained high quality cherts lacking in inclusions like fossils that can be found in other locations. Glacial activity in the valley exposed outcrops at the surface, making locating and extracting the material relatively convenient. Its location near the confluence of the Hudson and Mohawk rivers, provided for fast and easy transport to the site, which was probably a regular stop of seasonal rounds. The presence of the level and well drained floodplain provided a convenient place to establish camps and their associated comforts. Finally, the river would have provided a range of aquatic resources to people stopping to exploit the valuable lithic resources.

Datable diagnostic artifacts indicate that the site was used as a source of raw materials by native peoples over a long period of time including the Middle and Late Archaic Periods and possibly into the early Woodland Period. Today little chert is visible at the surface, suggesting that the resource may have been exhausted in the Late Archaic or soon thereafter.

Table 8. Summary of archeological site information collected during the Phase I and II studies

Characteristic	Site information	Source of information
OPRHP Site No.	08340.001736	
Site Name	Dickerson Street Precontact Site	
Description	The Dickerson Street Site is located on the east shore of the Hudson River on a series of ridges of chert-bearing Mount Merino shale and other rocks of the Cohoes Melange. Several precontact chert quarry sites have been identified in the vicinity. The Dickerson Street Site consists of a quarry and workshop area on one of the elevated ridges and a flood plain with evidence of camps. Several bedrock outcrops with two types of lithic ore were present at the site. The lithic ores consisted of chert and a fine crystallized dolomite that demonstrated conchoidal fracture and was worked extensively in the surrounding workshop. Artifacts collected from the workshop consisted of quarry tools such as a wedge and hammerstones. Chert cores and early stage bifaces were also common. Near the workshop was the relatively sheltered floodplain located between two ridges and the Hudson River. Late Archaic projectile points found near the surface indicate that the floodplain was formed over 4,500 years ago, and geomorphological evidence suggests that the precontact occupation occurred almost entirely after the floodplain was formed. In addition to projectile points and other tools, large quantities of debitage and fire-cracked rock were collected from excavations on the floodplain. These artifacts suggest that once cores and flake blanks were produced in the quarry workshop nearby, they were transported to the relatively sheltered camps on the floodplain to be made into finished tools. The Dickerson Street Site provides the opportunity to study the entire process of stone tool production from its initial states in the quarry workshop to the formal states in the floodplain camps.	Results of multiple phases of work at the site including an initial Phase IB/II study of the central portion of the site conducted in 2008, a Phase III investigation of the central portion in 2010 and the present combined Phase IB/II study of the north and south sections of the APE. The research combined geomorphology, shovel testing, surface collection, excavation of units and mechanical trenching producing 8,427 artifacts. The collections have been analyses for type and distribution of artifacts. In addition, specialized analyses such as petrographic thin sectioning of samples from this and other nearby quarry sites, protein residue analysis of tools, pollen, phytolith and organic residue analysis of fire-cracked rock have been conducted. The 2010 Phase II placed the site within the broader regional context comparing it to numerous quarry sites in the area such as the Pleasantdale quarry (Brumbach 1987) located just north of the current site. Taken together, these studies provide a detailed picture of the environmental and geologic history of the site, its boundaries, loci within the site, stratigraphy and specific activity areas reflecting various stages of lithic raw material exploitation and tool production.
Date	Middle and Late Archaic	
Function	Quarry, lithic workshop and temporary camps	
Size	5.37 acres (21,723 m^2)	
Location	NAD 83, UTM Zone 18, 608696 Easting, 4738688 Northing	

8 Significance Assessment

The significance of the Dickerson Street Precontact Site is assessed according to the National Park Service's *Guidelines for Registering and Evaluating Archeological Properties* (Little, et al. 2000). The site meets eligibility Criterion D for the National Register and has "yielded, or may be likely to yield, information important in prehistory or history."

The Dickerson Street Precontact Site has already been recommended as eligible for the National Register during Hartgen's initial 2008 study of the central portion of the site saying, "It is recommended that the Dickerson Street Site be considered National Register eligible under Criterion D as a site that has yielded or may be likely to yield, information important in history or prehistory." We concur with that recommendation for the whole of the expanded site as defined during the present study.

8.1 Significant research topics that can be addressed by site

The Dickerson Street Precontact Site (08340.001736) has the potential to yield important information. A set of research questions were devised by the 2008 Hartgen team, some of which has already been addressed in the 2010 Hartgen Phase III Data Recovery for the central portion of the site. However, they still fully apply to the new areas covered in the current study. Those questions included the following:

- **Geomorphology**. Part of the APE is within the floodplain, although this portion of the floodplain may have been a backswamp, or a relatively wet area behind a drier natural levee. Does this portion of the floodplain contain similar artifacts and artifact densities to those found on the levee nearer the river?

- **Intra-Site Spatial Organization**. How was the space within the APE organized? The Phase IB results demonstrate that quarrying was carried out at the bedrock outcrops in the southern portion of the Phase IB study area, lithic workshops were located nearby, and that stone tool finishing took place on the floodplain. The APE is an area between the quarry and the floodplain. How was the APE used and how does is compare to the other zones at the site? Is there spatial patterning within the APE itself?

- **Features**. Are there bedrock outcrops at or near the ground surface within the APE? If so, was the area quarried for chert? Additionally, are there intact subsurface features such as hearths or postmolds located within the APE?

- **Dates**. Is it possible to determine more precise occupation dates within the Middle and Late Archaic period for occupations at the site through radiocarbon dating? Does the site contain diagnostic artifacts from other phases or periods?

- **Artifacts**. What kinds of artifacts are associated with the site, and what does the artifact assemblage indicate about the activities that were carried out within the site?

- **Lithic Sources**. What degree of variation is apparent in the chert available in outcrops in the vicinity of the site? Is this variation reflected in the types of chert used for tool production? Are there tools present at the site that are made from non-local materials? Thin section and trace element analysis will provide information about the source and quality of lithic material found at the site.

- **Lithic Quality**. What is the quality of the types of lithic materials identified at the site? Did precontact people favor one type of local chert over another?

- **Botanical Resources**. What types of botanical resources were exploited by occupants of the site? What were the potential uses of these resources? This information will be obtained by identifying pollen, phytoliths, and macrobotanical remains from soil horizons, feature fill, pottery, and stone tools.

- **Faunal Resources**. What types of faunal resources were exploited by occupants of the site? If so, what do they indicate about the subsistence strategies and diet of the site's occupants? This information will be obtained through identification of faunal bone and application of protein residue analysis and Fourier Transform Infrared Spectroscopy (FTIR) to stone tools.

- **Regional Context**. How does the Dickerson Street Site relate to other sites in the vicinity, including the Pleasantdale Quarry, the Charles Ellet Apartment Site, the Mechanicville Road Site, the Second Street Site, and the Water Works Site? Were any of the sites occupied simultaneously? Were similar

activities performed at each site, or is it possible that several of the sites were used for different purposes, possibly contributing to a broad land-use pattern incorporating multiple sites?

8.2 Integrity

The site retains important aspects of its integrity such as location, design and structure, physical setting, materials, workmanship, historical sense or feeling, and association between data and important research questions (Little, et al. 2000:35-38).

An assessment of the integrity of the site based on the seven aspects of integrity follows:

- **Location, Setting and Feeling**. The site is in its original location and retains almost all of its occupation-period topographic setting, including significant features such as the southwest ridge with extensive views of the Hudson River, the chert quarry with bedrock outcrops and extraction excavations and the floodplain which was likely the primary habitation area.

- **Design**. The presence of several environmental zones and identification of different activities both in different zones and within the same zone contributes to the integrity of design. For example, procurement of chert for stone tool production took place in the quarry, whereas the finishing of tools was completed in camps on the floodplain. Also, there is evidence that the quarry area itself contains different chert workshops demonstrating preferences for different materials and reduction techniques.

- **Materials**. The presence of several sources of raw material for stone tool manufacture near the site contributes to the integrity of materials. The study of the site will facilitate the assessment of preference for different varieties of local cherts and the use of non-local sources such as Onondaga chert, which is also represented in the artifact assemblage from the site.

- **Workmanship**. As the artifacts in Shovel Test 1 demonstrate, the site provides extensive information about the process of stone tool production. It seems likely that the site contains excellent examples of products of the entire process from quarrying to finishing tools.

- **Association**. The site has the potential to provide data to assess a wide variety of research questions, some of which are outlined below.

9 Recommendations

The current APE contains the Dickerson Street Site, a Middle to Late Archaic quarry with multiple loci, representing a full range of extraction and production activities. The site has been determined to be National Register eligible. A Phase III investigation of portions of the site was completed in 2010. The current Study Area includes portions of the site that were not covered by Hartgen's earlier projects. The site has experienced minimal disturbance and demonstrates several criteria for integrity. Avoidance of the defined site area or additional Phase III Data Recovery is recommended.

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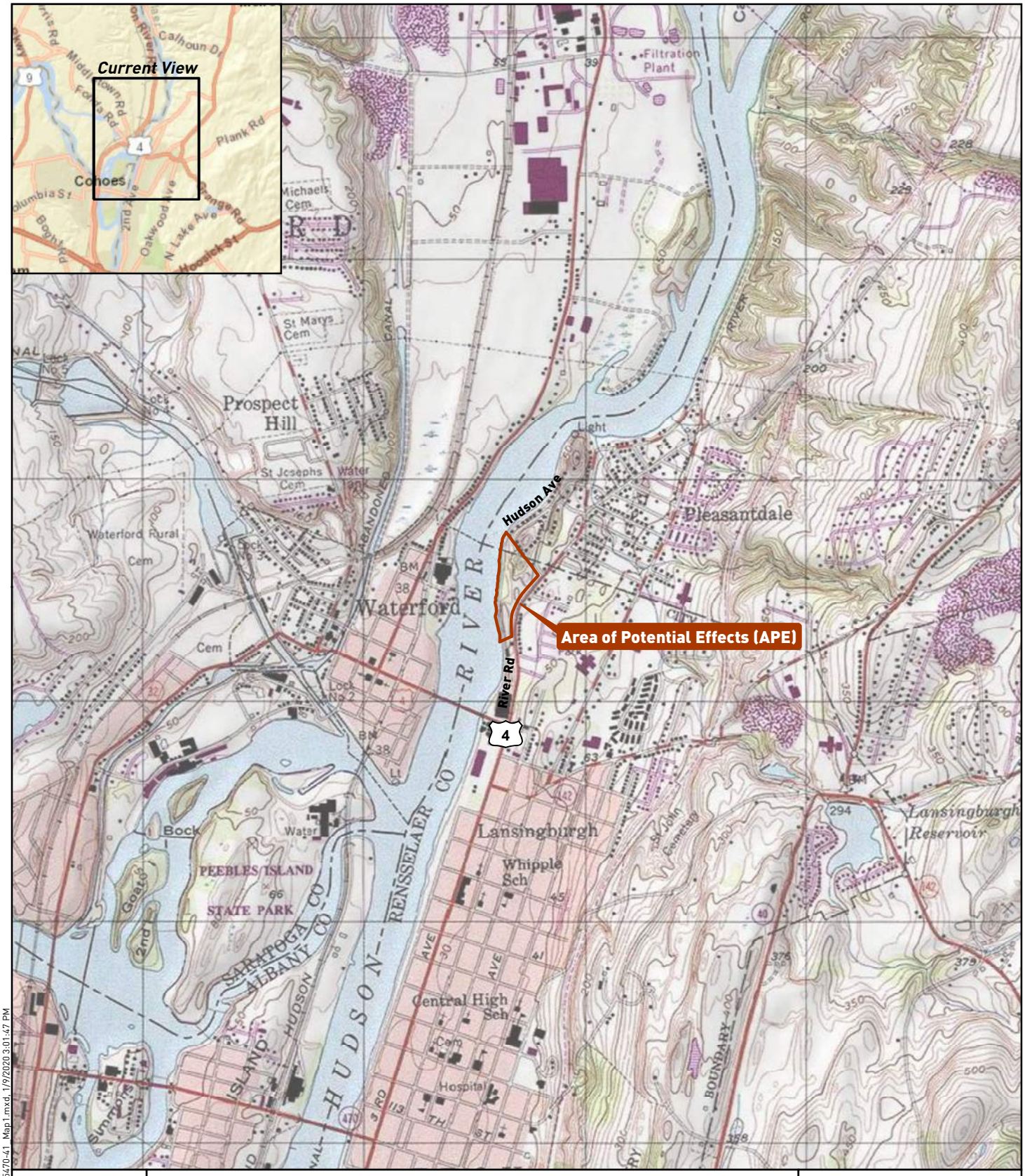
Maps



1,000 0 1,000 2,000 Feet

300 0 300 600 Meters

Note: Contour interval is 10 feet.

Project Location

GIS Services Accessed 1/9/2020: Environmental Systems Research Institute, Inc., World Street Map; USGS Topo Map Service

HARTGEN archeological associates inc

Map 1

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Project Map

Environmental Systems Research Institute, Inc., World Imagery Accessed 3/27/2020

HARTGEN archeological associates inc

Map 2

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N

50 0 50 100 Feet
15 0 15 30 Meters

Legend

- Dickerson Precontact Site Boundary
- Study Area
- Area of Potential Effects (APE)
- Wet
- Slope
- Disturbed

Kernel Density Analysis

Environmental Systems Research Institute, Inc.,
World Imagery Accessed 4/14/2020

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Map 3a

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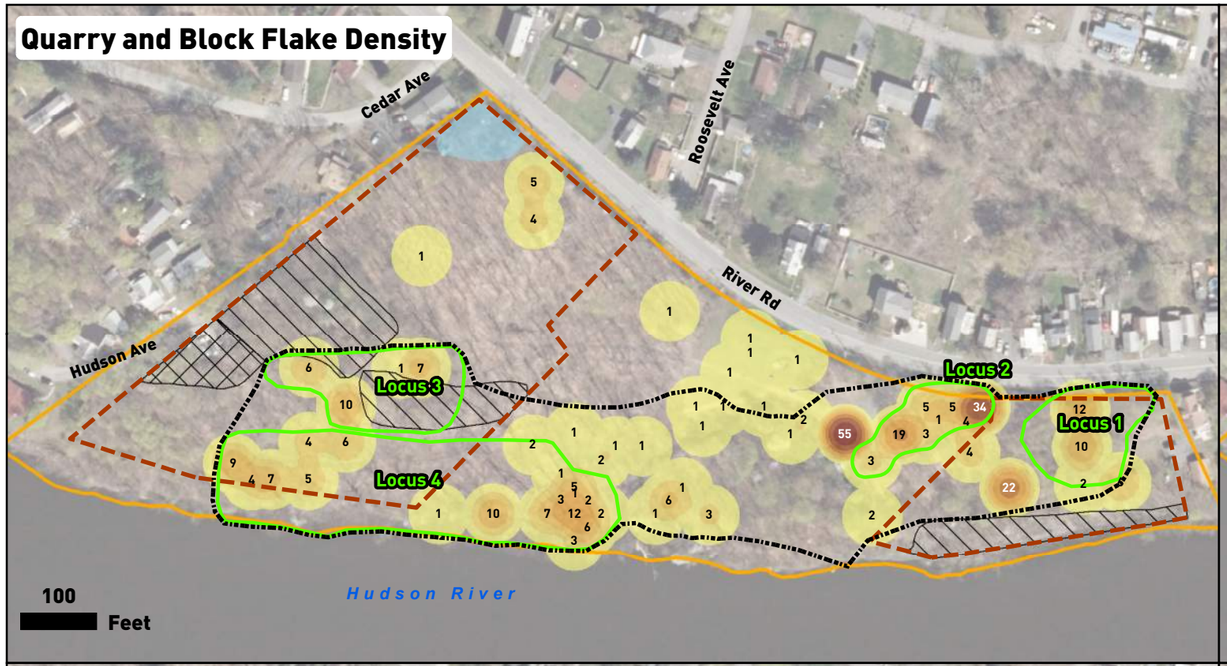

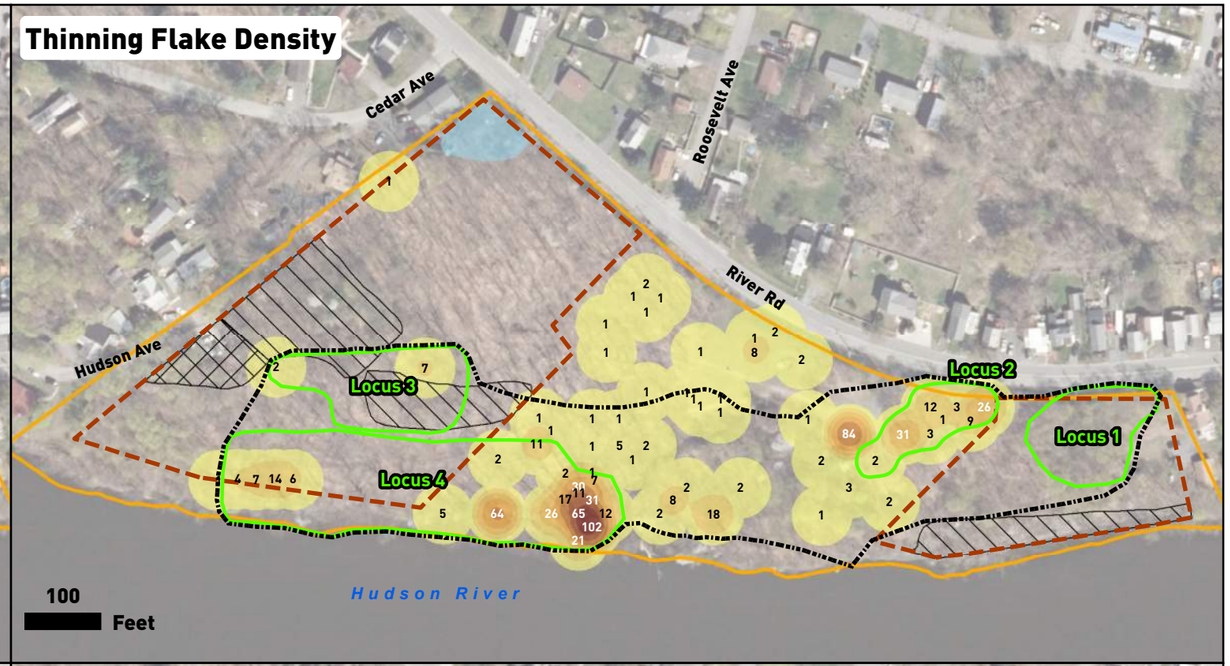

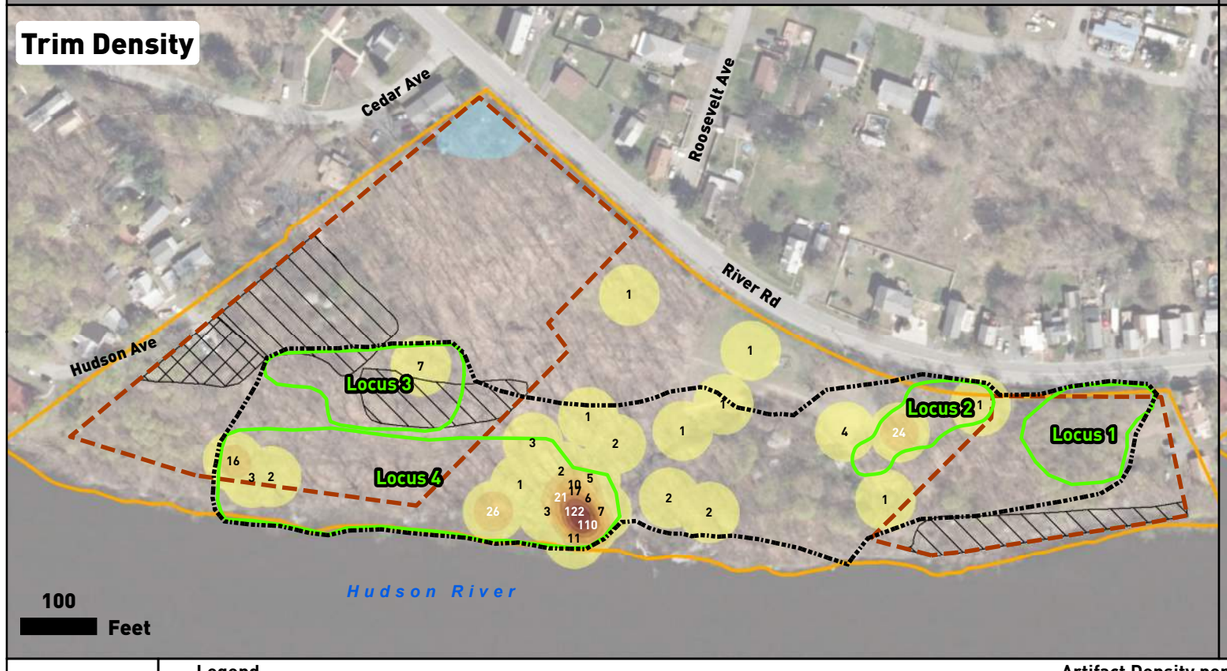

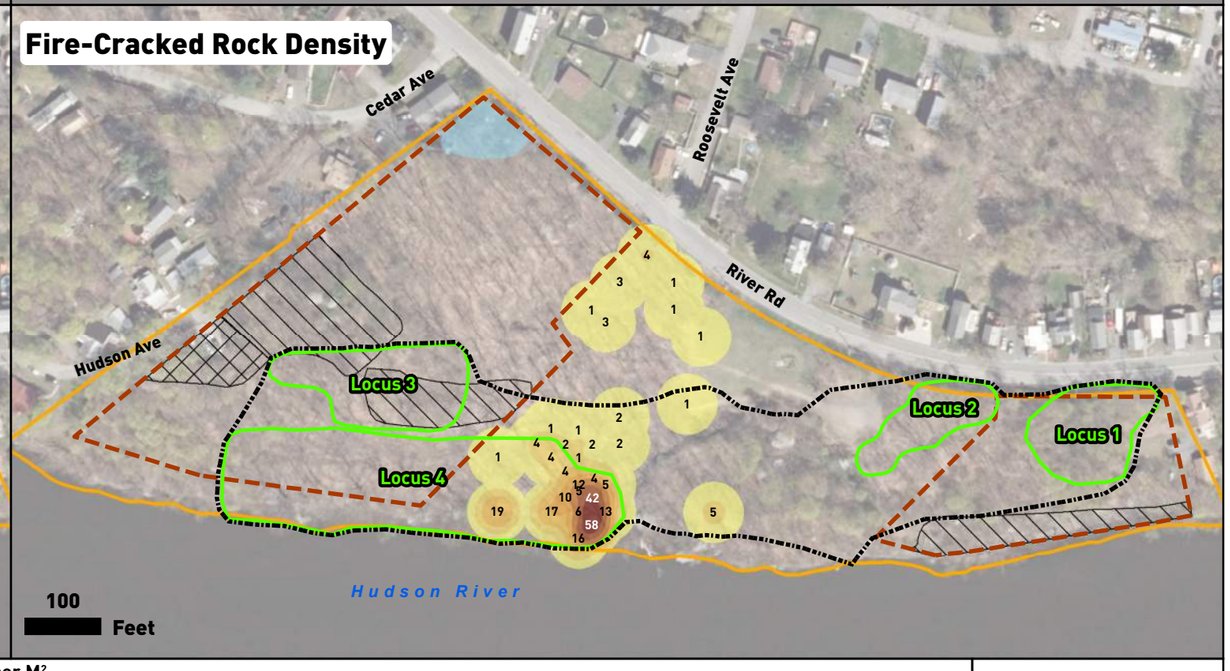

Legend

- Dickerson Precontact Site Boundary
- Study Area
- Area of Potential Effects (APE)
- Wet
- Disturbed
- Slope

Artifact Density per M²

Low — High

Kernel Density Analysis By Type

Environmental Systems Research Institute, Inc.,
World Imagery Accessed 4/14/2020

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Map 3b

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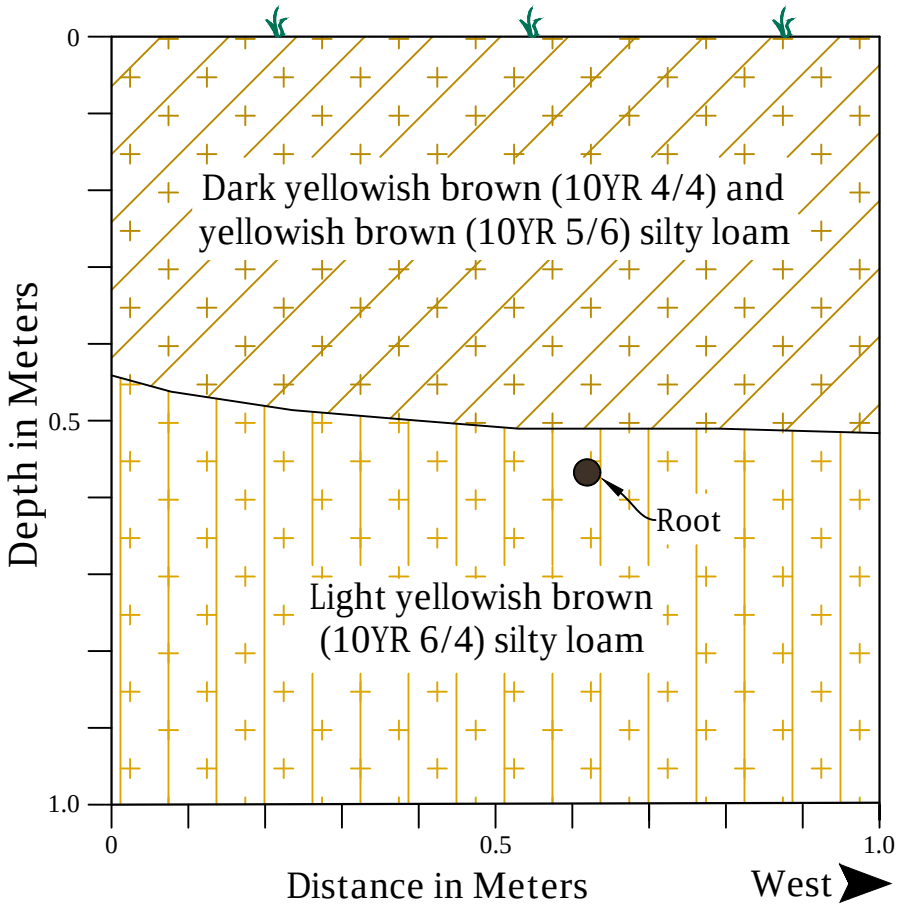
Figures



Unit 1, South Wall Profile

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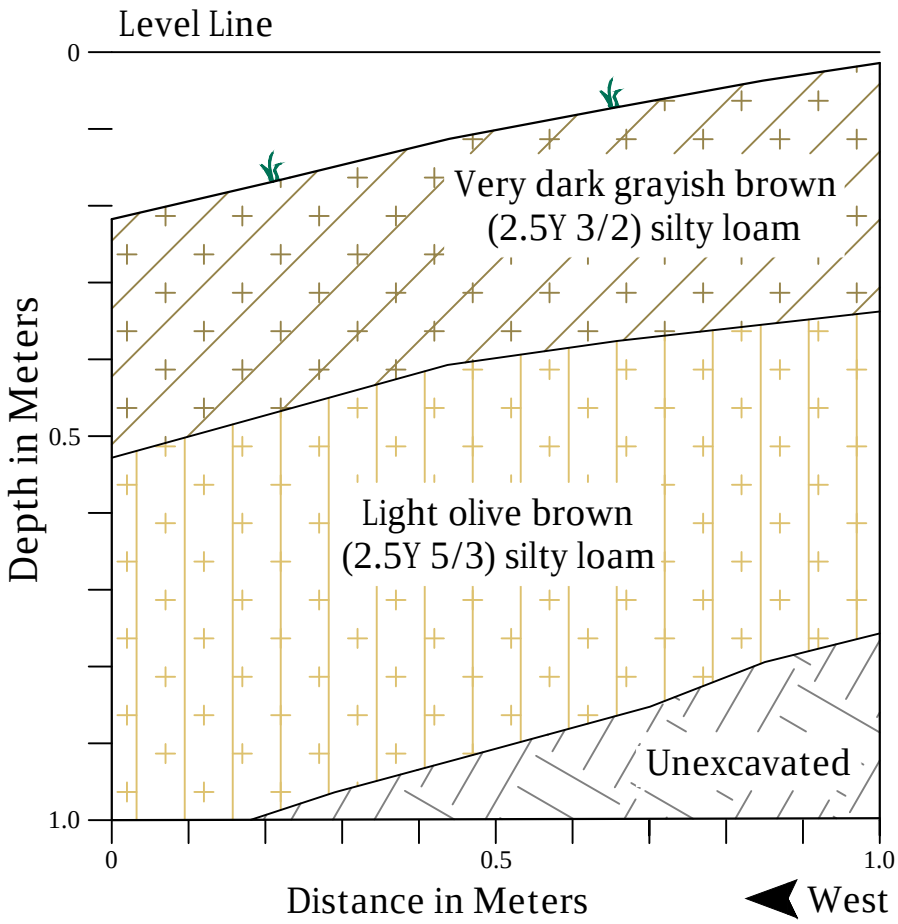
Figure 1



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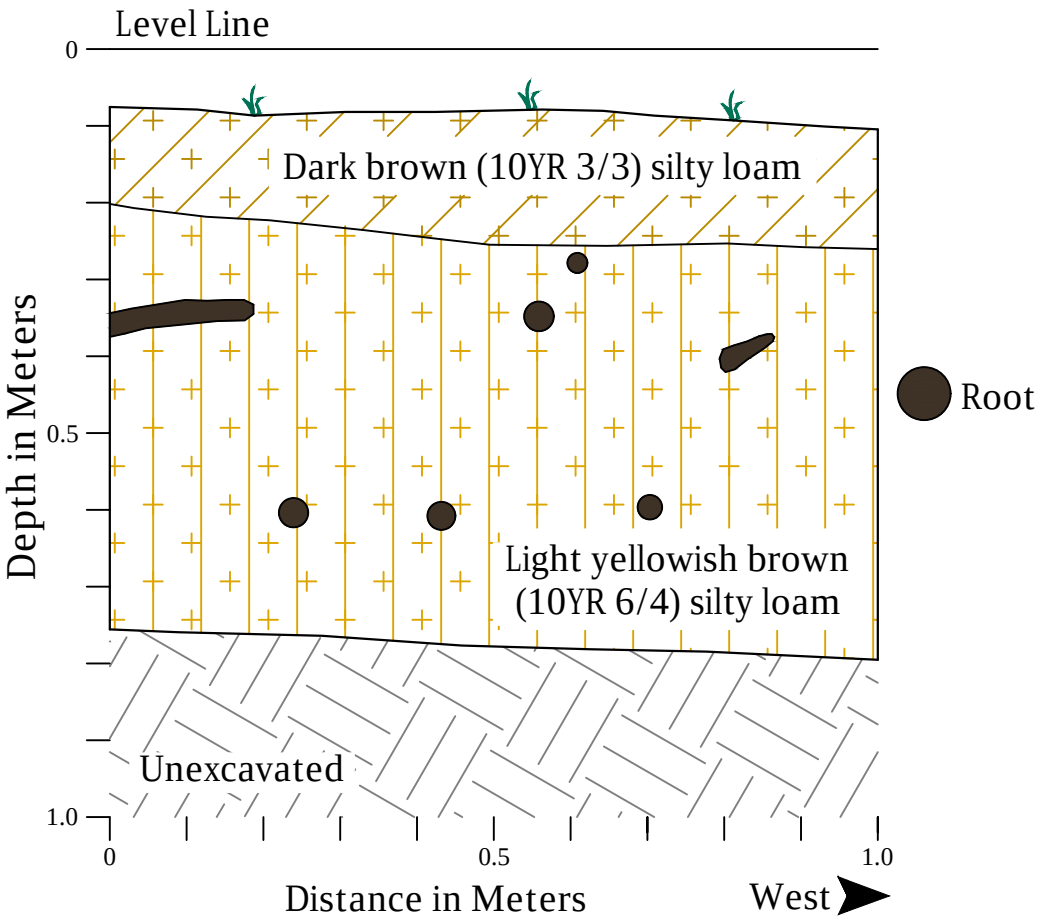
Unit 2, North Wall Profile

Figure 2



Unit 3, South Wall Profile

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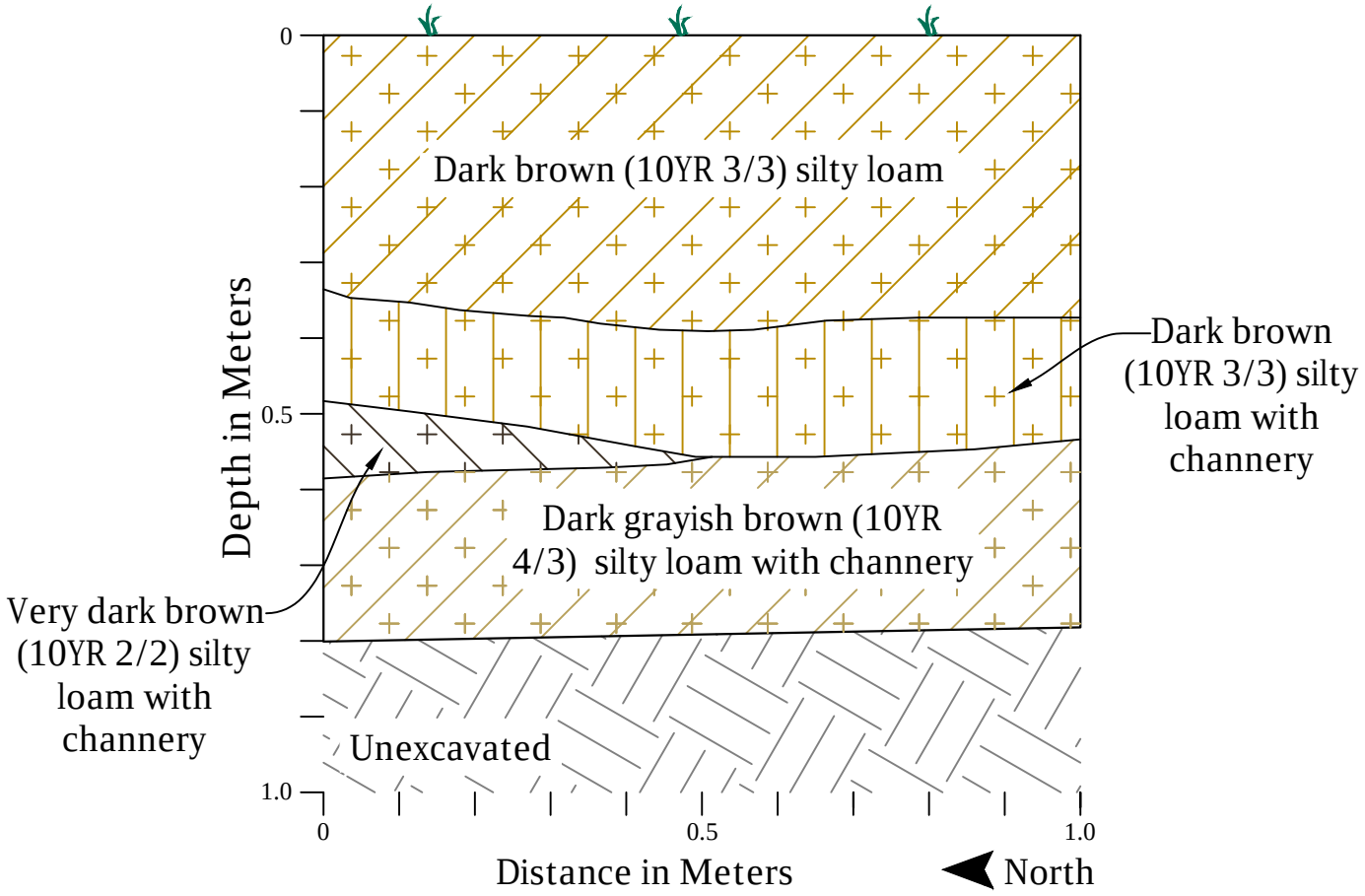
Figure 3



Unit 4, East Wall Profile

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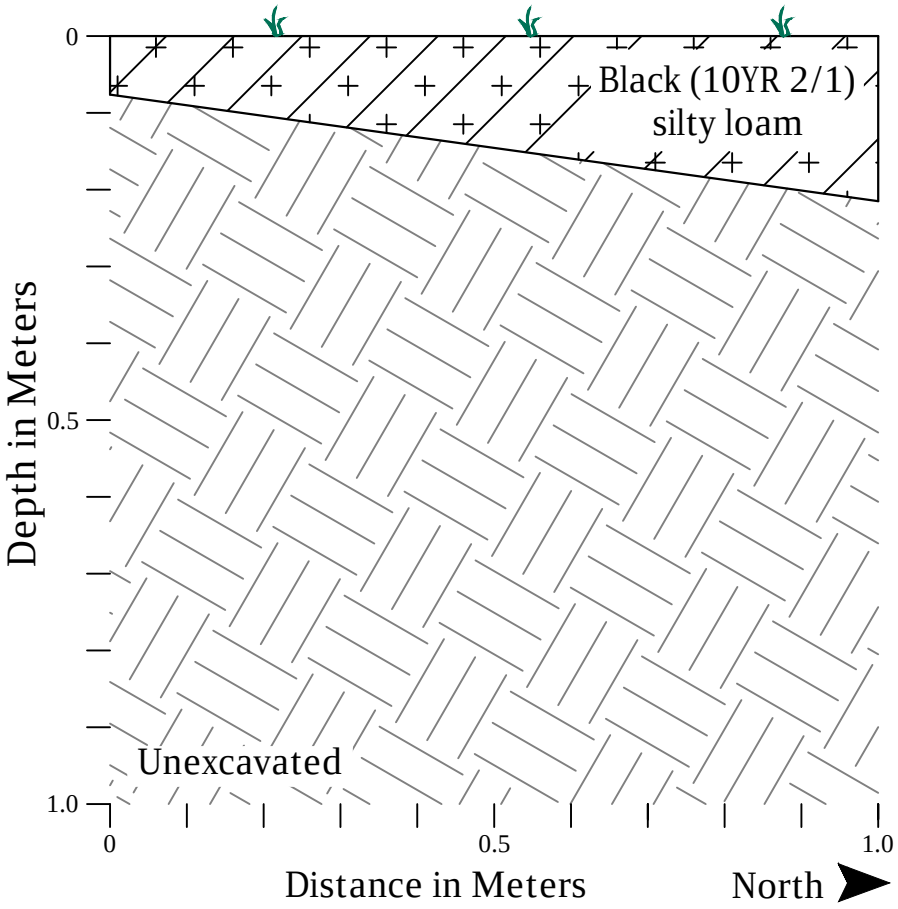
Figure 4



Unit 5, West Wall Profile

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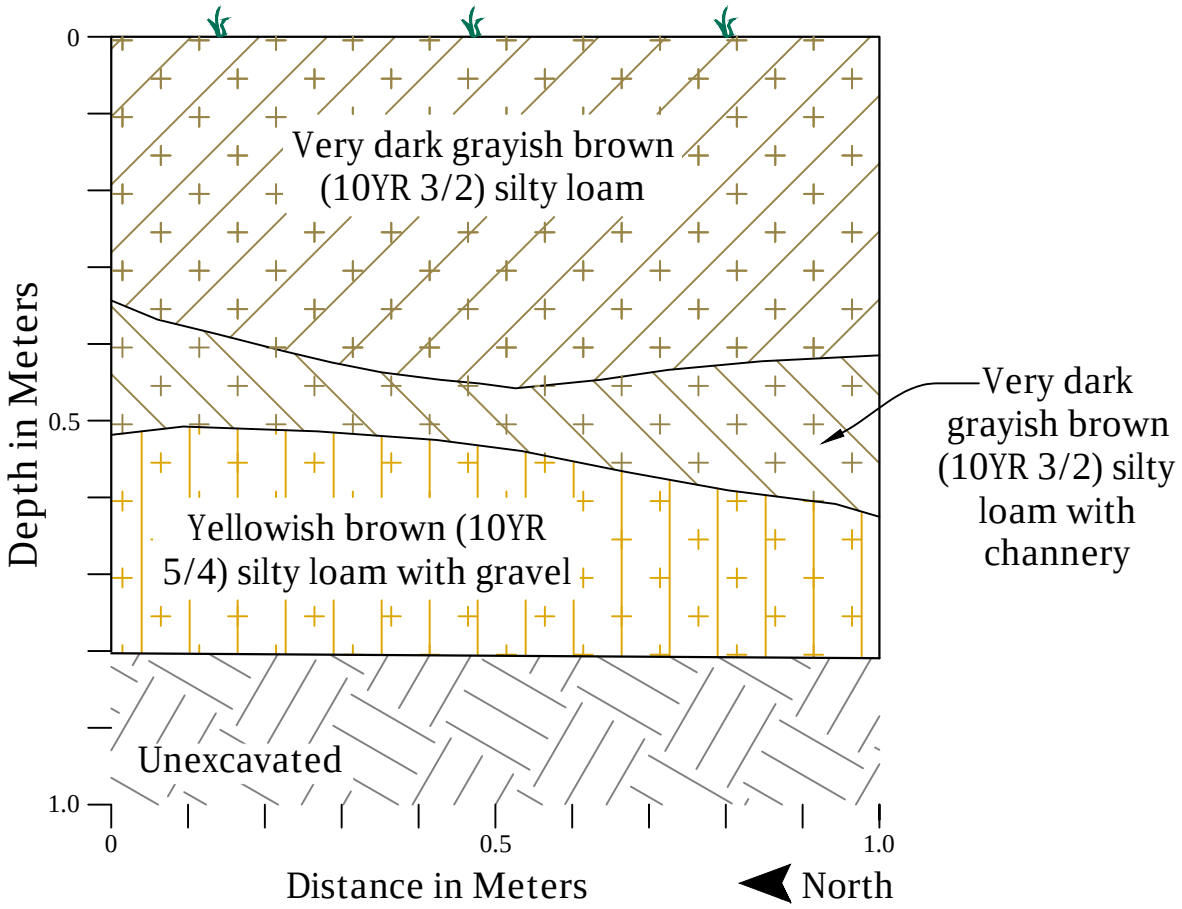
Figure 5



Unit 6, East Wall Profile

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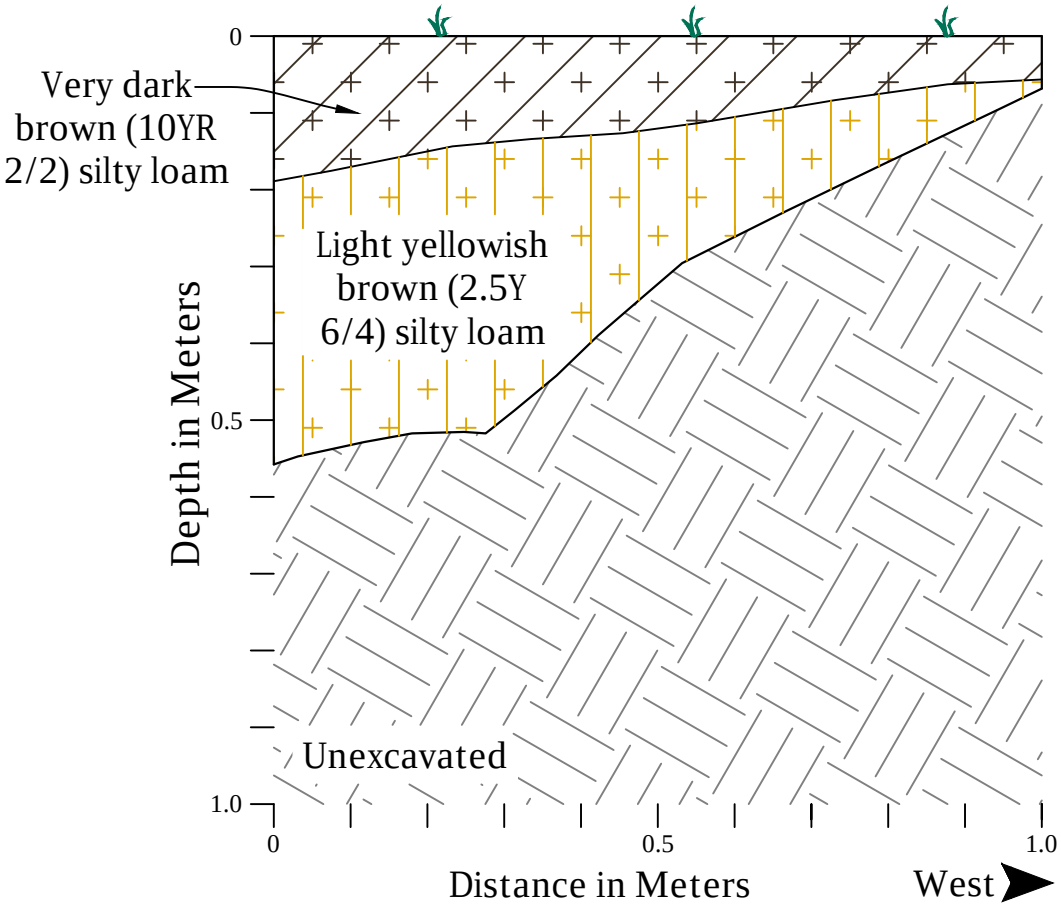
Figure 6



Unit 7, South Wall Profile

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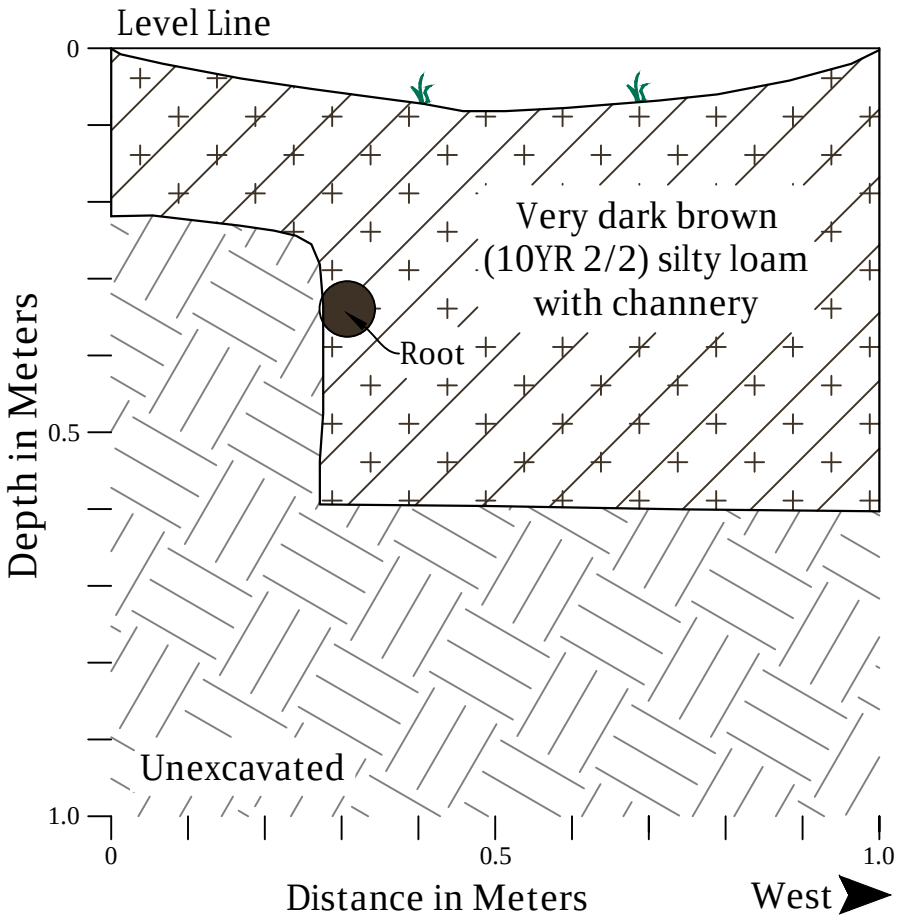
Figure 7



Unit 8, South Wall Profile

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Figure 8

Photographs

Photo 1. View of Hudson River and drop off along the south end of the APE, view south.

Photo 2. Floodplain along the Hudson showing typical wooded condition of much of the APE, view west.

Photo 3. Shale outcrop along the west side of the northern ridge, view south.

Photo 4. Disturbance and modern refuse along the south end of the APE, view north.

Photo 5. Archeologist Cynthia Jackson excavating STP 16.

Photo 6. Archeologist John Ham excavating STP 98.

Photo 7. Archeologist David Wendell excavating STP 8.

Photo 8. Archeologists Amy Wilson (Left) and Cynthia Jackson (right) raking collection area 1 to remove leaf litter.

Photo 9. Archeologists Cynthia Jackson, Amy Wilson and Tom Boyd (Left to right) surveying collection area 3.

Photo 10. Collection Area 5 along slope below worked outcrop after removal of leaf litter.

Photo 11. Worked shale outcrop along the west side of the northern ridge.

Photo 12. Concentration of gangue, blocks and shatter from collection area 7.

Photo 13. Concentration of gangue, blocks and shatter from collection area 8.

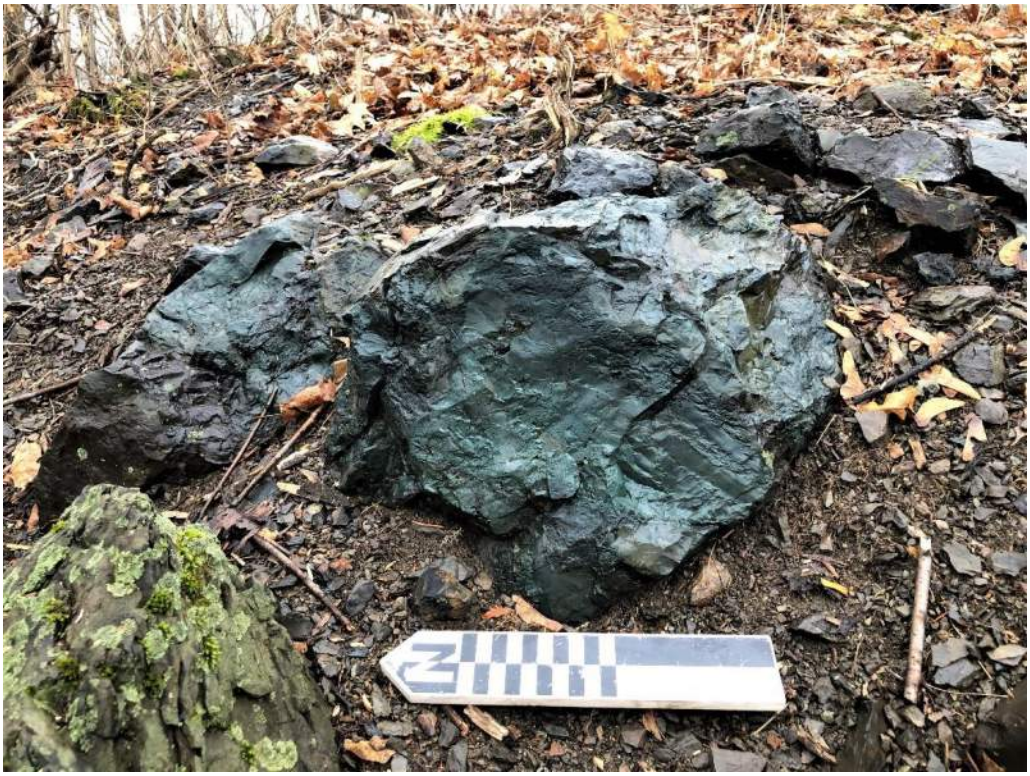

Photo 14. Exposed cobbles of green chert on the west slope of the southern ridge.

Photo 15. Bottle of Brownatone hair dye recovered from small early 20th century dump area to the east of the large ridge at the far north of the APE.

Photo 16. Intact Middle Archaic Genesee (top left) (Bag 71, Item 1.1), Late Archaic Adena (top right) (Bag 75, Item 1.1) and Middle Archaic Vosburg (Bag 77, Item 1.1) projectile points.

Photo 17. Quartzite extraction hammerstone with spalls (Bag 69, Item 1) recovered from the top of the worked shale outcrop on the west side of the northern ridge, immediately above the worked section.

Photo 18. Quartzite extraction hammerstone (Bag 70, Item 1.1) recovered along the east side of the southern ridge.

Photo 19. Fragments of two extraction hammerstones (Bag 41, Item 1 and Bag 81, Item 5). Left example also appears to be fire-cracked.

Photo 20. Hammerstones (Top Row left to right: Bag 39, Item 1 – Bag 60, Item 1 – Bag 62, Item 1 Bottom Row Left to right: Bag 64, Item 1 – Bag 72, Item 1).

Photo 21. Hammerstones (Top Row left to right: Bag 49, Item 1 – Bag 74, Item 1 – Bag 83, Item 1 Bottom Row Left to right: Bag 86, Item 1 – Bag 89, Item 1).

Photo 22. Quarry flakes (Top Row left to right: Bag 1, Item 1.3 – Bag 5, Item 2.2 Bottom Row Left to right: Bag 7, Item 1.3 – Bag 8, Item 1.3).

Photo 23. Quarry flakes (Top Row left to right: Bag 9, Item 2.2 – Bag 10, Item 1.1 Bottom Row Left to right: Bag 12, Item 1.1 – Bag 14, Item 14.2).

Photo 24. Quarry flakes (Top Row left to right: Bag 81, Item 2 – Bag 81, Item 3.2 Bottom Row Left to right: Bag 81, Item 4.4).

Photo 25. Quarry flake (Bag 86, Item 3.3).

Photo 26. Thinning Flakes (Bag 41, Item 3.4).

Photo 27. Thinning flakes (Bag 48, Item 3.3).

Photo 28. Thinning flakes (Top Row: Bag 50, Item 3.5 Middle Row Bag 50, Item 4.5 Bottom Row: Bag 50, Item 4.6).

Photo 29. Trim flakes (Top Row: Bag 41, Item 3.5 – Bag 42, Item 2.4 Middle Row: Bag 47, Item 2.4 – Bag 48, Item 3.4 Bottom Row: Bag 50, Item 4.7 – Bag 76, Item 6.9).

Photo 30. Cores (Top Row: Bag 18, Item 1.2 – Bag 20, Item 2.1 – Bag 22, Item 2.3 Bottom Row: Bag 33, Item 4.1 – Bag 74, Item 6.3).

Photo 31. Cores (Top Row: Bag 90, Item 2.2 – Bag 90, Item 2.3 Bottom Row: Bag 91, Item 1.1).

Photo 32. Bifaces (Top Row: Bag 36, Item 1 – Bag 39, Item 2 Bottom Row: Bag 48, Item 1 – Bag 62, Item 2).

Photo 33. Bifaces (Top Row: Bag 67, Item 1 – Bag 76, Item 1.2 Bottom Row: Bag 76, Item 3 – Bag 81, Item 1.2).

Photo 34. Retouched flakes (Top Row: Bag 50, Item 1 – Bag 51, Item 1 Bottom Row: Bag 56, Item 1 – Bag 62, Item 2).

Photo 35. Retouched flakes Bifaces (Bag 74, Item 2 and Bag 74, Item 3).

Photo 36. Retouched blocks Bifaces (Top Row: Bag 5, Item 1 – Bag 65, Item 1.1 and Bag 90, Item 1.2).

Appendix 1: Shovel Test Records

547041: Phase II Archeological Investigation, Troy Starlight Development

Shovel Test Records

	Ending Depth (cm)	Level	Soil Type	Soil Inclusions	Munsell Color		Termination Reason
1	23	1	sand loam	roots, rocks	10yr 3/2	very dark grayish brown	impasse (rocks)
2	22	1	silt loam	exfoliating bedrock	10yr 3/2	very dark grayish brown	bedrock
5	27	1	sand loam	roots	2.5y 5/4	light olive brown	
	51	2	sand loam	rocks	10yr 3/3	dark brown	impasse (rocks)
6	19	1	silt loam	roots	10yr 4/3	brown	bedrock
7	19	1	sand loam	roots, rocks	2.5y 5/4	light olive brown	
	32	2	sand loam	rocks	10yr 3/3	dark brown	impasse (rocks)
10	15	1	silt sand	gravel, exfoliating bedrock	10yr 3/2	very dark grayish brown	bedrock
11	18	1	silt loam	exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	bedrock
12	13	1	silt sand	gravel, roots	10yr 3/2	very dark grayish brown	
	30	2	silt sand loam	gravel	7.5yr 4/4	brown	subsoil
13	27	1	silt loam	exfoliating bedrock	10yr 3/2	very dark grayish brown	
	45	2	silt	exfoliating bedrock	7.5yr 4/4	brown	subsoil
14	24	1	sand loam	gravel, roots	10yr 3/3	dark brown	
	43	2	sand loam	gravel, rocks	10yr 4/3	brown	subsoil
17	16	1	silt loam	exfoliating bedrock, roots	10yr 4/3	brown	bedrock
18	25	1	silt	gravel, exfoliating bedrock, roots	10yr 4/1	dark gray	bedrock
19	25	1	silt	exfoliating bedrock	10yr 2/2	very dark brown	bedrock
20	36	1	silt loam	exfoliating bedrock, roots	10yr 3/3	dark brown	bedrock

547041: Phase II Archeological Investigation, Troy Starlight Development

Shovel Test Records

	Ending Depth (cm)	Level	Soil Type	Soil Inclusions	Munsell Color		Termination Reason
21	19	1	sand loam	gravel, roots, rocks	10yr 3/3	dark brown	
	44	2	sand loam	gravel, shale	10yr 4/3	brown	subsoil
22	32	1	silt	gravel, exfoliating bedrock, roots	10yr 4/1	dark gray	bedrock
23	24	1	silt loam	exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	
	42	2	silt	exfoliating bedrock	10yr 4/4	dark yellowish brown	subsoil
24	27	1	sand loam	gravel, roots	10yr 3/3	dark brown	
	54	2	sand loam	gravel, rocks	10yr 5/3	brown	subsoil
25	28	1	sand loam	gravel, roots, rocks	10yr 3/3	dark brown	
	43	2	sand loam	gravel, rocks	10yr 5/3	brown	subsoil
26	23	1	silt loam	exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	
	43	2	silt loam		10yr 4/4	dark yellowish brown	subsoil
27	20	1	silt	gravel, roots	10yr 3/3	dark brown	
	25	2	silt	gravel, exfoliating bedrock, roots	10yr 4/2	dark grayish brown	bedrock
28	17	1	sand loam	gravel, roots	10yr 3/3	dark brown	
	38	2	sand loam	gravel, shale	10yr 5/3	brown	subsoil
29	21	1	sand loam	gravel, roots, rocks	10yr 3/3	dark brown	
	40	2	sand loam	gravel, rocks	10yr 5/3	brown	subsoil
30	20	1	sand loam	gravel, roots	10yr 3/3	dark brown	
	42	2	sand loam	gravel, exfoliating bedrock	10yr 4/3	brown	bedrock
					10yr 5/3	brown	
31	18	1	sand loam	gravel, roots, rocks	10yr 3/3	dark brown	
	39	2	sand loam	exfoliating bedrock	10yr 4/3	brown	bedrock

547041: Phase II Archeological Investigation, Troy Starlight Development

Shovel Test Records

	Ending Depth (cm)	Level	Soil Type	Soil Inclusions	Munsell Color		Termination Reason
32	21	1	sand loam	gravel, roots, rocks	10yr 3/3	dark brown	
	47	2	sand loam	gravel, rocks	10yr 4/3	brown	subsoil
33	18	1	sand loam	gravel, roots	10yr 3/3	dark brown	
	42	2	sand loam	gravel, rocks	10yr 4/3	brown	subsoil
34	25	1	silt	gravel, roots	10yr 3/2	very dark grayish brown	
	38	2	silt	exfoliating bedrock, roots	10yr 5/3	brown	subsoil
35	22	1	silt	gravel, roots	10yr 3/2	very dark grayish brown	
	34	2	silt	exfoliating bedrock, roots	10yr 4/4	dark yellowish brown	subsoil
36	25	1	silt	gravel, roots	10yr 3/2	very dark grayish brown	
	38	2	silt	gravel, exfoliating bedrock	10yr 4/4	dark yellowish brown	subsoil
37	11	1	silt	gravel, roots	10yr 3/1	very dark gray	
	18	2	silt	gravel, exfoliating bedrock	10yr 4/4	dark yellowish brown	bedrock
38	15	1	silt	roots	10yr 3/1	very dark gray	
	28	2	silt	gravel, exfoliating bedrock	10yr 5/3	brown	subsoil
39	28	1	silt	gravel, roots	10yr 3/2	very dark grayish brown	
	42	2	silt	gravel, exfoliating bedrock	10yr 4/4	dark yellowish brown	subsoil
40	30	1	silt	gravel, roots	10yr 3/3	dark brown	impasse (roots)

547041: Phase II Archeological Investigation, Troy Starlight Development

Shovel Test Records

	Ending Depth (cm)	Level	Soil Type	Soil Inclusions	Munsell Color		Termination Reason
41	20	1	silt	gravel, roots	10yr 3/2	very dark grayish brown	
	28	2	silt		10yr 8/1	white	
	49	3	silt	gravel, roots	10yr 3/1	very dark gray	
	59	4	silt	gravel, exfoliating bedrock	10yr 4/4	dark yellowish brown	subsoil
42	44	1	silt loam	roots	10yr 3/3	dark brown	impasse (roots)
43	30	1	silt loam	exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	
	46	2	silt loam		10yr 4/4	dark yellowish brown	subsoil
44	21	1	silt loam	exfoliating bedrock, roots	10yr 3/3	dark brown	
	43	2	silt loam	exfoliating bedrock	7.5yr 4/4	brown	subsoil
45	33	1	silt loam	exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	impasse (roots)
46	42	1	silt loam	exfoliating bedrock, roots	10yr 2/2	very dark brown	impasse (roots)
47	33	1	silt loam	roots	10yr 3/2	very dark grayish brown	impasse (roots)
48	34	1	sand loam	gravel, roots	10yr 3/3	dark brown	
	49	2	sand loam	gravel	10yr 4/4	dark yellowish brown	subsoil
49	30	1	sand loam	gravel, roots, rocks	10yr 3/3	dark brown	
	46	2	sand loam	gravel, rocks	10yr 4/4	dark yellowish brown	subsoil
50	17	1	sand loam	gravel, roots, rocks	10yr 3/3	dark brown	
	42	2	sand loam	gravel, rocks	10yr 4/4	dark yellowish brown	subsoil
51	21	1	sand loam	gravel, roots, rocks	10yr 3/3	dark brown	
	24	2	sand loam	gravel, roots	10yr 4/3	brown	impasse (roots)

547041: Phase II Archeological Investigation, Troy Starlight Development

Shovel Test Records

	Ending Depth (cm)	Level	Soil Type	Soil Inclusions	Munsell Color		Termination Reason
52	39	1	silt	gravel, roots	10yr 3/3	dark brown	
	47	2	silt	exfoliating bedrock, roots	10yr 5/3	brown	subsoil
53	23	1	silt	gravel, roots	10yr 3/2	very dark grayish brown	impasse (rocks)
56	12	1	silt	exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	bedrock
57	26	1	silt	gravel, roots	10yr 3/2	very dark grayish brown	
	38	2	silt	exfoliating bedrock	10yr 4/4	dark yellowish brown	subsoil
58	10	1	silt	gravel, roots	10yr 3/2	very dark grayish brown	impasse (roots)
60	10	1	silt	roots	10yr 2/2	very dark brown	
	41	2	loam clay		10yr 4/6	dark yellowish brown	subsoil
61	12	1	silt	gravel, exfoliating bedrock, roots	10yr 2/2	very dark brown	
	42	2	loam clay	cobbles	10yr 4/6	dark yellowish brown	subsoil
62	11	1	silt	cobbles, roots	10yr 2/2	very dark brown	
	25	2	loam clay	exfoliating bedrock	10yr 4/6	dark yellowish brown	impasse (rocks)
63	8	1	silt	exfoliating bedrock	10yr 2/2	very dark brown	impasse (rocks)
64	19	1	silt	exfoliating bedrock	10yr 2/2	very dark brown	
	40	2	loam clay	exfoliating bedrock	10yr 4/6	dark yellowish brown	subsoil
65	10	1	silt	exfoliating bedrock, roots	10yr 2/2	very dark brown	
	35	2	loam clay	exfoliating bedrock	10yr 4/6	dark yellowish brown	subsoil
66	22	1	silt	exfoliating bedrock, roots	10yr 3/1	very dark gray	
	32	2	silt	exfoliating bedrock, roots	10yr 5/3	brown	subsoil

547041: Phase II Archeological Investigation, Troy Starlight Development

Shovel Test Records

	Ending Depth (cm)	Level	Soil Type	Soil Inclusions	Munsell Color		Termination Reason
67	22	1	sand loam	gravel, roots, rocks	10yr 3/3	dark brown	
	39	2	sand loam	gravel, exfoliating bedrock, rocks	10yr 4/3	brown	subsoil
68	37	1	silt loam	exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	bedrock
69	22	1	silt loam	exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	
	34	2	silt loam	exfoliating bedrock, roots	10yr 4/4	dark yellowish brown	subsoil
74	27	1	silt loam	exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	
	43	2	silt loam	exfoliating bedrock, roots	7.5yr 4/4	brown	subsoil
75	35	1	silt loam	exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	bedrock
76	51	1	silt loam	exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	bedrock
77	29	1	sand loam	gravel, roots, rocks	10yr 3/3	dark brown	impasse (rocks)
78	13	1	sand loam	gravel, roots, rocks	10yr 3/2	very dark grayish brown	
	27	2	sand loam	gravel, exfoliating bedrock	2.5y 3/3	dark olive brown	bedrock
86	25	1	silt	gravel, cobbles, roots	10yr 3/2	very dark grayish brown	
	36	2	silt	gravel, cobbles	10yr 4/4	dark yellowish brown	subsoil
87	32	1	silt	gravel, exfoliating bedrock, roots	10yr 3/3	dark brown	bedrock
96	13	1	silt	gravel, exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	bedrock

547041: Phase II Archeological Investigation, Troy Starlight Development

Shovel Test Records

	Ending Depth (cm)	Level	Soil Type	Soil Inclusions	Munsell Color		Termination Reason
99	18	1	silt	exfoliating bedrock, roots, gravel	10yr 3/2	very dark grayish brown	
	36	2	silt	exfoliating bedrock	10yr 4/4	dark yellowish brown	subsoil
102	36	1	silt loam	roots	10yr 3/3	dark brown	impasse (roots)
103	39	1	sand loam	gravel, exfoliating bedrock, rocks	10yr 3/3	dark brown	bedrock
104	10	1	silt sand	gravel, roots	10yr 5/2	grayish brown	
	20	2	silt		10yr 7/1	light gray	
	50	3	silt	roots	10yr 3/2	very dark grayish brown	
	65	4	silt	gravel	10yr 4/4	dark yellowish brown	subsoil
105	29	1	silt	gravel, roots	10yr 3/2	very dark grayish brown	
	42	2	silt	gravel, exfoliating bedrock	10yr 4/4	dark yellowish brown	subsoil
106	47	1	sand loam	gravel, roots	10yr 3/3	dark brown	bedrock
107	32	1	sand loam	gravel, rocks	10yr 3/3	dark brown	bedrock

547041: Phase II Archeological Investigation, Troy Starlight Development

Shovel Test Records

	Ending Depth (cm)	Level	Soil Type	Soil Inclusions	Munsell Color		Termination Reason
1							
70	20	1	silt loam	exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	bedrock
71	25	1	silt loam	exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	
	34	2	silt loam	exfoliating bedrock, roots	7.5yr 4/4	brown	bedrock
81	26	1	silt sand loam	roots, rocks	10yr 3/4	dark yellowish brown	
	43	2	silt loam	rocks	2.5y 5/4	light olive brown	subsoil
82	23	1	silt sand loam	roots, rocks	10yr 3/3	dark brown	
	39	2	silt loam	rocks	2.5y 5/3	light olive brown	subsoil
84	26	1	sand loam	roots, rocks	10yr 3/3	dark brown	
	60	2	silt loam	roots, rocks	10yr 5/3	brown	subsoil
85	28	1	silt	gravel, cobbles, roots	10yr 3/2	very dark grayish brown	
	35	2	silt	gravel, cobbles, roots	10yr 4/4	dark yellowish brown	impasse (rocks)
88	29	1	silt loam	gravel, rocks	10yr 3/3	dark brown	
	42	2	silt loam	gravel	10yr 5/4	yellowish brown	subsoil
89	28	1	sand loam	gravel, rocks	10yr 3/3	dark brown	
	43	2	silt loam	rocks	10yr 5/4	yellowish brown	subsoil
90	37	1	sand loam	gravel, rocks	10yr 3/3	dark brown	
	51	2	sand loam	gravel, rocks	10yr 5/4	yellowish brown	subsoil
91	31	1	silt loam	gravel, roots	10yr 3/3	dark brown	
	49	2	silt loam	gravel, roots	10yr 5/4	yellowish brown	subsoil
94	40	1	sand loam	gravel, roots, rocks	10yr 3/3	dark brown	
	48	2	silt loam	rocks	10yr 5/3	brown	subsoil
95	21	1	silt loam	exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	
	32	2	silt loam	exfoliating bedrock, roots	10yr 4/4	dark yellowish brown	subsoil

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Shovel Test Records

	Ending Depth (cm)	Level	Soil Type	Soil Inclusions	Munsell Color		Termination Reason
2							
72	12	1	silt loam	exfoliating bedrock, roots	10yr 2/2	very dark brown	bedrock
73	27	1	silt loam	exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	bedrock
79	32	1	sand loam	gravel, roots, rocks	10yr 3/3	dark brown	
	47	2	sand loam	gravel, rocks	10yr 4/6	dark yellowish brown	subsoil
80	23	1	sand loam	gravel, roots, rocks	10yr 3/3	dark brown	
	42	2	sand loam	gravel, rocks	10yr 4/4	dark yellowish brown	subsoil
83	33	1	silt loam	exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	
	55	2	silt		10yr 6/4	light yellowish brown	subsoil
92	23	1	silt	gravel, roots	10yr 3/2	very dark grayish brown	impasse (roots)
93	21	1	silt loam	exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	
	32	2	silt loam	exfoliating bedrock, roots	7.5yr 4/4	brown	bedrock

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Shovel Test Records

	Ending Depth (cm)	Level	Soil Type	Soil Inclusions	Munsell Color		Termination Reason
4							
54	12	1	silt	gravel, exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	bedrock
55	11	1	silt	gravel, exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	bedrock
97	37	1	sand loam	gravel, exfoliating bedrock, rocks	10yr 3/3	dark brown	bedrock
98	22	1	silt	gravel, cobbles, roots	10yr 3/3	dark brown	bedrock
100	42	1	sand loam	gravel, exfoliating bedrock, roots, rocks	10yr 3/2	very dark grayish brown	bedrock
101	20	1	silt	gravel, roots, cobbles	10yr 3/3	dark brown	bedrock
5							
59	13	1	silt	roots	10yr 2/2	very dark brown	
	34	2	clay loam	exfoliating bedrock	10yr 4/6	dark yellowish brown	subsoil
6							
8	32	1	silt loam	exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	bedrock
9	20	1	sand loam	gravel, roots, rocks	10yr 3/2	very dark grayish brown	
	45	2	sand loam	gravel, rocks	10yr 4/3	brown	subsoil
15	23	1	silt sand	gravel, exfoliating bedrock, roots	10yr 3/2	very dark grayish brown	bedrock
16	17	1	sand loam	gravel, roots	10yr 3/3	dark brown	
	41	2	sand loam	gravel, rocks	10yr 4/3	brown	subsoil
8							
3	43	1	sand loam	roots, rocks	10yr 3/2	very dark grayish brown	impasse (rocks)
4	34	1	silt loam	exfoliating bedrock, roots	10yr 4/2	dark grayish brown	bedrock

Appendix 2: Artifact Inventory

547041: Phase II Archeological Investigation, Troy Starlight Development

Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
STP 3	1		1	1	6	debitage	chert	308.8
				1.1	*1*	*debitage, block, chert*		*63.1*
				1.2	*3*	*debitage, gangue, chert*		*86.6*
				1.3	*1*	*debitage, quarry flake, chert*		*102.1*
				1.4	*1*	*debitage, block flake, chert*		*57.0*
STP 4	1		2	1	9	debitage	shale	674.8
				1.1	*9*	*debitage, gangue, shale*		*674.8*
STP 5	2		3	1	1	debitage	shale	146.9
				1.1	*1*	*debitage, block, shale*		*146.9*
STP 5	2		3	2	6	debitage	shale	243.2
				2.1	*6*	*debitage, gangue, shale*		*243.2*
STP 7	2		4	1	3	debitage	siliceous shale	199.1
				1.1	*3*	*debitage, gangue, siliceous shale*		*199.1*
STP 7	2		4	2	9	debitage	shale	345.8
				2.1	*9*	*debitage, gangue, shale*		*345.8*
STP 8	1		5	1	1	chipped stone tool	shale	164.7
				1.1	*1*	*chipped stone tool, retouched block, shale*		*164.7*
STP 8	1		5	2	10	debitage	shale	363.1
				2.1	*7*	*debitage, gangue, shale*		*311.4*
				2.2	*3*	*debitage, quarry flake, shale*		*51.7*
STP 9	2		6	1	2	chipped stone tool	chert	194.2
				1.1	*2*	*chipped stone tool, retouched flake, chert*		*194.2*
STP 9	2		6	2	1	debitage	chert	93.3
				2.1	*1*	*debitage, block, chert, green*		*93.3*
STP 9	2		6	3	4	debitage	shale	169.2
				3.1	*4*	*debitage, gangue, shale*		*169.2*

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Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
STP 11	1		7	1	4	debitage	chert	219.3
				1.1	*2*	*debitage, block, chert*		*136.2*
				1.2	*1*	*debitage, shatter, chert*		*18.7*
				1.3	*1*	*debitage, quarry flake, chert*		*64.4*
STP 14	2		8	1	11	debitage	shale	116.6
				1.1	*2*	*debitage, gangue, shale*		*30.6*
				1.2	*1*	*debitage, shatter, shale*		*1.5*
				1.3	*2*	*debitage, quarry flake, shale*		*50.1*
				1.4	*4*	*debitage, block flake, shale*		*28.5*
				1.5	*2*	*debitage, flake, shale*		*5.9*
STP 16	2		9	1	2	debitage	shale	23.9
				1.1	*2*	*debitage, gangue, shale*		*23.9*
STP 16	2		9	2	2	debitage	chert	24.3
				2.1	*1*	*debitage, gangue, chert*		*10.0*
				2.2	*1*	*debitage, quarry flake, chert*		*14.3*
STP 17	1		10	1	2	debitage	chert	440.1
				1.1	*1*	*debitage, quarry flake, chert, green, large, appears detached from core*		*414.9*
				1.2	*1*	*debitage, block flake, chert, green*		*25.2*
STP 17	1		10	2	2	debitage	shale	40.0
				2.1	*1*	*debitage, gangue, shale, green*		*29.3*
				2.2	*1*	*debitage, block flake, shale*		*10.7*
STP 19	1		11	1	1	bottle	glass	4.7
				1.1	*1*	*bottle, glass, green*		*4.7*
STP 19	1		11	2	2	window	glass	8.2
				2.1	*2*	*window, glass, colorless*		*8.2*
STP 19	1		11	3	1	nail	iron alloy	5.8
				3.1	*1*	*nail, complete, iron alloy, cut, bent*		*5.8*
STP 19	1		11	4	1	staple	iron alloy	1.2
				4.1	*1*	*staple, complete, iron alloy*		*1.2*

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Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
STP 19	1		11	5	1	coin	zinc alloy	2.3
				5.1	*1*	*coin, US one-cent, complete, zinc alloy, Diam 1.9 cm, TPQ 1983*		*2.3*
STP 19	1		11	6	2	bottle closure	iron alloy	4.5
				6.1	*2*	*bottle closure, cap, nearly complete, iron alloy*		*4.5*
STP 21	1		12	1	5	debitage	shale	129.6
				1.1	*2*	*debitage, quarry flake, shale*		*113.0*
				1.2	*3*	*debitage, flake, shale*		*16.6*
STP 25	1		13	1	2	debitage	shale	42.6
				1.1	*1*	*debitage, gangue, shale*		*29.4*
				1.2	*1*	*debitage, gangue, shale, green*		*13.2*
STP 25	1		13	2	1	debitage	chert	3.6
				2.1	*1*	*debitage, thinning flake, chert, green, cortex on platform*		*3.6*
STP 31	1		14	1	3	debitage	shale	67.7
				1.1	*2*	*debitage, quarry flake, shale*		*59.5*
				1.2	*1*	*debitage, flake, shale*		*8.2*
STP 31	1		14	2	1	debitage	chert	10.6
				2.1	*1*	*debitage, quarry flake, chert*		*10.6*
STP 39	1		15	1	1	debitage	shale	14.9
				1.1	*1*	*debitage, gangue, shale*		*14.9*
STP 39	1		15	2	1	debitage	chert	8.9
				2.1	*1*	*debitage, block flake, chert*		*8.9*
STP 40	1		16	1	1	chipped stone tool	chert	8.7
				1.1	*1*	*chipped stone tool, retouched flake, chert*		*8.7*
STP 40	1		16	2	1	brick	brick	7.8
				2.1	*1*	*brick, brick, fragment, nondimensional*		*7.8*
STP 40	1		16	3	1	nail	iron alloy	3.0
				3.1	*1*	*nail, iron alloy, wire*		*3.0*

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Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
STP 40	1		16	4	6	unidentified	cast iron	714.2
				4.1	*6*	*unidentified, cast iron, flat and curved fragments*		*714.2*
STP 40	1		16	5	2	unidentified	sandstone	34.7
				5.1	*2*	*unidentified, sandstone, iron-stained, with longitudinal divet*		*34.7*
STP 42	1		17	1	1	electrical insulator	ceramic	25.4
				1.1	*1*	*electrical insulator, ceramic, "/...24-S"*		*25.4*
STP 42	1		17	2	1	vessel	glass	8.0
				2.1	*1*	*vessel, glass, ribbed, colorless*		*8.0*
STP 42	1		17	3	1	bottle	glass	91.6
				3.1	*1*	*bottle, pharmaceutical, complete, glass, embossed, amber, machine made, Illinois Glass Co., "BROWNATONE /KENTONE PHARMACAL Co./COVINGTON, KY.", L 11.8, Diam 4.3 cm, TPQ 1911*		*91.6*
STP 51	1		18	1	2	debitage	chert	111.8
				1.1	*1*	*debitage, block, chert*		*28.5*
				1.2	*1*	*debitage, core, chert, multidirectional*		*83.3*
STP 52	1		19	1	2	debitage	chert	9.1
				1.1	*1*	*debitage, thinning flake, chert*		*4.9*
				1.2	*1*	*debitage, flake, chert*		*4.2*
STP 53	1		20	1	1	debitage	shale	32.3
				1.1	*1*	*debitage, gangue, shale*		*32.3*
STP 53	1		20	2	6	debitage	chert	432.0
				2.1	*1*	*debitage, core, chert, multidirectional*		*332.8*
				2.2	*4*	*debitage, block flake, chert*		*88.9*
				2.3	*1*	*debitage, flake, chert*		*10.3*
STP 55	1		21	1	7	debitage	chert	67.6
				1.1	*2*	*debitage, block flake, chert, green*		*31.8*
				1.2	*4*	*debitage, thinning flake, chert*		*35.3*
				1.3	*1*	*debitage, trim flake, chert*		*0.5*

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Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
STP 59	2		22	1	1	debitage	shale	43.2
				1.1	*1*	*debitage, gangue, shale*		*43.2*
STP 59	2		22	2	10	debitage	chert	536.3
				2.1	*2*	*debitage, block, chert*		*173.9*
				2.2	*1*	*debitage, gangue, chert*		*34.7*
				2.3	*1*	*debitage, core, chert, multidirectional*		*177.9*
				2.4	*4*	*debitage, block flake, chert*		*68.8*
				2.5	*2*	*debitage, flake, chert*		*81.0*
STP 61	1		23	1	1	whiteware	refined earthenware	2.9
				1.1	*1*	*whiteware, flatware, rim, refined earthenware, undecorated*		*2.9*
STP 71	1		33	1	1	debitage	chert	27.8
				1.1	*1*	*debitage, core, chert, multidirectional*		*27.8*
STP 72	1		24	1	4	debitage	chert	71.0
				1.1	*1*	*debitage, gangue, chert*		*52.4*
				1.2	*2*	*debitage, block flake, chert, burned*		*15.5*
				1.3	*1*	*debitage, flake, chert, burned*		*3.1*
STP 73	1		25	1	6	debitage	chert	119.1
				1.1	*1*	*debitage, block, chert*		*99.6*
				1.2	*2*	*debitage, block flake, chert, burned*		*13.0*
				1.3	*3*	*debitage, flake, chert, burned*		*6.5*
STP 77	1		26	1	2	debitage	chert	144.1
				1.1	*2*	*debitage, block, chert*		*144.1*
STP 80	1		27	1	1	debitage	shale	32.5
				1.1	*1*	*debitage, gangue, shale*		*32.5*
STP 80	1		27	2	5	debitage	chert	192.9
				2.1	*1*	*debitage, block, chert*		*150.4*
				2.2	*2*	*debitage, block flake, chert*		*33.9*
				2.3	*2*	*debitage, flake, chert*		*8.6*

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Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
STP 81	1		28	1	2	debitage	siliceous shale	3.4
				1.1	*2*	*debitage, trim flake, siliceous shale*		*3.4*
STP 81	1		28	2	7	debitage	chert	41.8
				2.1	*1*	*debitage, block, chert*		*22.2*
				2.2	*1*	*debitage, block flake, chert*		*8.9*
				2.3	*2*	*debitage, thinning flake, chert, green*		*6.9*
				2.4	*2*	*debitage, thinning flake, chert*		*2.7*
				2.5	*1*	*debitage, flake, chert, appears burned*		*1.1*
STP 82	1		29	1	4	debitage	chert	18.6
				1.1	*3*	*debitage, thinning flake, chert*		*14.0*
				1.2	*1*	*debitage, shatter, chert*		*4.6*
STP 83	1		30	1	6	debitage	chert	314.5
				1.1	*2*	*debitage, block, chert*		*297.6*
				1.2	*2*	*debitage, shatter, chert*		*3.2*
				1.3	*1*	*debitage, thinning flake, chert*		*1.1*
				1.4	*1*	*debitage, flake, chert, green*		*12.6*
STP 84	2		31	1	1	chipped stone tool	chert	8.0
				1.1	*1*	*chipped stone tool, retouched flake, chert, gray*		*8.0*
STP 84	2		31	2	3	debitage	siliceous shale	6.2
				2.1	*1*	*debitage, trim flake, siliceous shale*		*0.5*
				2.2	*1*	*debitage, thinning flake, siliceous shale*		*2.2*
				2.3	*1*	*debitage, flake, siliceous shale*		*3.5*
STP 84	2		31	3	4	debitage	chert	15.4
				3.1	*1*	*debitage, shatter, chert*		*2.9*
				3.2	*1*	*debitage, block flake, chert*		*5.2*
				3.3	*2*	*debitage, thinning flake, chert*		*7.3*
STP 84	2		31	4	3	debitage	shale	10.6
				4.1	*2*	*debitage, shatter, shale*		*4.6*
				4.2	*1*	*debitage, flake, shale*		*6.0*
STP 85	1		32	1	1	debitage	chert	3.2

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Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
				1.1	*1*	*debitage, thinning flake, chert, gray*		*3.2*
STP 89	2		34	1	1	chipped stone tool	chert	20.6
				1.1	*1*	*chipped stone tool, retouched flake, chert*		*20.6*
STP 89	2		34	2	7	debitage	chert	209.8
				2.1	*2*	*debitage, core, chert, multidirectional*		*186.0*
				2.2	*1*	*debitage, block flake, chert*		*15.8*
				2.3	*2*	*debitage, trim flake, chert, green*		*0.5*
				2.4	*1*	*debitage, trim flake, chert*		*0.2*
				2.5	*1*	*debitage, flake, chert, gray, burned*		*7.3*
STP 89	2		34	3	2	debitage	shale	22.0
				3.1	*1*	*debitage, block flake, shale*		*21.4*
				3.2	*1*	*debitage, trim flake, shale*		*0.6*
STP 94	1		35	1	1	mineral sample	quartzite	209.5
STP 94	1		35	2	1	chipped stone tool	chert	48.6
				2.1	*1*	*chipped stone tool, retouched flake, chert, green*		*48.6*
STP 97	1		36	1	1	chipped stone tool	chert	105.8
				1.1	*1*	*chipped stone tool, biface, stage 1, complete, chert, green, L 6.9, W 5.4, T 2.4 cm*		*105.8*
STP 97	1		36	2	1	debitage	chert	6.1
				2.1	*1*	*debitage, block flake, chert, green*		*6.1*
STP 102	1		37	1	2	bottle	glass	87.7
				1.1	*1*	*bottle, oval-shaped, base, glass, ribbed, colorless, machine made, Hazel-Atlas Glass Co., 1923-1982, poss. ketchup, TPQ 1923*		*59.4*
				1.2	*1*	*bottle, finish, glass, colorless, machine made, threaded*		*28.3*
STP 104	2		38	1	1	bottle	glass and iron	88.7
				1.1	*1*	*bottle, pharmaceutical, complete, glass, embossed, brown, lipping-tooled, rectangular, with cap and liquid contents, "6201 1/2/30 S 811" on base, L 9.2, W 4.0, T 2.5 cm*		*88.7*
STP 104	2		38	2	3	bottle	glass	491.3

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Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
				2.1	*1*	*bottle, pharmaceutical, complete, glass, embossed, brown, machine made, Owens-Illinois Glass Co., threaded finish, L 9.1, W 4.8, T 3.0 cm, TPQ 1929*		*79.3*
				2.2	*1*	*bottle, pharmaceutical, nearly complete, glass, embossed, colorless, machine made, The Knox Glass Bottle Co., finish partially missing, "3iv", 1917-1920s, TPQ 1917*		*129.9*
				2.3	*1*	*bottle, condiment, complete, glass, molded decoration, colorless, machine made, Owens-Illinois Glass Co., Duraglas, Mazola Oil Company, "MAZOLA/REG. U.S. PAT. OFF./Salad Oil", threaded finish, for corn oil, round bottle, L 18.0, Diam 6.5 cm, TPQ 1940*		*282.1*
STP 104	2		38	3	1	faunal bone	bone	16.9
				3.1	*1*	*faunal bone, mammal, long bone, bone, sawn*		*16.9*
U 1	1		39	1	1	rough stone tool	quartzite	250.2
				1.1	*1*	*rough stone tool, hammerstone, complete, quartzite*		*250.2*
U 1	1		39	2	3	chipped stone tool	chert	125.2
				2.1	*1*	*chipped stone tool, biface, stage 1, complete, chert*		*51.8*
				2.2	*1*	*chipped stone tool, biface, stage 1, complete, chert, green*		*48.2*
				2.3	*1*	*chipped stone tool, retouched flake, chert*		*25.2*
U 1	1		39	3	4	debitage	siliceous shale	114.3
				3.1	*2*	*debitage, gangue, siliceous shale*		*112.0*
				3.2	*1*	*debitage, trim flake, siliceous shale*		*0.7*
				3.3	*1*	*debitage, flake, siliceous shale*		*1.6*
U 1	1		39	4	50	debitage	chert	1,519.9
				4.1	*1*	*debitage, block, chert*		*589.7*
				4.2	*13*	*debitage, gangue, chert*		*794.5*
				4.3	*6*	*debitage, shatter, chert*		*31.6*
				4.4	*6*	*debitage, block flake, chert*		*67.1*
				4.5	*18*	*debitage, thinning flake, chert*		*29.9*
				4.6	*4*	*debitage, trim flake, chert*		*0.7*
				4.7	*2*	*debitage, flake, chert*		*6.4*
U 1	1		39	5	22	debitage	shale	81.6
				5.1	*5*	*debitage, shatter, shale*		*31.5*
				5.2	*4*	*debitage, block flake, shale*		*25.4*
				5.3	*4*	*debitage, thinning flake, shale*		*7.0*
				5.4	*9*	*debitage, flake, shale*		*17.7*
U 1	1		39	6	2	fire-cracked rock	sandstone	118.0
U 1	1		39	7	5	fire-cracked rock	quartzite	422.7
U 1	1		39	8	6	bottle	glass	120.2

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Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
				8.1	*1*	*bottle, oval-shaped, base, glass, embossed, colorless, machine made, Owens-Illinois Glass Co., TPQ 1929*		*72.0*
				8.2	*1*	*bottle, finish, glass, colorless, machine made*		*36.0*
				8.3	*3*	*bottle, body, glass, colorless*		*7.0*
				8.4	*1*	*bottle, glass, brown, mold made*		*5.2*
U 1	1		39	9	1	window	glass	14.0
				9.1	*1*	*window, glass, pale aqua*		*14.0*
U 1	1		39	10	1	shoe/shoe part	leather	25.7
				10.1	*1*	*shoe/shoe part, sole, nearly complete, leather, left shoe, likely child, W 6.8, T 0.3 cm*		*25.7*
Stratum 2								
U 1	2		40	1	8	chipped stone tool	chert	300.0
				1.1	*1*	*chipped stone tool, retouched block, chert*		*91.6*
				1.2	*1*	*chipped stone tool, retouched flake, chert, green*		*14.9*
				1.3	*6*	*chipped stone tool, retouched flake, chert*		*193.5*
U 1	2		40	2	81	debitage	chert	187.9
				2.1	*1*	*debitage, gangue, chert*		*8.0*
				2.2	*1*	*debitage, shatter, chert, green*		*23.0*
				2.3	*2*	*debitage, shatter, chert*		*3.9*
				2.4	*6*	*debitage, block flake, chert*		*44.5*
				2.5	*43*	*debitage, thinning flake, chert*		*96.1*
				2.6	*23*	*debitage, trim flake, chert*		*6.8*
				2.7	*5*	*debitage, flake, chert*		*5.6*
U 1	2		40	3	3	debitage	quartzite	3.6
				3.1	*2*	*debitage, trim flake, quartzite*		*0.8*
				3.2	*1*	*debitage, flake, quartzite*		*2.8*
U 1	2		40	4	46	debitage	shale	538.0
				4.1	*5*	*debitage, gangue, shale*		*274.3*
				4.2	*6*	*debitage, shatter, shale*		*70.1*
				4.3	*6*	*debitage, block flake, shale*		*81.5*
				4.4	*12*	*debitage, thinning flake, shale*		*22.5*
				4.5	*7*	*debitage, trim flake, shale*		*3.7*
				4.6	*10*	*debitage, flake, shale*		*85.9*
U 1	2		40	5	6	debitage	siliceous shale	116.8
				5.1	*2*	*debitage, shatter, siliceous shale*		*104.5*
				5.2	*4*	*debitage, thinning flake, siliceous shale*		*12.3*
U 1	2		40	6	1	fire-cracked rock	chert	42.5

547041: Phase II Archeological Investigation, Troy Starlight Development

Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
U 1	2		40	7	7	fire-cracked rock	sandstone	598.3
U 1	2		40	8	2	fire-cracked rock	quartzite	434.2
Stratum 2								
U 1	3		41	1	12	debitage	shale	123.5
				1.1	*1*	*debitage, gangue, shale*		*19.3*
				1.2	*2*	*debitage, shatter, shale*		*70.3*
				1.3	*1*	*debitage, block flake, shale*		*15.1*
				1.4	*2*	*debitage, trim flake, shale*		*0.5*
				1.5	*6*	*debitage, flake, shale*		*18.3*
U 1	3		41	2	3	debitage	siliceous shale	12.3
				2.1	*1*	*debitage, gangue, siliceous shale, red*		*9.8*
				2.2	*1*	*debitage, thinning flake, siliceous shale*		*1.8*
				2.3	*1*	*debitage, trim flake, siliceous shale*		*0.7*
U 1	3		41	3	39	debitage	chert	192.3
				3.1	*1*	*debitage, block, chert*		*104.2*
				3.2	*1*	*debitage, shatter, chert*		*31.5*
				3.3	*2*	*debitage, thinning flake, chert, gray*		*5.6*
				3.4	*26*	*debitage, thinning flake, chert*		*47.7*
				3.5	*7*	*debitage, trim flake, chert*		*1.9*
				3.6	*2*	*debitage, flake, chert*		*1.4*
U 1	3		41	4	1	debitage	quartzite	31.6
				4.1	*1*	*debitage, quarry flake, quartzite, cortex*		*31.6*
U 1	3		41	5	4	fire-cracked rock	quartzite	112.6
Stratum 2								
U 1	4		42	1	3	debitage	shale	59.2
				1.1	*1*	*debitage, gangue, shale*		*58.0*
				1.2	*2*	*debitage, flake, shale*		*1.2*
U 1	4		42	2	20	debitage	chert	36.1
				2.1	*1*	*debitage, block flake, chert, gray*		*14.8*
				2.2	*11*	*debitage, thinning flake, chert*		*14.0*
				2.3	*1*	*debitage, thinning flake, chert, gray*		*1.1*
				2.4	*5*	*debitage, trim flake, chert*		*1.9*
				2.5	*2*	*debitage, flake, chert*		*4.3*

547041: Phase II Archeological Investigation, Troy Starlight Development

Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
Stratum 2								
U 1	5		43	1	21	debitage	chert	26.2
				1.1	*2*	*debitage, shatter, chert*		*0.7*
				1.2	*1*	*debitage, block flake, chert*		*4.7*
				1.3	*9*	*debitage, thinning flake, chert*		*16.0*
				1.4	*1*	*debitage, thinning flake, chert, green*		*1.2*
				1.5	*7*	*debitage, trim flake, chert*		*2.0*
				1.6	*1*	*debitage, flake, chert*		*1.6*
U 1	5		43	2	8	debitage	shale	91.0
				2.1	*2*	*debitage, gangue, shale*		*70.0*
				2.2	*1*	*debitage, shatter, shale*		*6.3*
				2.3	*2*	*debitage, block flake, shale*		*6.4*
				2.4	*3*	*debitage, flake, shale*		*8.3*
U 1	5		43	3	1	fire-cracked rock	quartzite	58.5
U 1	5		43	4	1	fire-cracked rock	sandstone	4.9
U 1	5		43	5	1	charcoal	charcoal	3.8
Stratum 2								
U 1	6		44	1	3	debitage	chert	9.5
				1.1	*1*	*debitage, block flake, chert*		*6.3*
				1.2	*2*	*debitage, thinning flake, chert*		*3.2*
U 1	6		44	2	5	debitage	shale	17.8
				2.1	*1*	*debitage, shatter, shale, burned*		*5.5*
				2.2	*1*	*debitage, shatter, shale*		*6.6*
				2.3	*3*	*debitage, thinning flake, shale*		*5.7*
U 1	6		44	3	1	fire-cracked rock	sandstone	92.4
U 1	7		93	1	1	debitage	chert	1.0
				1.1	*1*	*debitage, thinning flake, chert*		*1.0*
Stratum 1								
U 2	1		45	1	7	debitage	shale	96.5

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Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
				1.1	*2*	*debitage, shatter, shale*		*29.0*
				1.2	*1*	*debitage, core, complete, shale, multidirectional*		*63.1*
				1.3	*4*	*debitage, flake, shale*		*4.4*
U 2	1		45	2	1	debitage	siliceous shale	1.3
				2.1	*1*	*debitage, thinning flake, siliceous shale*		*1.3*
U 2	1		45	3	2	debitage	chert	2.0
				3.1	*1*	*debitage, thinning flake, chert*		*1.4*
				3.2	*1*	*debitage, trim flake, chert*		*0.6*
U 2	1		45	4	1	unidentified	sandstone	25.6
U 2	1		45	5	1	mineral sample	sandstone	64.1
U 2	1		45	6	2	bottle	glass	22.2
				6.1	*2*	*bottle, glass, colorless, mold made*		*22.2*
U 2	1		45	7	1	nail	iron alloy	4.3
				7.1	*1*	*nail, iron alloy, cut*		*4.3*
U 2	2		46	1	12	debitage	chert	15.3
				1.1	*10*	*debitage, thinning flake, chert*		*14.8*
				1.2	*2*	*debitage, trim flake, chert*		*0.5*
U 2	2		46	2	3	debitage	siliceous shale	8.8
				2.1	*2*	*debitage, block flake, siliceous shale*		*7.1*
				2.2	*1*	*debitage, thinning flake, siliceous shale*		*1.7*
U 2	2		46	3	4	debitage	shale	6.9
				3.1	*1*	*debitage, shatter, shale*		*4.3*
				3.2	*2*	*debitage, thinning flake, shale*		*1.6*
				3.3	*1*	*debitage, flake, shale*		*1.0*
U 2	2		46	4	1	fire-cracked rock	sandstone	3.8
U 2	3		47	1	10	debitage	shale	43.9
				1.1	*1*	*debitage, block, shale*		*32.5*
				1.2	*2*	*debitage, block flake, shale*		*4.5*
				1.3	*2*	*debitage, thinning flake, shale*		*1.8*
				1.4	*5*	*debitage, flake, shale*		*5.1*
U 2	3		47	2	23	debitage	chert	30.0

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Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
				2.1	*1*	*debitage, block flake, chert*		*8.7*
				2.2	*7*	*debitage, thinning flake, chert*		*12.3*
				2.3	*2*	*debitage, thinning flake, chert, gray*		*3.7*
				2.4	*10*	*debitage, trim flake, chert*		*3.5*
				2.5	*1*	*debitage, trim flake, chert, green*		*0.2*
				2.6	*2*	*debitage, flake, chert*		*1.6*
U 2	4		48	1	1	chipped stone tool	siliceous shale	18.2
				1.1	*1*	*chipped stone tool, biface, stage 2, complete, siliceous shale, L 7.1, W 2.6, T 0.9 cm*		*18.2*
U 2	4		48	2	1	chipped stone tool	chert	16.6
				2.1	*1*	*chipped stone tool, retouched flake, chert*		*16.6*
U 2	4		48	3	37	debitage	chert	66.0
				3.1	*3*	*debitage, shatter, chert*		*22.3*
				3.2	*1*	*debitage, thinning flake, chert, green*		*1.0*
				3.3	*20*	*debitage, thinning flake, chert*		*38.3*
				3.4	*10*	*debitage, trim flake, chert*		*3.4*
				3.5	*1*	*debitage, trim flake, chert, orange*		*0.2*
				3.6	*2*	*debitage, flake, chert*		*0.8*
U 2	4		48	4	3	debitage	siliceous shale	6.7
				4.1	*3*	*debitage, thinning flake, siliceous shale*		*6.7*
U 2	4		48	5	4	debitage	shale	5.9
				5.1	*4*	*debitage, flake, shale*		*5.9*
U 2	4		48	6	6	fire-cracked rock	quartzite	305.4
U 2	4		48	7	1	fire-cracked rock	sandstone	56.8
U 2	4		48	8	1	mineral sample	quartzite	216.8
U 2	6		53	1	3	debitage	chert	3.3
				1.1	*1*	*debitage, block flake, chert*		*2.7*
				1.2	*1*	*debitage, thinning flake, chert*		*0.4*
				1.3	*1*	*debitage, trim flake, chert*		*0.2*
U 2	6		53	2	2	debitage	shale	6.2
				2.1	*2*	*debitage, thinning flake, shale*		*6.2*

Stratum 1

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Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
U 3	1		49	1	2	rough stone tool	quartzite	1,642.4
				1.1	*1*	*rough stone tool, hammerstone, complete, quartzite*		*277.4*
				1.2	*1*	*rough stone tool, extraction hammerstone, quartzite, fragment, fire-cracked*		*1,365.0*
U 3	1		49	2	2	chipped stone tool	chert	45.5
				2.1	*2*	*chipped stone tool, retouched flake, chert*		*45.5*
U 3	1		49	3	1	chipped stone tool	shale	164.0
				3.1	*1*	*chipped stone tool, retouched block, shale*		*164.0*
U 3	1		49	4	1	chipped stone tool	siliceous shale	5.8
				4.1	*1*	*chipped stone tool, retouched flake, siliceous shale*		*5.8*
U 3	1		49	5	6	debitage	siliceous shale	25.8
				5.1	*3*	*debitage, thinning flake, siliceous shale*		*10.6*
				5.2	*3*	*debitage, flake, siliceous shale*		*15.2*
U 3	1		49	6	25	debitage	chert	409.0
				6.1	*1*	*debitage, core, complete, chert, gray, multidirectional*		*265.9*
				6.2	*1*	*debitage, core, complete, chert, multidirectional*		*50.8*
				6.3	*1*	*debitage, shatter, chert*		*25.6*
				6.4	*1*	*debitage, block flake, chert*		*3.5*
				6.5	*1*	*debitage, thinning flake, chert, cortex*		*3.2*
				6.6	*16*	*debitage, thinning flake, chert*		*52.1*
				6.7	*2*	*debitage, trim flake, chert*		*0.7*
				6.8	*2*	*debitage, flake, chert*		*7.2*
U 3	1		49	7	48	debitage	shale	346.7
				7.1	*4*	*debitage, gangue, shale*		*186.6*
				7.2	*3*	*debitage, shatter, shale*		*18.2*
				7.3	*26*	*debitage, thinning flake, shale*		*102.8*
				7.4	*15*	*debitage, flake, shale*		*39.1*
U 3	1		49	8	6	fire-cracked rock	sandstone	581.9
U 3	1		49	9	6	fire-cracked rock	quartzite	518.0
U 3	1		49	10	1	bottle	glass	9.4
				10.1	*1*	*bottle, glass, pale aqua*		*9.4*
Stratum 2								
U 3	2		50	1	4	chipped stone tool	chert	47.1
				1.1	*4*	*chipped stone tool, retouched flake, chert*		*47.1*

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Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
U 3	2		50	2	6	debitage	shale	31.9
				2.1	*2*	*debitage, shatter, shale*		*21.3*
				2.2	*1*	*debitage, block flake, shale*		*5.7*
				2.3	*1*	*debitage, thinning flake, shale*		*2.3*
				2.4	*2*	*debitage, flake, shale*		*2.6*
U 3	2		50	3	13	debitage	siliceous shale	175.2
				3.1	*1*	*debitage, block, siliceous shale*		*68.2*
				3.2	*1*	*debitage, gangue, siliceous shale*		*46.0*
				3.3	*1*	*debitage, shatter, siliceous shale*		*20.1*
				3.4	*1*	*debitage, block flake, siliceous shale*		*31.7*
				3.5	*5*	*debitage, thinning flake, siliceous shale*		*6.6*
				3.6	*4*	*debitage, flake, siliceous shale*		*2.6*
U 3	2		50	4	57	debitage	chert	661.5
				4.1	*2*	*debitage, block, chert, appear burned*		*274.2*
				4.2	*1*	*debitage, block, chert*		*77.1*
				4.3	*1*	*debitage, gangue, chert, appears burned*		*44.8*
				4.4	*10*	*debitage, block flake, chert*		*154.9*
				4.5	*28*	*debitage, thinning flake, chert*		*80.8*
				4.6	*4*	*debitage, thinning flake, chert, green*		*17.5*
				4.7	*8*	*debitage, trim flake, chert*		*3.1*
				4.8	*3*	*debitage, flake, chert*		*9.1*
U 3	2		50	5	1	fire-cracked rock	sandstone	40.6
U 3	2		50	6	8	fire-cracked rock	quartzite	285.1
Stratum 2								
U 3	3		51	1	1	chipped stone tool	chert	39.1
				1.1	*1*	*chipped stone tool, retouched flake, chert, heavily patinated*		*39.1*
U 3	3		51	2	1	debitage	quartz	19.9
				2.1	*1*	*debitage, block flake, quartz*		*19.9*
U 3	3		51	3	1	debitage	shale	0.5
				3.1	*1*	*debitage, flake, shale*		*0.5*
U 3	3		51	4	5	debitage	siliceous shale	23.6
				4.1	*1*	*debitage, block flake, siliceous shale*		*13.3*
				4.2	*3*	*debitage, thinning flake, siliceous shale*		*7.6*
				4.3	*1*	*debitage, flake, siliceous shale*		*2.7*

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Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
U 3	3		51	5	9	debitage	chert	87.7
				5.1	*2*	*debitage, shatter, chert*		*24.4*
				5.2	*1*	*debitage, block flake, chert, cortex*		*15.2*
				5.3	*3*	*debitage, block flake, chert, green*		*40.9*
				5.4	*3*	*debitage, thinning flake, chert*		*7.2*
U 3	3		51	6	1	fire-cracked rock	quartzite	176.5
U 3	3		51	7	2	fire-cracked rock	sandstone	371.5
Stratum 2								
U 3	4		52	1	11	debitage	chert	9.0
				1.1	*6*	*debitage, thinning flake, chert*		*6.6*
				1.2	*3*	*debitage, trim flake, chert*		*0.9*
				1.3	*1*	*debitage, trim flake, chert, green*		*0.2*
				1.4	*1*	*debitage, flake, chert*		*1.3*
U 3	4		52	2	2	debitage	shale	2.6
				2.1	*2*	*debitage, flake, shale*		*2.6*
Interface, 20cm BS, 24cm W & 26cm N of SE corner								
U 3	1		71	1	1	projectile point	chert	25.9
				1.1	*1*	*projectile point, Genesee, complete, chert, stemmed, straight base, stem has parallel sides, stem width = 2.0cm, L 8.5, W 3.3, T 1.1 cm*		*25.9*
U 4	1		54	1	1	chipped stone tool	chert	9.1
				1.1	*1*	*chipped stone tool, retouched flake, chert, green*		*9.1*
U 4	1		54	2	46	debitage	chert	557.1
				2.1	*1*	*debitage, block, chert*		*245.4*
				2.2	*1*	*debitage, core, complete, chert, multidirectional*		*69.6*
				2.3	*2*	*debitage, block flake, chert*		*18.9*
				2.4	*8*	*debitage, block flake, chert, green*		*135.7*
				2.5	*16*	*debitage, thinning flake, chert*		*19.1*
				2.6	*6*	*debitage, thinning flake, chert, green*		*16.7*
				2.7	*5*	*debitage, shatter, chert, green*		*24.1*
				2.8	*7*	*debitage, flake, chert, green*		*27.6*
U 4	1		54	3	50	debitage	shale	450.4

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Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
				3.1	*1*	*debitage, quarry flake, shale, green*		*112.2*
				3.2	*2*	*debitage, shatter, shale*		*19.1*
				3.3	*1*	*debitage, shatter, shale, orange*		*11.2*
				3.4	*5*	*debitage, shatter, shale, green*		*37.8*
				3.5	*9*	*debitage, block flake, shale, green*		*151.1*
				3.6	*1*	*debitage, thinning flake, shale*		*4.1*
				3.7	*7*	*debitage, flake, shale*		*15.8*
				3.8	*24*	*debitage, flake, shale, green*		*99.1*
U 4	1		54	4	1	fire-cracked rock	quartzite	11.1
U 4	1		54	5	1	porcelain	porcelain	10.3
				5.1	*1*	*porcelain, unidentified, rim, porcelain, glazed, brown*		*10.3*
U 4	1		54	6	1	shell	shell	4.5
				6.1	*1*	*shell, clam, shell*		*4.5*
U 4	2		55	1	10	debitage	chert	248.6
				1.1	*1*	*debitage, core, complete, chert, multidirectional*		*223.0*
				1.2	*1*	*debitage, thinning flake, chert, green*		*2.6*
				1.3	*6*	*debitage, thinning flake, chert*		*20.1*
				1.4	*2*	*debitage, flake, chert*		*2.9*
U 4	2		55	2	5	debitage	shale	28.6
				2.1	*1*	*debitage, gangue, shale*		*19.0*
				2.2	*1*	*debitage, flake, shale, green*		*5.1*
				2.3	*3*	*debitage, flake, shale*		*4.5*
U 4	2		55	3	1	debitage	quartzite	53.7
				3.1	*1*	*debitage, block flake, quartzite*		*53.7*
U 4	2		55	4	1	fire-cracked rock	quartzite	113.9
Stratum 1								
U 4	3		56	1	1	chipped stone tool	chert	13.0
				1.1	*1*	*chipped stone tool, retouched flake, chert*		*13.0*
U 4	3		56	2	3	debitage	chert	6.3
				2.1	*2*	*debitage, thinning flake, chert*		*2.9*
				2.2	*1*	*debitage, flake, chert*		*3.4*
U 4	3		56	3	3	debitage	shale	30.0

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Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
				3.1	*1*	*debitage, gangue, shale*		*23.3*
				3.2	*2*	*debitage, flake, shale*		*6.7*
Stratum 1								
U 4	4		57	1	3	debitage	chert	12.6
				1.1	*1*	*debitage, thinning flake, chert, green*		*7.2*
				1.2	*2*	*debitage, thinning flake, chert*		*5.4*
U 4	4		57	2	2	debitage	shale	5.2
				2.1	*1*	*debitage, shatter, shale*		*2.9*
				2.2	*1*	*debitage, flake, shale*		*2.3*
U 4	5		58	1	2	debitage	chert	2.5
				1.1	*2*	*debitage, thinning flake, chert*		*2.5*
U 4	5		58	2	8	debitage	shale	57.1
				2.1	*4*	*debitage, block flake, shale*		*39.1*
				2.2	*4*	*debitage, flake, shale*		*18.0*
U 4	6		59	1	1	debitage	chert	8.2
				1.1	*1*	*debitage, thinning flake, chert*		*8.2*
Stratum 1								
U 5	1		61	1	1	chipped stone tool	chert	1.7
				1.1	*1*	*chipped stone tool, retouched flake, chert*		*1.7*
U 5	1		61	2	142	debitage	chert	2,858.9
				2.1	*4*	*debitage, block, chert, green*		*690.8*
				2.2	*25*	*debitage, gangue, chert, green*		*868.7*
				2.3	*19*	*debitage, shatter, chert, green*		*83.8*
				2.4	*1*	*debitage, core, complete, chert, multidirectional*		*171.9*
				2.5	*13*	*debitage, quarry flake, chert, green*		*530.2*
				2.6	*4*	*debitage, block flake, chert, green*		*36.6*
				2.7	*3*	*debitage, block flake, chert, gray*		*21.5*
				2.8	*18*	*debitage, thinning flake, chert, green*		*57.1*
				2.9	*2*	*debitage, trim flake, chert, green*		*1.0*
				2.10	*2*	*debitage, trim flake, chert*		*1.1*
				2.11	*5*	*debitage, flake, chert, gray*		*21.0*
				2.12	*46*	*debitage, flake, chert, green*		*375.2*

547041: Phase II Archeological Investigation, Troy Starlight Development

Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
U 6	1		62	1	1	rough stone tool	quartzite	161.9
				1.1	*1*	*rough stone tool, hammerstone, complete, quartzite, L 6.6, W 4.9, T 3.7 cm*		*161.9*
U 6	1		62	2	2	chipped stone tool	chert	23.5
				2.1	*1*	*chipped stone tool, biface, stage 2, distal fragment, chert, W 3.0, T 1.0 cm*		*12.2*
				2.2	*1*	*chipped stone tool, retouched flake, chert*		*11.3*
U 6	1		62	3	1	debitage	siliceous shale	18.4
				3.1	*1*	*debitage, block flake, siliceous shale*		*18.4*
U 6	1		62	4	2	debitage	chert	44.3
				4.1	*1*	*debitage, core, chert, multidirectional, fragment, cortex*		*44.2*
				4.2	*1*	*debitage, trim flake, chert*		*0.1*
U 6	1		62	5	6	debitage	shale	40.8
				5.1	*2*	*debitage, shatter, shale*		*8.2*
				5.2	*4*	*debitage, block flake, shale*		*32.6*
U 6	1		62	6	2	shell	shell	10.8
				6.1	*2*	*shell, clam, shell*		*10.8*
U 6	2		63	1	1	chipped stone tool	chert	1.6
				1.1	*1*	*chipped stone tool, retouched flake, chert*		*1.6*
U 6	2		63	2	2	debitage	chert	1.1
				2.1	*1*	*debitage, thinning flake, chert*		*0.7*
				2.2	*1*	*debitage, trim flake, chert*		*0.4*
U 6	2		63	3	9	debitage	shale	154.5
				3.1	*4*	*debitage, shatter, shale*		*91.9*
				3.2	*4*	*debitage, block flake, shale*		*51.4*
				3.3	*1*	*debitage, flake, shale*		*11.2*
U 6	3		64	1	1	rough stone tool	sandstone	101.1
				1.1	*1*	*rough stone tool, hammerstone, nearly complete, sandstone, spall missing, L 6.2, W 4.2, T 3.3 cm*		*101.1*
U 6	3		64	2	1	debitage	siliceous shale	5.6
				2.1	*1*	*debitage, flake, siliceous shale*		*5.6*
U 6	3		64	3	2	debitage	shale	7.8
				3.1	*2*	*debitage, flake, shale*		*7.8*

547041: Phase II Archeological Investigation, Troy Starlight Development

Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
U 7	1		65	1	2	chipped stone tool	chert	233.5
				1.1	*1*	*chipped stone tool, retouched block, chert*		*206.0*
				1.2	*1*	*chipped stone tool, retouched flake, chert, green*		*27.5*
U 7	1		65	2	4	debitage	shale	10.3
				2.1	*4*	*debitage, flake, shale*		*10.3*
U 7	1		65	3	10	debitage	chert	36.6
				3.1	*2*	*debitage, shatter, chert, green*		*10.7*
				3.2	*2*	*debitage, shatter, chert*		*6.6*
				3.3	*3*	*debitage, block flake, chert, green*		*15.5*
				3.4	*1*	*debitage, thinning flake, chert, green*		*0.8*
				3.5	*1*	*debitage, flake, chert, green*		*1.2*
				3.6	*1*	*debitage, flake, chert*		*1.8*
Stratum 1								
U 8	1		66	1	3	chipped stone tool	chert	150.0
				1.1	*1*	*chipped stone tool, retouched flake, chert, green, cortex, large*		*137.9*
				1.2	*1*	*chipped stone tool, retouched flake, chert, green*		*4.3*
				1.3	*1*	*chipped stone tool, retouched flake, chert, cortex*		*7.8*
U 8	1		66	2	1	unidentified	glass	25.2
				2.1	*1*	*unidentified, glass, ribbed, colorless, mold made, thick, electrical insulator?*		*25.2*
U 8	1		66	3	1	nail	iron alloy	9.8
				3.1	*1*	*nail, complete, iron alloy, wire*		*9.8*
U 8	1		66	4	1	wire	iron alloy	9.9
				4.1	*1*	*wire, iron alloy, twisted*		*9.9*
U 8	1		66	5	1	hinge	iron alloy	49.9
				5.1	*1*	*hinge, flag, complete, iron alloy, 3-leaf bi-fold, L 8.8, W 3.4 cm*		*49.9*
U 8	1		66	6	2	tile	asbestos	14.3
				6.1	*2*	*tile, asbestos, fragment*		*14.3*
Stratum 1								
U 8	2		67	1	2	chipped stone tool	chert	44.7
				1.1	*1*	*chipped stone tool, biface, stage 1, chert, green*		*36.4*
				1.2	*1*	*chipped stone tool, retouched flake, chert*		*8.3*

547041: Phase II Archeological Investigation, Troy Starlight Development

Artifact Inventory

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
U 8	2		67	2	3	debitage	shale	28.9
				2.1	*1*	*debitage, thinning flake, shale*		*5.8*
				2.2	*1*	*debitage, flake, shale*		*5.1*
				2.3	*1*	*debitage, flake, shale, green*		*18.0*
U 8	2		67	3	1	debitage	chert	9.9
				3.1	*1*	*debitage, shatter, chert, green*		*9.9*
U 8	2		67	4	1	unidentified	quartzite	163.5
				4.1	*1*	*unidentified, spall, quartzite, poss. flake*		*163.5*
U 8	2		67	5	1	bottle	glass	8.3
				5.1	*1*	*bottle, oval-shaped, base, glass, embossed, colorless, mold made, "...& S"*		*8.3*
U 8	2		67	6	1	nail	iron alloy	4.6
				6.1	*1*	*nail, complete, iron alloy, wire*		*4.6*
U 8	2		67	7	1	screw	iron alloy	5.5
				7.1	*1*	*screw, complete, iron alloy*		*5.5*
U 8	2		67	8	2	asphalt	asphalt	1.7
U 8	2		67	9	1	unidentified	plastic and metal	1.7
				9.1	*1*	*unidentified, plastic and metal, plastic rod with two steel staples*		*1.7*
Stratum 1								
U 8	3		68	1	1	debitage	chert	8.5
				1.1	*1*	*debitage, block flake, chert*		*8.5*
U 8	3		68	2	2	debitage	shale	22.5
				2.1	*2*	*debitage, block flake, shale*		*22.5*
U 8	3		68	3	1	bottle	glass	10.7
				3.1	*1*	*bottle, base, glass, embossed, brown, machine made, Owens-Illinois Glass Co., TPQ 1954*		*10.7*
U 8	3		68	4	3	tile	asbestos	66.1
				4.1	*3*	*tile, asbestos, fragment*		*66.1*
U 8	3		68	5	1	wire	iron alloy	255.2
				5.1	*1*	*wire, iron alloy, coiled*		*255.2*

547041: Phase II Archeological Investigation, Troy Starlight Development

Artifact Inventory, Area 1

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
4m SW of Unit 3								
SC			87	1	1	fire-cracked rock	quartzite	467.6
1m N of Unit 1								
SC 2			72	1	1	rough stone tool	quartzite	775.0
				1.1	*1*	*rough stone tool, hammerstone, complete, quartzite, L 9.7, W 8.6, T 6.3 cm*		*775.0*
1m W of Unit 1								
SC 2			73	1	1	fire-cracked rock	quartzite	440.7
10m SE of STP 82								
SC 10			74	1	1	rough stone tool	quartzite	177.5
				1.1	*1*	*rough stone tool, hammerstone, quartzite, fragment*		*177.5*
SC 10			74	2	8	chipped stone tool	chert	155.4
				2.1	*8*	*chipped stone tool, retouched flake, chert*		*155.4*
SC 10			74	3	1	chipped stone tool	siliceous shale	30.7
				3.1	*1*	*chipped stone tool, retouched flake, siliceous shale*		*30.7*
SC 10			74	4	5	debitage	siliceous shale	223.0
				4.1	*2*	*debitage, block, siliceous shale*		*194.1*
				4.2	*1*	*debitage, block flake, siliceous shale*		*18.0*
				4.3	*1*	*debitage, thinning flake, siliceous shale*		*7.5*
				4.4	*1*	*debitage, thinning flake, siliceous shale, green*		*3.4*
SC 10			74	5	16	debitage	shale	126.3
				5.1	*1*	*debitage, gangue, shale*		*75.9*
				5.2	*9*	*debitage, thinning flake, shale*		*33.3*
				5.3	*6*	*debitage, flake, shale*		*17.1*
SC 10			74	6	45	debitage	chert	689.9
				6.1	*1*	*debitage, block, chert, appears burned*		*93.4*
				6.2	*1*	*debitage, shatter, chert*		*5.3*
				6.3	*1*	*debitage, core, chert, multidirectional*		*111.9*
				6.4	*1*	*debitage, quarry flake, chert*		*42.8*
				6.5	*17*	*debitage, block flake, chert*		*291.6*
				6.6	*1*	*debitage, thinning flake, chert, green*		*5.4*
				6.7	*1*	*debitage, thinning flake, chert, cortex*		*4.1*
				6.8	*22*	*debitage, thinning flake, chert*		*135.4*

547041: Phase II Archeological Investigation, Troy Starlight Development

Artifact Inventory, Area 1

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
SC 10			74	7	3	fire-cracked rock	quartzite	271.3
SC 10			74	8	1	unidentified	quartzite	35.1
				8.1	*1*	*unidentified, quartzite, possible flake*		*35.1*
SC 10			74	9	1	unidentified	cast iron	5.2
				9.1	*1*	*unidentified, cast iron, molded decoration, with two pins, possible part of adornment, L 6.7, W 1.1, T 0.2 cm*		*5.2*

547041: Phase II Archeological Investigation, Troy Starlight Development

Artifact Inventory, Area 2

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
SC 17			81	1	2	chipped stone tool	chert	186.7
				1.1	*1*	*chipped stone tool, retouched block, chert*		*113.6*
				1.2	*1*	*chipped stone tool, biface, stage 1, complete, chert, green*		*73.1*
SC 17			81	2	2	debitage	siliceous shale	374.9
				2.1	*1*	*debitage, core, siliceous shale, multidirectional*		*341.3*
				2.2	*1*	*debitage, quarry flake, siliceous shale, appears burned*		*33.6*
SC 17			81	3	3	debitage	shale	265.9
				3.1	*1*	*debitage, gangue, shale*		*117.5*
				3.2	*2*	*debitage, quarry flake, shale*		*148.4*
SC 17			81	4	13	debitage	chert	568.5
				4.1	*2*	*debitage, gangue, chert*		*187.4*
				4.2	*1*	*debitage, core, chert, multidirectional*		*139.9*
				4.3	*1*	*debitage, core, chert, multidirectional, fragment*		*58.2*
				4.4	*2*	*debitage, quarry flake, chert*		*94.8*
				4.5	*2*	*debitage, block flake, chert*		*45.5*
				4.6	*4*	*debitage, thinning flake, chert*		*35.3*
				4.7	*1*	*debitage, thinning flake, chert, gray*		*7.4*
SC 17			81	5	1	rough stone tool	quartzite	342.4
				5.1	*1*	*rough stone tool, extraction hammerstone, spall, quartzite*		*342.4*
SC 17			81	6	3	fire-cracked rock	sandstone	434.8
SC 18			82	1	1	debitage	chert	22.9
				1.1	*1*	*debitage, block flake, chert*		*22.9*
SC 18			82	2	1	debitage	shale	13.7
				2.1	*1*	*debitage, flake, shale*		*13.7*
SC 18			82	3	1	debitage	siliceous shale	76.6
				3.1	*1*	*debitage, block, siliceous shale*		*76.6*
SC 18			82	4	3	fire-cracked rock	quartzite	678.3
				4.1	*1*	*fire-cracked rock, quartzite, poss. hammerstone*		*468.9*
				4.2	*2*	*fire-cracked rock, quartzite*		*209.4*
SC 19			83	1	1	rough stone tool	quartzite	207.1
				1.1	*1*	*rough stone tool, hammerstone, complete, quartzite, L 7.1, W 5.4, T 3.8 cm*		*207.1*

547041: Phase II Archeological Investigation, Troy Starlight Development

Artifact Inventory, Area 2

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
SC 19			83	2	1	chipped stone tool	chert	19.1
				2.1	*1*	*chipped stone tool, retouched flake, chert*		*19.1*
SC 19			83	3	1	debitage	shale	29.9
				3.1	*1*	*debitage, block, shale, green*		*29.9*
SC 19			83	4	3	debitage	chert	52.1
				4.1	*2*	*debitage, block flake, chert*		*48.5*
				4.2	*1*	*debitage, thinning flake, chert*		*3.6*

547041: Phase II Archeological Investigation, Troy Starlight Development

Artifact Inventory, Area 3

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
SC 11			75	1	1	projectile point	chert	14.9
				1.1	*1*	*projectile point, Adena, complete, chert, stemmed, convex base, L 6.7, W 2.8, T 0.8 cm*		*14.9*
SC 12			76	1	4	chipped stone tool	chert	136.9
				1.1	*3*	*chipped stone tool, retouched flake, chert*		*69.8*
				1.2	*1*	*chipped stone tool, biface, stage 1, complete, chert*		*67.1*
SC 12			76	2	8	debitage	shale	13.2
				2.1	*1*	*debitage, shatter, shale*		*1.9*
				2.2	*6*	*debitage, thinning flake, shale*		*10.5*
				2.3	*1*	*debitage, flake, shale*		*0.8*
SC 12			76	3	1	chipped stone tool	siliceous shale	95.6
				3.1	*1*	*chipped stone tool, biface, stage 1, complete, siliceous shale, gray*		*95.6*
SC 12			76	4	1	debitage	chalcedony	0.4
				4.1	*1*	*debitage, trim flake, chalcedony*		*0.4*
SC 12			76	5	9	debitage	siliceous shale	76.6
				5.1	*1*	*debitage, shatter, siliceous shale*		*9.7*
				5.2	*1*	*debitage, block flake, siliceous shale*		*25.9*
				5.3	*6*	*debitage, thinning flake, siliceous shale*		*40.7*
				5.4	*1*	*debitage, trim flake, siliceous shale*		*0.3*
SC 12			76	6	84	debitage	chert	608.5
				6.1	*1*	*debitage, block, chert*		*41.4*
				6.2	*1*	*debitage, shatter, chert*		*17.6*
				6.3	*2*	*debitage, quarry flake, chert*		*123.9*
				6.4	*9*	*debitage, block flake, chert*		*166.3*
				6.5	*4*	*debitage, block flake, chert, gray*		*71.2*
				6.6	*37*	*debitage, thinning flake, chert*		*141.5*
				6.7	*1*	*debitage, thinning flake, chert, green*		*16.5*
				6.8	*4*	*debitage, thinning flake, chert, gray*		*9.8*
				6.9	*15*	*debitage, trim flake, chert*		*5.4*
				6.10	*2*	*debitage, trim flake, chert, green*		*0.7*
				6.11	*8*	*debitage, flake, chert*		*14.2*
SC 12			76	7	1	fire-cracked rock	sandstone	3.0
SC 12			76	8	1	shell	shell	6.6
				8.1	*1*	*shell, clam, shell*		*6.6*

547041: Phase II Archeological Investigation, Troy Starlight Development

Artifact Inventory, Area 3

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
SC 12			76	9	1	wood	wood	0.1
SC 12			86	1	1	rough stone tool	quartzite	313.0
				1.1	*1*	*rough stone tool, hammerstone, complete, quartzite*		*313.0*
SC 12			86	2	2	debitage	shale	447.5
				2.1	*1*	*debitage, block, shale, appears fire-cracked*		*374.2*
				2.2	*1*	*debitage, block flake, shale*		*73.3*
SC 12			86	3	5	debitage	chert	3,559.4
				3.1	*2*	*debitage, block, chert*		*3,011.0*
				3.2	*1*	*debitage, gangue, chert*		*119.9*
				3.3	*1*	*debitage, quarry flake, chert*		*331.7*
				3.4	*1*	*debitage, quarry flake, chert, green*		*96.8*
SC 12			86	4	3	fire-cracked rock	quartzite	513.9
SC 12			86	5	4	fire-cracked rock	sandstone	689.0
SC 12			86	6	1	unidentified	quartzite	466.6
				6.1	*1*	*unidentified, quartzite, appears to be fire-cracked cobble*		*466.6*
SC 12			86	7	1	unidentified	sandstone	127.7
				7.1	*1*	*unidentified, sandstone, oblong with fractures, appears to have quartz interior, L 8.1, W 4.5, T 2.1 cm*		*127.7*
SC 13			77	1	1	projectile point	siliceous shale	4.7
				1.1	*1*	*projectile point, Vosburg, complete, siliceous shale, corner-notched, concave base, L 4.0, W 2.2, T 0.4 cm*		*4.7*
SC 13			77	2	2	chipped stone tool	chert	18.5
				2.1	*1*	*chipped stone tool, retouched flake, chert, gray*		*7.3*
				2.2	*1*	*chipped stone tool, retouched flake, chert*		*11.2*
SC 13			77	3	9	debitage	chert	53.7
				3.1	*1*	*debitage, shatter, chert, gray*		*1.9*
				3.2	*1*	*debitage, shatter, chert*		*1.9*
				3.3	*2*	*debitage, block flake, chert*		*26.2*
				3.4	*1*	*debitage, thinning flake, chert, cortex*		*18.0*
				3.5	*4*	*debitage, thinning flake, chert*		*5.7*
SC 13			77	4	2	fire-cracked rock	quartzite	259.6

Slope Near STP 81

547041: Phase II Archeological Investigation, Troy Starlight Development

Artifact Inventory, Area 3

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
SC 14			78	1	2	debitage	shale	397.1
				1.1	*1*	*debitage, block, shale, burned*		*396.2*
				1.2	*1*	*debitage, thinning flake, shale, green*		*0.9*
SC 14			78	2	4	debitage	siliceous shale	10.5
				2.1	*1*	*debitage, block flake, siliceous shale*		*4.9*
				2.2	*1*	*debitage, thinning flake, siliceous shale, gray*		*4.1*
				2.3	*1*	*debitage, thinning flake, siliceous shale, green*		*1.2*
				2.4	*1*	*debitage, trim flake, siliceous shale, gray*		*0.3*
SC 14			78	3	17	debitage	chert	33.0
				3.1	*1*	*debitage, block flake, chert*		*1.6*
				3.2	*9*	*debitage, thinning flake, chert*		*16.4*
				3.3	*4*	*debitage, thinning flake, chert, green*		*12.0*
				3.4	*1*	*debitage, trim flake, chert*		*0.2*
				3.5	*2*	*debitage, flake, chert*		*2.8*
SC 14			78	4	1	fire-cracked rock	sandstone	116.3
SC 14			78	5	5	fire-cracked rock	quartzite	554.4
SC 15			79	1	2	chipped stone tool	chert	158.4
				1.1	*2*	*chipped stone tool, retouched flake, chert*		*158.4*
SC 15			79	2	12	debitage	chert	50.5
				2.1	*1*	*debitage, shatter, chert*		*0.5*
				2.2	*2*	*debitage, block flake, chert*		*37.5*
				2.3	*1*	*debitage, thinning flake, chert, green*		*6.5*
				2.4	*5*	*debitage, thinning flake, chert*		*4.5*
				2.5	*3*	*debitage, trim flake, chert*		*1.5*
Shoreline - Below Unit 2								
SC 16			80	1	2	chipped stone tool	chert	31.9
				1.1	*2*	*chipped stone tool, retouched flake, chert*		*31.9*
SC 16			80	2	1	debitage	siliceous shale	7.1
				2.1	*1*	*debitage, block flake, siliceous shale*		*7.1*

547041: Phase II Archeological Investigation, Troy Starlight Development

Artifact Inventory, Area 4

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
Unit 5								
SC			60	1	1	rough stone tool	quartzite	535.7
				1.1	*1*	*rough stone tool, hammerstone, complete, quartzite*		*535.7*
5m N of STP 97 & 2m SE of Unit 5								
SC			89	1	1	rough stone tool	quartzite	362.8
				1.1	*1*	*rough stone tool, hammerstone, complete, quartzite, very battered, L 7.1, W 6.2, T 5.5 cm*		*362.8*
W of Unit 5								
SC			90	1	2	chipped stone tool	chert	289.8
				1.1	*1*	*chipped stone tool, retouched flake, chert, green*		*159.0*
				1.2	*1*	*chipped stone tool, retouched block, chert, green*		*130.8*
SC			90	2	20	debitage	chert	1,351.0
				2.1	*6*	*debitage, gangue, chert, green*		*236.5*
				2.2	*1*	*debitage, exhausted core, chert, green, multidirectional*		*62.4*
				2.3	*2*	*debitage, core, chert, green, multidirectional*		*309.4*
				2.4	*9*	*debitage, quarry flake, chert, green*		*699.0*
				2.5	*2*	*debitage, block flake, chert, green*		*43.7*
On top of worked outcrop, near STP 54								
SC 1			69	1	1	rough stone tool	quartzite	2,305.0
				1.1	*1*	*rough stone tool, extraction hammerstone, complete, quartzite, L 16.5, W 12.7, T 7.4 cm*		*2,305.0*
SC 21			85	1	18	chipped stone tool	chert	664.8
				1.1	*1*	*chipped stone tool, biface, stage 1, complete, chert, green*		*141.9*
				1.3	*1*	*chipped stone tool, retouched block, chert*		*100.5*
				1.4	*15*	*chipped stone tool, retouched flake, chert, green*		*415.2*
				1.5	*1*	*chipped stone tool, retouched flake, chert*		*7.2*
SC 21			85	2	115	debitage	chert	1,940.5

547041: Phase II Archeological Investigation, Troy Starlight Development

Artifact Inventory, Area 4

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
				2.1	*3*	*debitage, shatter, chert, green*		*60.4*
				2.2	*26*	*debitage, quarry flake, chert, green*		*1,302.7*
				2.3	*29*	*debitage, block flake, chert, green*		*344.7*
				2.4	*47*	*debitage, thinning flake, chert, green*		*197.9*
				2.5	*1*	*debitage, thinning flake, chert*		*2.3*
				2.6	*1*	*debitage, trim flake, chert, green*		*0.9*
				2.7	*1*	*debitage, trim flake, chert*		*0.4*
				2.8	*7*	*debitage, flake, chert, green*		*31.2*
SC 21			85	3	10	debitage	shale	169.6
				3.1	*2*	*debitage, quarry flake, shale, green*		*125.8*
				3.2	*4*	*debitage, block flake, shale, green*		*32.2*
				3.3	*1*	*debitage, thinning flake, shale, green*		*6.0*
				3.4	*3*	*debitage, flake, shale, green*		*5.6*
SC 21			85	4	1	projectile point	chert	8.9
				4.1	*1*	*projectile point, biface, stage 2, tip, chert, green*		*8.9*

547041: Phase II Archeological Investigation, Troy Starlight Development

Artifact Inventory, Area 5

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
SC			88	1	1	chipped stone tool	chert	9.3
				1.1	*1*	*chipped stone tool, retouched flake, chert, green*		*9.3*
SC			88	2	1	debitage	chert	238.4
				2.1	*1*	*debitage, core, chert, green*		*238.4*
SC			88	3	1	fire-cracked rock	quartzite	311.5

547041: Phase II Archeological Investigation, Troy Starlight Development

Artifact Inventory, Area 6

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
1m W of Unit 8								
SC			91	1	4	debitage	chert	1,614.1
				1.1	*1*	*debitage, block, chert, green, with shale on exterior*		*477.7*
				1.2	*1*	*debitage, shatter, chert, green, cortex*		*11.4*
				1.3	*2*	*debitage, core, chert, green, with shale on exterior*		*1,125.0*
3m N of Unit 7								
SC			92	1	1	mineral sample	pumice	252.7
Above Rock Outcrop								
SC 22			84	1	1	chipped stone tool	chert	8.0
				1.1	*1*	*chipped stone tool, retouched flake, chert, green, used for scraping*		*8.0*
SC 22			84	2	1	debitage	shale	675.0
				2.1	*1*	*debitage, block, shale, green, high-quality chert interior visible*		*675.0*

547041: Phase II Archeological Investigation, Troy Starlight Development

Artifact Inventory, Area 7

Provenience	Level	Feature	Bag	Item	Count	Artifact Description	Material	Weight (g)
SC 23			70	1	1	rough stone tool	quartzite	8,105.0
				1.1	*1*	*rough stone tool, extraction hammerstone, complete, quartzite*		*8,105.0*

Appendix 3: Preliminary Site Plan

THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, (I.E.) ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS "A" MISDEMEANOR.

SUBMITTAL / REVISIONS

No.	DATE	DESCRIPTION	BY	REVIEWED BY:	DATE

PROJ. MANAGER:	JWE
CHIEF DESIGNER:	JWE
DESIGNED BY:	JWE
DRAWN BY:	JWE
CHECKED BY:	-

SEAL

DRAFT

Engineering and Land Surveying, P.C.
1533 Crescent Road - Clifton Park, NY 12065

TROY-2ND AVE

CONCEPT PLAN

KEVIN VANDENBURGH

CITY OF TROY AND TOWN OF SCHAGHTICOKE NEW YORK

SCALE:	1" = 50'
CONTRACT No.:	-
MJ PROJ. No.:	972.44
DATE:	FEBRUARY 2020

C-1

APPENDIX E – NYSDEC ENVIRONMENTAL SITE DATABASE

NYSDEC Remediation 546031 Report
NYSDEC Remediation 546053 Report
NYSDEC Remediation E546053 Report
NYSDEC Classification Summary

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Environmental Site Remediation Database Search Details

Site Record

Document Repository

Site-related documents are available for review through the DECInfo Locator on line at DECInfoLocator

Administrative Information

Site Name: Hudson River PCB Sediments
Site Code: 546031
Program: State Superfund Program
Classification: 02
EPA ID Number:

Location

DEC Region: 5
Address: Hudson River, Hudson Falls-NYC Battery
City: Zip: 12180
County: Saratoga
Latitude: 43.286475666
Longitude: -73.595363441
Site Type:
Estimated Size: 0 Acres

Site Owner(s) and Operator(s)

Current Owner Name: New York State
Current Owner(s) Address:
,ZZ,
Current Owner Name: STATE OF NEW YORK
Current Owner(s) Address:
,ZZ,
Owner(s) during disposal: STATE OF NEW YORK
Current On-Site Operator: NYS Department of Transportation
Stated Operator(s) Address: State Campus - Building 5
Albany,NY 12233

Site Document Repository

Name: US Epa
Address: 187 Wolf road

colonie,NY

Hazardous Waste Disposal Period

From: 1946 **To:** present

Site Description

Site Location: This National Priorities List site includes the nearly 200-mile stretch of the Hudson River that extends from Hudson Falls in Washington County to the Battery in New York City. The river is part of the Champlain Canal between Fort Edward and Waterford. EPA is the lead agency for the investigation and cleanup of the site. Site Features: The site includes the main stem of the Hudson River, as well as the associated flood plains, river banks, riverene fringing wetlands, and backwater areas. Current zoning / uses: The river is currently used for recreation, transportation, and as a source of water for drinking and other purposes. The river floodplain areas include all types of land uses, from passive / recreational to residential to commercial / industrial. Historical uses: The General Electric Company (GE) discharged PCBs into the river from two capacitor manufacturing plants located in Hudson Falls and Fort Edward starting sometime in 1946. Previous investigations identified 40 areas or 'hot spots' in the upper Hudson that had sediments contaminated with greater than 50 ppm of PCBs. Also included in the definition of this site are five Remnant Deposits or river sediment areas that were exposed when the level of the river was lowered when the Fort Edward Dam was removed in 1973. EPA issued a Record of Decision (ROD) for this National Priorities List site on September 25, 1984 which included: in-place containment of the Remnant Deposits; evaluation of downstream domestic water quality at Waterford, New York; and interim ¿No Action¿ as to the PCB-contaminated river sediment. The 1984 ROD indicated that both the No Action decision for the river sediments and the containment remedy for the Remnant Deposits might be reexamined by EPA in the future. The containment remedy for the Remnant Deposits was performed by GE under a 1990 Consent Decree with EPA. In addition, in 1990, NYSDEC completed the evaluation of downstream domestic water quality at Waterford, New York, which concluded that PCB concentrations were below analytical detection limits after treatment and met standards applicable to public water supplies. In December 1989, EPA announced its decision to initiate a detailed Reassessment Remedial Investigation/Feasibility Study (RI/FS) of the September 1984 decision concerning the PCB contaminated Hudson River sediments. The Reassessment culminated with EPA¿s issuance of a second ROD for the site in February 2002 which included the dredging of an estimated 2.65 million cubic yards of PCB contaminated sediments from the Upper Hudson River (between Fort Edward and Troy), which was estimated in the ROD to contain about 66,300 kilograms of total PCBs (approximately 65% of the total PCB mass estimated to be present within the Upper Hudson River). The ROD also identified further evaluation of PCB contamination in the flood plains concurrent with the design phase of the project. EPA issued a series of Orders to GE for performance of the engineering design for the

project. Phase 1 dredging commenced in May 2009, and was completed in October 2009. After completion of Phase 1, EPA reviewed the environmental monitoring and operational data to determine the changes to the project standards and to project design specifications for Phase 2. The changes to the project for Phase 2 were provided to GE in December 2010. GE, in accordance with the Consent Decree for the site, opted to implement Phase 2 of the remedy on 12/31/10. Construction work for Phase 2 of the remedial project started in 2011, and was completed in 2016. Dredging was completed in fall 2015; habitat reconstruction was completed in 2016. Facility decommissioning was performed in 2016. For more information on the Hudson River Fish advisory, copy and paste this link into a web browser: https://www.health.ny.gov/environmental/outdoors /fish/hudson_river/advisory_outreach_project/

Contaminants of Concern (Including Materials Disposed)

Contaminant Name/Type
polychlorinated biphenyls (PCB)
PCB aroclor 1254
cadmium
lead
PCB aroclor 1242
PCB aroclor 1016

Site Environmental Assessment

Nature and extent of contamination: Contaminants: The primary constituent of concern is PCBs, discharged from two GE capacitor plants in Hudson Falls and Fort Edward. The upstream extent of contamination is the portion of the river immediately above the Bakers Falls Dam at the GE Hudson Falls plant site. The downstream extent of contamination is the Atlantic Ocean. The commercial mixtures of PCBs discharged from the two GE plant sites changed over time; initially aroclor 1254, changing to aroclor 1242 and then to aroclor 1016. Contaminant Concentrations: PCBs have been found in excess of standards, criteria and guidance concentrations (SCGs) in sediments, surface water, biota, air, and soils at the Hudson River PCBs site. The primary sources at the plant sites have been almost completely abated through remedial work at the plant sites; as a result, the primary source of PCB to the surface water and biota of the river are the contaminated sediments in the river south of the plant sites. Prior to remediation of the Upper Hudson River from 2009 to 2016, PCB concentrations in sediment range from non-detect to greater than one percent PCB (> 10,000 parts per million). In surface water typically concentrations range from 2 nanograms per liter (ng/l or parts per trillion) to 100 ng/l, except at times of high flow when scour-driven remobilization of contaminated sediments can cause much higher concentrations in excess of 1 microgram per liter (1 ug/l or part per billion). Investigations are underway to determine the extent of floodplain

impacts. To date, PCB concentrations in excess of 500 milligrams per kilogram (mg/kg or part per million) have been found in limited areas. The nature and extent of floodplain soil contamination has not yet been established. The Lower Hudson portion of the NPL site has not be fully investigated to date. Significant threat: PCB contamination in the Hudson River sediments continue to pose a significant threat to human health and/or the environment. Concentrations in PCBs in biota directly attributable to the waste disposal at the site have led the Department of Health to recommend that human consumption of biota be limited over a substantial portion of the Hudson River between Hudson Falls and the Battery in New York City. In the upper Hudson, the fishery is catch and release only, and the NYSDOH advisory is to eat none. To see the fish consumption advisories, go to: https://www.health.ny.gov/publications/2794.pdf and https://www.health.ny.gov /environmental/outdoors/fish/hudson_river/advisory_outreach_project/ The disposal of PCB into the Hudson River has also led to significant environmental damage as defined in 6 NYCRR Part 375. This site has been included in the Federal National Priorities List (NPL).

Site Health Assessment

Consumption of fish is the major potential route of human exposure to PCBs from this site. Because of site impacts, most fish from the Hudson River downstream of Hudson Falls have elevated PCB levels. Fishing is restricted to catch and release, with a ¿eat none¿ advisory for fish consumption, from Hudson Falls to Troy. In addition, there are advisories ("eat none" or "eat no more than 1 meal per month") on consumption of several fish species caught from the Hudson River below the Troy Dam to New York Harbor. People may come into contact with contaminants present in the shallow river sediments while entering or exiting the river during recreational activities, and may also come into contact with contaminants present in floodplain soils. This direct contact route of exposure is present primarily in the upper Hudson between Hudson Falls and Troy.GE under USEPA and State oversight has taken actions at several properties along the Hudson River to address PCB contaminated floodplain soils between Hudson Falls and Troy. These actions vary from deploying signs to installing various covers and are intended to reduce exposures to PCBs in floodplain soils until a permanent remedy is developed. Additionally, a remedial investigation to address floodplain soils in the Upper Hudson River Floodplain under USEPA and State oversight is now underway.

For more Information: E-mail Us

Refine This Search

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Environmental Site Remediation Database Search Details

Site Record

Document Repository

Site-related documents are available for review through the DECInfo Locator on line at DECInfoLocator

Administrative Information

Site Name: Former Ford Manufacturing Company Mill Site
Site Code: 546053
Program: State Superfund Program
Classification: C
EPA ID Number:

Location

DEC Region: 5
Address: 121-125 2nd Street
City: Waterford Zip: 12188
County: Saratoga
Latitude: 42.794046598
Longitude: -73.674779335
Site Type:
Estimated Size: 2.46 Acres

Site Owner(s) and Operator(s)

Current Owner Name: Waterford Water Commissioners
Current Owner(s) Address: 127 Second Street
Waterford,NY, 12188-0489

Site Description

Location: The Former Ford Manufacturing Mill Site is located at 127 2nd Street in the Village of Waterford, Saratoga County. The site is 2.5 acres in size. Site Features: The majority of the site is an open field. The site is used for access to and for employee parking for the Waterford Water Works. The Hudson River borders the eastern portion of the site. Current Zoning: The site is zoned commercial. The proposed future use of the site is a new, upgraded Town of Waterford Water

Treatment Plant. Historical Use: The site was last utilized as a mill complex in the 1960's, portions of the abandoned and deteriorating mill complex was demolished in the 1970s. The Town of Waterford took possession of the property in 1986. An initial investigation conducted by the Town identified a 20,000 gallon petroleum storage tank and significant contaminated soils. Shaw Environmental completed a Site Assessment Report in September of 2010 using an EPA Targeted Site Assessment Grant. The 20,000 gallon underground tank, it's contents, and contaminated subsurface soils near the tank removed and disposed of as IRMs during site assessment. No contaminants of concern remain or were further identified on site.

Site Environmental Assessment

Nature and Extent of Contamination: Limited Phase II work completed at the location by Waterford identified a 20,000 gallon petroleum UST and petroleum contaminated soils in the area of the tank. Shaw Environmental completed a Site Assessment Report in September of 2010. The 20,000 gallon underground tank, it's contents, and petroleum contaminated subsurface soils near the tank were removed and disposed of as IRMs during the site assessment. No contaminants of concern remain near the tank or were identified at the site in other locations. Special Resources Impacted/Threatened: None

Site Health Assessment

Low level residual soil contamination remains at the site below the ground surface, therefore it is not expected that people will come in contact with it unless they dig below the surface material. People are not coming into contact with the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination.

For more Information: E-mail Us

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NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Environmental Site Remediation Database Search Details

Site Record

Document Repository

Site-related documents are available for review through the DECInfo Locator on line at DECInfoLocator

Administrative Information

Site Name: Former Ford Manufacturing Company Mill Site
Site Code: E546053
Program: Environmental Restoration Program
Classification: N *
EPA ID Number:

Location

DEC Region: 5
Address: 121-125 2nd Street
City: Waterford Zip: 12188
County: Saratoga
Latitude: 42.79403493
Longitude: -73.674543003
Site Type:
Estimated Size: 2.46 Acres

Site Owner(s) and Operator(s)

Current Owner Name: WATER COMMISSIONERS OF THE TOWN OF WATERFORD
Current Owner(s) Address: 127 2ND STREET
WATERFORD,NY, 12188

Site Description

The site is 2.5 acres in size and was last utilized as a mill complex in the 1960s Portions of the abandoned and deteriorating mill complex were demolished in the 1970s. The Town of Waterford took possession of the property in 1986; the majority of the site is an open field. The proposed future use of the site is a new, upgraded Town of Waterford Water Treatment Plant. Initial investigation work conducted by the Town has identified a 20,000 gallon petroleum underground

storage tank and significant contaminated soils. The application could not be processed due to a lack of funding in the Environmental Restoration Program. Using EPA Targeted Site Assessment Funding, Shaw Environmental completed Site Assessment Report in September of 2010.

Site Environmental Assessment

No contaminants of concern present on the site; 20K tank, contents, and contaminated soils near tank removed and disposed of as IRMs during site assessment.

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* **Class N Sites:** "DEC offers this information with the caution that the amount of information provided for Class N sites is highly variable, not necessarily based on any DEC investigation, sometimes of unknown origin, and sometimes is many years old. Due to the preliminary nature of this information, significant conclusions or decisions should not be based solely upon this summary."

For more Information: E-mail Us

Refine This Search

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Site Classifications

See also the "Frequently Asked Questions" provided below

Classifications for "Registry" Sites:

Classification Codes 1-5 apply to sites that are listed in the "Registry of Inactive Hazardous Waste Disposal Sites," or "Registry." The Registry was created by Environmental Conservation Law Article 27 Section 1305 and is also described in regulation (6 NYCRR Section 375-2.7). Sites listed on the Registry are commonly said to be sites in the "State Superfund Program."

Classification Code: 1

This classification is assigned to a site at which:

a. contamination constitutes a significant threat to public health and the environment; and
b. the significant threat to public health and the environment is causing, or presents an imminent danger of causing, either irreversible or irreparable damage to the environment.

Classification Code: 2

This classification is assigned to a site at which:

a. the disposal of hazardous waste has been confirmed and the presence of such hazardous waste or its components or breakdown products represents a significant threat to public health or the environment: or
b. hazardous waste disposal has not been confirmed, but the site has been listed on the Federal National Priorities List (NPL).

Classification Code: 3

This classification is assigned to a site at which contamination does not presently and is not reasonably foreseeable to constitute a significant threat to public health or the environment. This classification is not to be used for sites where insufficient data is available to make a definitive decision concerning significant threat.

Classification Code: 4

This classification is assigned to a site that has been properly closed but that requires continued site management consisting of operation, maintenance and/or monitoring. Class 4 is appropriate for a site where remedial construction actions have been completed for all operable units, but the site has not necessarily been brought into compliance with standards, criteria, or guidance (e.g., a groundwater extraction and treatment system has been installed and is operating properly but groundwater standards have not been achieved yet). The Record of Decision should define the remedial action objectives that need to be achieved during site management. If a Certificate of Completion (CoC) is to be issued for a site, the CoC is issued concurrently with the reclassification.

Classification Code: 5

The classification assigned to a site that has been properly closed and requires no further action. This may include a site where continued operation, maintenance, or monitoring is not needed to achieve/maintain protectiveness, but the site is not suitable for delisting from the Registry (e.g., DEC is unable to obtain an institutional control).

Classifications for Non-Registry Sites:

Non-Registry sites are those that are being investigated and remediated in a brownfield program or other environmental remediation program and are not listed in the Registry.

Classification Code: A (Active)

The classification assigned to a non-registry site in any remedial program where work is underway and not yet complete (i. e., Brownfield Cleanup Program, Environmental Restoration Program, Voluntary Cleanup Program and RCRA Corrective action Program sites). This may be used for Manufactured Gas Plant sites or those being remediated under an EPA Cooperative Agreement.

Classification Code: C (Completed)

The classification used for sites where the Department has determined that remediation has been satisfactorily completed under a remedial program (i. e., State Superfund, Brownfield Cleanup Program, Environmental Restoration Program, Voluntary Cleanup Program, and RCRA Corrective Action Program). State Superfund (Registry) sites must have completed all active operation, maintenance, or monitoring requirements before they can be delisted and made class C. Non-registry sites may be made a class C after successful completion of all required construction or after a no further action remedy has been selected by the Department. These sites will be issued a Certificate of Completion (COC), but may still require ongoing maintenance and periodic certification of institutional/engineering controls (IC/ECs).

Classification Code: P (Potential)

This classification is used for sites where preliminary information indicates that a site may have contamination that makes it eligible for consideration for placement on the Registry of Inactive Hazardous Waste Disposal Sites (commonly referred to as the list of State Superfund Sites). Further information and/or investigation, in the form of a site characterization, is needed to determine if a Class P site qualifies for listing of the site on the Registry. Generally, to qualify for placement on the Registry, there must be evidence that hazardous waste was disposed on the site and that any resulting contamination presents a significant threat (or reasonably foreseeable threat) to public health or the environment. Class P sites are not listed on the Registry and many are eventually found to not qualify for Registry listing. Sites that do not qualify for listing are typically then reclassified to a "Class N" site.

Classification Code: PR (Potential RCRA Corrective Action)

"Class PR" is a specialty classification code that is **not** related to the Registry. This classification code is used for sites that are, or have been, subject to the requirements of the Resource Conservation and Recovery Act (RCRA). RCRA sites are those that are managing or have actively managed hazardous waste (e.g., waste solvents from a manufacturing process). If spills occurred resulting in environmental contamination, remediation may be necessary under the RCRA corrective action program. Similar to a Class P site, Class PR sites are investigated and reviewed to determine if RCRA corrective action is necessary. If so, remediation is carried out under a RCRA permit, order, or other legal mechanism.

Classification Code: N (No Further Action at this Time)

Sites are given a classification of "N" when:

- the investigation and evaluation of a Class P site results in a determination that contamination at the site does not warrant placing the site on the Registry or it is being addressed under a brownfield program;
- a site was in a brownfield program (BCP, ERP or VCP) or other non-Registry program, remediation was not completed, and the site did not otherwise qualify for listing on the Registry. As an example, this occurs

when a volunteer begins a brownfield project and then for economic or other reasons, determines they cannot complete the work and the brownfield project is terminated. If the contamination at the brownfield site qualifies it for placement on the Registry, the Department acts to do so. If the site re-enters a brownfield program, it can be reclassified to Class A (active) to indicate that work has recommenced;

- a site was identified simply as the location(s) where a drum(s) or other discrete waste was at one time present and subsequently removed by DEC or others and, based on the resulting conditions, no need for additional work was apparent; or
- an application to the BCP, ERP or VCP was submitted, and was then withdrawn or terminated before any actions were taken to investigate or remediate the site.

Frequently Asked Questions about Site Classifications

Q. Are Registry sites more heavily contaminated than non-Registry sites?

A: Sites are placed on the Registry if the Department determines that they present a significant threat to public health (as determined by the Department of Health) or the environment and therefore meet the definition of Class 2. When a Class 2 site has been remediated, it is reclassified or removed from the Registry (delisted) to indicate that the significant threat(s) has been addressed. Non-Registry sites may but usually do not also present significant threats. For all sites in a Department remedial program, the goal of investigating and remediating a site is that the result must be protective of public health and the environment regardless of whether the site is on the Registry or not.

Q. When did the Department begin to make information available on its public website about Class P?

A: Prior to 2013, information about Class P sites was available by request but was not placed on the public website because by the nature of these sites, the information is often preliminary, incomplete, or not verified. Since existing conditions at P sites are often unknown or incomplete and not fully characterized, information about these sites can easily be misunderstood. Their mere existence may unnecessarily raise concern about human exposures or environmental impacts before the sites are better characterized. This information is now being made available on the public website due to the increasing and large numbers of requests for property information that are often associated with buying and selling property. **DEC offers the information with the caution that it should not be used to form conclusions about site contamination beyond what the definition of this classification provides, namely the potential for concern. It should be noted that the information provided for a P site is preliminary in nature and unverified and that no DEC investigation has yet been completed.** Due to the preliminary nature of this information, significant conclusions or decisions should not be based solely upon these summaries.

Q. When did the Department begin to make information available on its public website about Class N sites?

A: Like the Class P sites, prior to 2013, information about Class N was available by request but was not placed on the public website for several reasons. Many Class N sites were investigated decades ago before information was added to the database making the online information incomplete. Others are brownfield sites where only an application to a program was submitted and no further action taken. Still others were projects undertaken voluntarily but not completed for lack of funding or another reason. Class N site information is now being made available on the public website due to the increasing and large numbers of requests for property information that are often associated with buying and selling property. Again, DEC offers the information with the caution that the amount of information provided for Class N sites is highly variable, not necessarily based on any DEC investigation, sometimes of unknown origin, and sometimes is many years old. Due to the nature

of this information, significant conclusions or decisions should not be based solely upon the released summaries.

Q. How can I get more information about Registry and Non-Registry Sites?

A: If you have specific questions about a remedial site and need more information, you may send an email to derweb@dec.ny.gov. Please include a description of the specific information you need and when you need it.

Q. How does DEC determine that a site should be placed on the Registry?

A. To be placed on the Registry, a site must pass two basic conditions. First, there must be evidence that hazardous waste (as defined in the law and regulations) was disposed on the site. Second, the existence of hazardous waste on the site must create an existing or reasonably foreseeable significant threat to public health or the environment. There are many criteria that define a significant threat that are described in the regulations (6 NYCRR 375-2.7(a)) including whether the contaminants disposed at the site or coming from the site result in, or are reasonably foreseeable to result in adverse impacts to public health (e.g., morbidity, disease, reproductive toxicity, etc.), adverse impacts to plants/animals, or significant environmental damage.

Q. Will DEC determine whether the P sites should be placed on the Registry?

A. All P sites are evaluated to determine if they should be placed on the Registry. The time it takes to complete an evaluation depends upon the priority of the site which reflects what is known about the nature and extent of contamination at the site and the potential for adverse impacts to public health and the environment.

Q: When is a site reclassified and how does the reclassification process work?

A: Generally, sites are given an initial classification when they enter a remedial program and are reclassified when major milestones are accomplished (e.g., remediation complete, construction complete and site management needed, decision made that no further remediation is necessary, etc.). Registry site classifications follow the requirements of the applicable regulation (6 NYCRR section 375-2.7). All Registry reclassifications include various forms of public notice as described in subdivision 375-2.7(b). When initially placed on the Registry, public notice is provided to property and adjacent property owners, municipal officials, and the public generally through newspaper notices and the issuance of fact sheets. Registry sites typically begin the remedial process as a "Class 2" site and progress to "Class 4" when remedial construction is complete but site management is needed to achieve the remedial goals for the site (e.g., by collecting and treating contaminated groundwater). When all work is completed at a Registry site, it is "delisted" from the Registry.

Non-Registry sites are given an "Active" (Class A) classification when they enter a program (e.g., Brownfield Cleanup Program) and are reclassified to "Complete" (Class C) when the work is finished or only site management remains. In the Brownfield Cleanup Program, public comment on the project is built in at major milestones (e.g., application to the program, investigation work plan (if applicable), remedy selection). If a party begins a voluntary investigation or remediation project under one of the non-registry programs and elects to terminate the work before completion, and the site does not otherwise qualify for listing on the Registry, it will be identified as a Class N site.

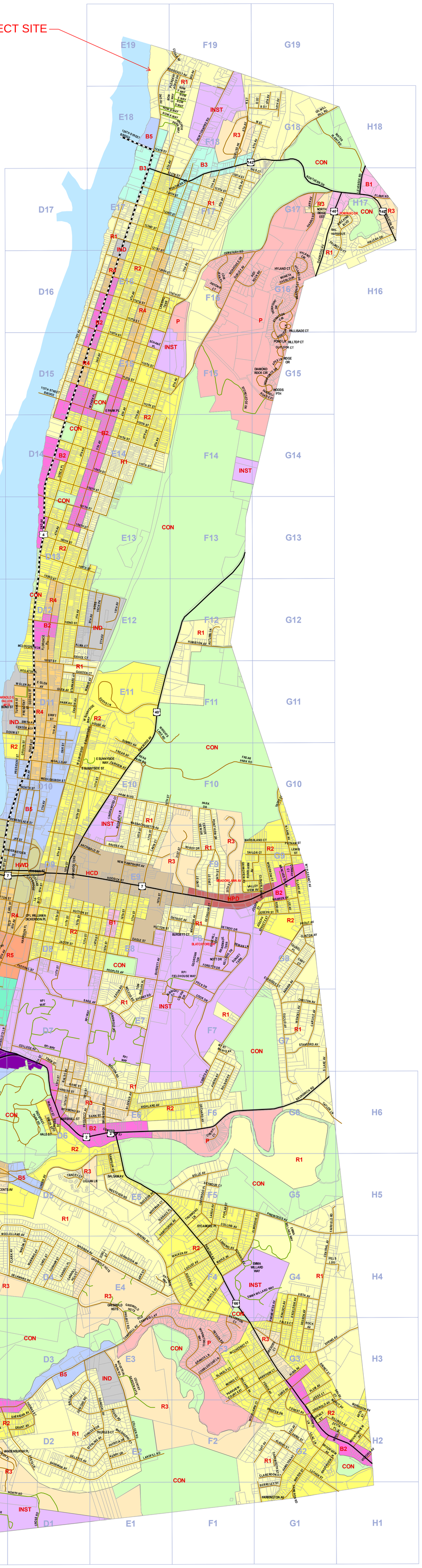
APPENDIX F – MUNICIPAL ZONING MAP

City of Troy Zoning Map
Town of Schaghticoke Zoning Map

OFFICIAL ZONING MAP

City of Troy

PROJECT SITE



Zoning Legend

ZONE, DEFINITION

- B1, Neighborhood Commercial
- B2, Community Commercial
- B3, Shopping Center Commercial
- B4, Central Commercial
- B5, Highway Commercial
- CON, Conservation
- HCD, Hoosick St Commerce District
- HPD, Hoosick St Professional District
- HWD, Hoosick St Waterfront District
- IND, Industrial
- INST, Institutional
- P, Planned Development
- R1, Single Family Residential, Detached
- R2, Two Family Residential
- R3, Multiple Family Residential, Medium Density
- R4, Urban Neighborhood Residential, Medium To High Den
- R5, High Rise Residential, High Density
- T5, Urban Core
- WCD, Waterfront Commercial District
- WMD, Waterfront Mixed Use District
- WTD, Waterfront Trade District

Zoning Data Information:
Adopted 10/1988
Amended 06/2001, 06/2005, 09/2009, 10/2016

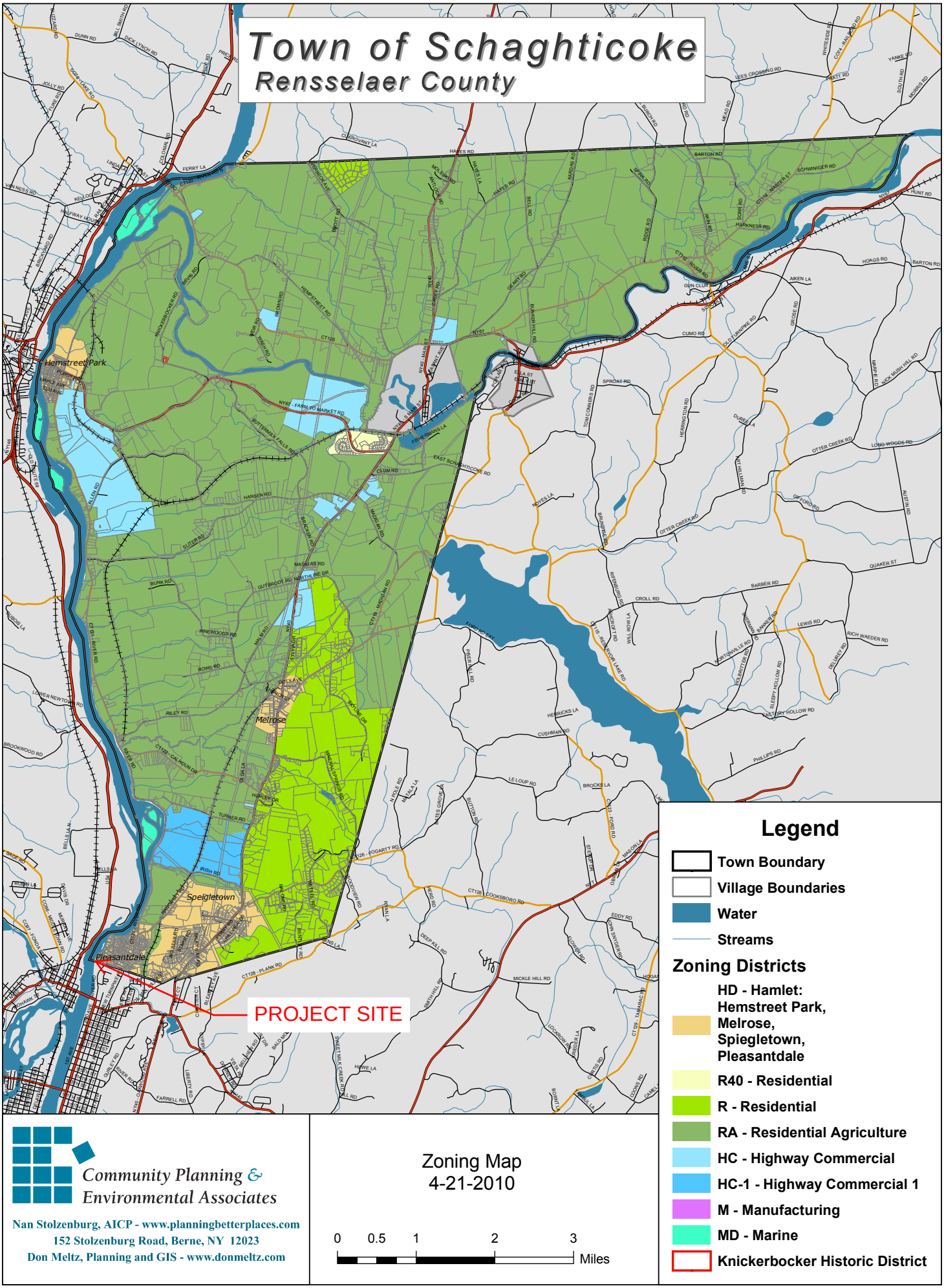
LEGEND

- Local
- Way
- State Route
- US Route
- Index
- 2015 Tax Parcels
- Hudson River

Base layers provided by Rensselaer County Bureau of Research and Information Services | Maintained and published by City of Troy NY Bureau of Information Services | Dated: 12/19/16

1ST AVE - D14,D15,D16,E16,E17
1ST ST - B3,B4,B5,B6,B7
1ST STREET ALY - B3,B4,B5,B6,B7
2ND AVE - D12,D13,D14,D15,E15,E16,E17, E18,E19,,F19
2ND ST - B3,B4,B5,B6,C6,C7,C8
3RD AVE - D13,D14,D15,E15,E16,E17,E18,F18,F19
3RD ST - B4,B5,C5,C6,C7,C8
4TH AVE - D13,D14,E14,E15,E16,E17,F17,F18
4TH ST - B3,B4,B5,C5,C6,C7,C8
5TH AVE - C5,C6,C7,C8,C9,D9,D10,D11,D12,,D13,D14,E14, E15,E16,E17,F17,F18
6TH AVE - C5,C6,C7,C8,D8,D9,D10,D11,D12,,D13,E13, E14,E15,E16,F16,F17
7TH AVE - D10,D11,D12,D13,E13,E14,E15,E16,F16,,F17
7TH ST - C5,C7
8TH AVE - E12,E14,E15,F17,F18
8TH ST - D7,D8,D9,D10
9TH AVE - E12,E14,F15,F17,F18,G18
9TH ST - D8,D9,D10,D11,E11
10TH AVE - E12,G18
10TH ST - D8,D9,D10,E10
11TH ST - D7,D8,D9,E10
12TH ST - D8,D9
13TH ST - D6,D7,D8,E8,E9
14TH ST - D6,D7,D8,E8,E9
15TH ST - D6,D7,E7,E8,E9,E10
16TH ST - D6,E8,E9,E10
18TH ST - E10,F10
17TH ST - E8,E9,E10
19TH ST - E8,E9
21ST ST - F9
22ND ST - F9
23RD ST - F9
24TH ST - F9
25TH ST - F9
101ST ST - D11,D12,E11
102ND ST - D12,E12
103RD ST - D12,D13,E12
104TH ST - D13,E13
105TH ST - D13,E13
106TH ST - D13,E13
107TH ST - D13,D14,E13
108TH ST - D14,E13,E14
109TH ST - D14,E14
110TH ST - D14,E14
111TH ST - D14,E14
112TH ST - D15,E14,E15
112TH STREET BRIDGE - D15
113TH ST - D15,E15
114TH ST - D15,E15,F15
115TH ST - D15,E15,F15
116TH ST - D16,E15,E16
117TH ST - E15,E16
118TH ST - E16,F16
119TH ST - E16,F16
120TH ST - E16,F16
121ST ST - E16,E17,F16
122ND ST - E17,F17
123RD ST - E17,F17
124TH ST - E17,F17
125TH ST - E17,E18,F17
126TH ST - E18,F17,F18,G17
126TH STREET BRIDGE - E18
ADAMS CT APTS WAY - E3
ADAMS ST - B6,C6
ADARE RD - E2
AHERN AVE - F6,F7
ALBERT ST - G2
ALBIA AVE - G3
ALBRIGHT CT - E7,E8,F7
ALDER AVE - F4
ALMA CT - D12,E12
ANCHOR PARK WAY - E18,F18
ANNIE ST - G2
ANTONIA CT - F16
APEX LN - G15
ARCHIBALD ST - D9,E9
ARNOLD E FALLON APTS - D11
ARTHUR CT - C5
ARTS ST - H2
ASHLAND PL - C6
AUTUMN LN - F12
BAL HARBOUR - H17
BALLINA ST - D2,D3,E2
BALSAM AVE - E5
BALTIC AVE - D6
BANK ST - D6,E6
BEDFORD ST - C4,C5
BELLE AVE - E5,F5
BEMAN LN - F8
BERKELEY ST - G1
BILLINGS AVE - G2,H2
BIRCH ST - D6
BISCAYNE BLVD - H16,H17
BLAKELY CT - F3,G3
BLATCHFORD DR - F8
BLEEKER AVE - E6
BOLIVAR AVE - F6,F7
BOND ST - D11
BORADAILE DR - F16
BOUTON RD - D7,E6,E7
BRENTWOOD AVE - C1,C2
BRIDGE AVE - C8
BRINSMADE TERR - F8
BROADWAY - C7
BROOKVIEW AVE - G2
BROOKVIEW LN - G2
BRUNSWICK AVE - E6
BRUNSWICK RD - E6,F6,G6
BUCKLEY ST - C5,C6
BURDEN AVE - B2,B3
BURDETT AVE - E6,E7,E8,E9,F9
BURDETT CT - F8
BURGER LN - C2
BURKE ST - B2
BURRETT LN - G2
CALDER ST - B2
CAMERON RD - G1
CAMPBELL AVE - C2,D2,D3,E3,E4,F4
CANAL AVE - B5,C5,D5
CARLYLE AVE - G7
CARROLL PL - D4
CARY CT - G8
CATHERINE SWEENEY APTS - B4,C4,C5
CEDAR AVE - F19
CEMETERY RD - F16,G16,G17
CENTER ALY - D11
CENTRE ST - B3
CENTER VIEW DR - F9,F10
CENTRAL AVE - G3,G4,G5
CESTA LN - D2
CHELTON AVE - G7
CHERRY ST - C3,C4
CHERYL CT - F6
CHRISTIE ST - D6,E6
CHURCH ST - B5,C5,C6,C7
CLARENDON ST - G2
CLARK AVE - D4,D5
CLEARVIEW DR - C4
CLIFF ST - B2
CLINTON AVE - G8
CLOVERLAWN AVE - G9
COBBLESTONE LN - F3
COLLAR CITY - C9,D8,D9
COLLEEN RD - E2
COLLEGE AVE - D7
COLLINS AVE - F4,F5
COLVIN CIR - F7
CONGRESS ST - B7,C7,D6,D7,E6
CONGRESS STREET BRIDGE - B7
CONWAY CT - G9
COOK DR - F7
CORLISS PARK - F18
CORNING AVE - F4
COTTAGE ST - B1,B2,C2
CPL WILLIAM A DICKERSON PL - D8,D9
CRAGIN AVE - D11
CRESTWOOD AVE - C1,C2
CROCKETT AVE - B1,B2
CROSS RD - D1
CROSS ST - B3
CYPRESS ST - D6
DALEY CT - G2,G3
DARTMOUTH ST - G2
DEFREEST AVE - C2
DELAWARE AVE - C4,D4
DENISE DR - F12
DESSON AVE - G3,G4
DETROIT AVE - E8,F8
DETROIT DR - F8
DIACK PL - D14
DIAMOND ROCK CIR - G15
DIVISION ST - B7,C6,C7
DONEGAL AVE - D3,E2,E3
DOUW ST - C11,D11
DROUIN ST - D10,D11
DUKE ST - B3
DUNHAM ST - D4
DUNLEER DR - D2,E2
E GLEN AVE - D11
E PARK PL - E15
E SUNNYSIDE - D10,D11,E11
E SUNNYSIDE WAY - D10,E10
EAGLE ST - D8,E8
EARL ST - C8,D8,D9,D10
EAST INDUSTRIAL PKWY - B3,B4
EATON RD - E7,E8
EDDYS LN - E11
EDGEHILL TERR - F8
ELDRIDGE CT - G8
ELM PL - D9
ELM ST - B2
ELMGROVE AVE - F4,G4,G5
EMMA WILLARD WAY - F4,G4,G5
ERIE ST - B3,C3
EUCLID AVE - G6,G7,G8
EXCELSIOR AVE - G3,G4
FAIRFIELD RD - G5
FALES CT - G3
FARM ST - D6,D7
FARRELL ROAD EXT - G15
FARRINGTON AVE - G1,G2
FARVIEW AVE - E10
FEDERAL ST - C8,D8
FERRY ST - B7,C7,D7
FLORENCE PL - D12
FONDA AVE - F3,G2,G3
FORBES AVE - B1,B2
FORD AVE - G2,G3
FOREST AVE - G2,G3
FORSYTH DR - F8
FOXFORD RD - D2
FRANCIS ST - C4
FRANKLIN PL - C6
FRANKLIN ST - B3,B4,B5,B6,C6,C7,C8
FREAR ALY - B4,B5,B6,B7,C7
FREAR PARK RD - E10,F10,G10
FREDERICK ST - B1
FRONT ST - B6,B7,C7,C8
FULTON ST - C8
GARDEN CT - D11,E11
GEORGE E HOLLIDAY DR - C1,D1
GEORGE ST - D11
GEORGIAN CT - F7,F8,F9
GILLETTE AVE - D2,E2
GLEN AVE - D11,E11
GRACE CT - D12,E12
GRAND ST - C8
GRANDVIEW AVE - F9
GRANITE LN - F3
GRANT AVE - D2
GRAPE ST - B4,C4
GREEN ISLAND BRIDGE - C8
GREGORY CT - G3
GRISWOLD AVE - G2,H2,H3
GURLEY AVE - F15,F16,G16,G17
HADDEN LN - C1
HALE ST - D6
HAMILTON AVE - G1,G2
HANOVER ST - C4,C5
HARRIS RD - G16,G17
HARRISON PL - D8
HARRISON ST - B4
HAVERMANS AVE - C6
HAWTHORNE AVE - E4,E5,F5
HEYDEN RD - F3,F4
HIALEAH DR - H17
HICKORY ST - C4
HIGH ST - B2
HIGHLAND AVE - E6,F6
HIGHPOINTE DR - G15,G16
HILL ST - C5,C6,D5
HILLS LDG - G4,H4
HILLTOP CT - G15
HOLLIDAY DR - C1,D1
HOOSICK ST - C9,D9,E9,F9,G9
HOPKINS ST - B3
HORIZON LN - G15,G16
HOUSE AVE - E11
HOWARD ST - C3
HUDSON AVE - B4
HUDSON ST - B1
HUMISTON AVE - F12
HUTTON ST - C9,D8,D9,E8
HYLAND CIR - G16
HYLAND CT - G16
HYLAND DR - G16
IDA ST - B5,C5,D5
INDUSTRIAL PARK RD - E2,E3
INGALLS AVE - D10,E10
IPHOFEN DR - G2
IRVING PL - C6,C7
IVES CT - F17,G17
JACKSON PL - B6
JACKSON ST - B5
JACOB ST - C8,D8,E8
JAY ST - C9,D9
JEFFERSON ST - B6,C6
JESSE CT - G2,G3
JOHN ST - B1
JOSEPH CT - G8, G9
JOSEPH ST - G8
JOSEPH ST EXT - G8

KANE ST - D6
KELLOGG DR - F8
KELLY ST - B3
KENNEDY LN - C6
KERRY DR - E2
KING ST - C8
KINLOCH AVE - G3,G4
KINNEY ST - G3
LAKEWOOD PL - F5
LANDFILL RD - E2
LANGLOTZ LN - C7
LANN AVE - G17
LANSING AVE - F4
LANSING TERR - E16
LARCH AVE - F5
LARK ST (2-6) - E4
LARK ST - C2
LAUNDRY PL - C8
LAVIN CT - E9,E10
LEE AVE - G8,G9
LEVERSEE RD - H17,H18
LEVI AVE - G2
LEWIS ST - G9
LEXINGTON AVE - E4
LIBERTY ST - B6,C6
LILAC LN - G2
LILLIAN LN - D5
LINCOLN AVE - B4,C4
LINDEN AVE - D5,E6,E5
LINDENWOOD CT - E9,E10
LIVINGSTON ST - H17
LOCUST AVE - E4,F4
LORI JEAN PL - F16
LUTHER ST - G1,G2,H1
M ST - F18,G18,
MAC SHERRY CT - E2
MADISON AVE - C4,C5,D4,D5,E4,F4
MADISON ST - B5,C5
MAIN ST - A2,A3,B3
MANCHESTER AVE - G9
MANN AVE - B4,C3,C4
MANNING AVE - D4
MANOR BLVD - C4,C5
MAPLE AVE - F4,F5
MARCY AVE - G2,H2
MARQUIS CT - C4
MARSHALL ST - D6
MARSHLAND CT - F9,G9
MARVIN AVE - B1,B2
MASON ST - D4,D5
MASSACHUSETTS AVE - E9,E10
MAXWELL DR - A1,B1
MCCHESNEY CT - F3
MCCLELLAND AVE - C5,D4,D5
MCLOUGHLIN LN - D12
MCLEOD RD - E7,E8
MEADOWLAWN AVE - F9,G9
MECHANIC ST - B3,C3
MENANDS BRIDGE - A2,B2
MERIDIAN CT - G16
MICHIGAN AVE - F8,F9
MIDDLEBURGH ST - D10,E10
MILL ST - B3,C2,C3
MITCHELL ST - B2
MONETA OVERLOOK - G16
MONROE ST - B5,C5
MONTGOMERY ST - C4
MONUMENT SQ - B7,C7,C8
MORRISON AVE (1000+) - H2,H3
MORRISON AVE (5-105) - B2,C2
MORRISON MANOR APTS - C2
MOUNTAINVIEW AVE - H2
MT PLEASANT AVE - G9
MT ST MARYS AV - F7
MUNRO CT - F3,G3
MYRTLE AVE - F4
N 1ST ST - C8,C9,D9,D10
N LAKE AVE - G9,G10
NEW HAMPSHIRE AVE - E9
NEW TURNPIKE RD - F17,F18,F19
NORTH RD - C1,D1
NORTH ST - D10
NORTH RIDGE EST - G17
NORTHERN DR - F17,F18,G17,G18,H17
NORTON ST - B4,C4
NOTT DR - F8
NYROY DR - F9
O ST - G18
OAK ST - C4
OAKWOOD AVE - D9,E9,E10,E11,E12,F12,F13,G16,G17,,H17
OAKWOOD TERR - D9
ODELL ST - E4
OIL MILL HILL RD - G18,H18
OLD MILL ST - C3
OLD CAMPBELL AVE - E3,E4
ONEIL ST - D4
ORCHARD AVE - F6
ORR ST - D10,D11
OUTLOOK CT - G15
PALLISADE CT - G16
PALMETTO CT - G17,H16,H17
PARK AVE - D11
PARK BLVD - E10,F10
PARK DR - F10
PARKVIEW COURT EXT - F2,F3
PARKVIEW CT - F3,G3
PARMENTER AVE - G3,G4
PAT ST - B3,C3
PATONY ST - C5,C6
PATRICIA DR - E2
PATTISON WAY - E4
PAWLING AVE - E5,E6,F3,F4,F5,G2,G3,H2
PECK DR - F7,F8
PEOPLES AVE - D8,E8,F7,F8
PETERSON CT - F3
PHELAN CT - B3
PINEWOODS AVE - E5,F5,G5,H5
PLANK RD - H17
PLEASANT ACRES DR - F18,F19
PLUM AVE - G2,G3
POINT VIEW DR - F9,F10
POLK ST - B3
POMPANO DR - H17
POND LN - G15,G16
POPLAR ST - F5
PRESIDENT ST - D10,D11
PRINCE ST - B2
PROJECT RD - D4,E3,E4
PROSPECT AVE - D6,E6
PROSPECT PARK RD - C6,D6
PROUT AVE - G8
PUTNAM ST - G9
R ST - F18,G18
RANKIN AVE - G7,G8
RED ROCK RD - F16,G16
REGATTA PL - D11
REID AVE - G8,G9
RENSSELAER ST - C10,D9,D10
RICHMOND ST - D6
RIDGE CIR - G15
RIDGE DR - C4
RIVER ST - B6,B7,C7,C8,C9,D9,D10,D11,D12
ROBBINS AVE - B4,C4
ROCK AVE - G3
ROOSEVELT AVE - E19,F18,F19
ROSELAWN AVE - F9,G9
ROSS TECH PK - E12
ROW A WAY - E18,F18
ROW B WAY - E18,F18
ROW C WAY - E18,F18
ROW D WAY - E18,F18
ROW E WAY - E18,F18
ROW F WAY - E18,F18
RPI FIELDHOUSE WAY - E8,F8
RPI WAY - D7,D8,E7
RUSSELL ST - D7
S LAKE AVE - G6,G7,G8,G9
S RIVER ST - B3
SAGE AVE - D7,D8,E7
SAMPSON AVE - E5,E6
SAUSSE AVE - D9,E9
SCHANZ PL - E15
SEWARD ST - C4
SEYMOUR CT - F5
SHELDON AVE - E5
SHERIDAN AVE - C2,D2
SHERMAN AVE - C2,D2,E2
SHERRY RD - E7
SMITH AVE - D11
SNYDER AVE - B3
SPENCE ST - G2
SPRING AVE - D5,E4,E5,F3,F4,G3,H3
SPRINGWOOD EST - C3
SPRUCE ST - B2
ST JOSEPHS ST - B4
ST JOSEPHS AVE - C6
ST LUKES AVE - B3
ST MARYS AVE - C6
ST MICHAELS AVE - B2
ST PAULS PL - C7
ST PETERS AVE - C6
ST VINCENTS AVE - C5
STANNARD AVE - D11
STANTON ST - C4
STATE ST - B7,C7
STERLING AVE - D2,E2
STOW AVE - B1,B2
STRATTON CIR - G16
SULLIVAN ST - B3
SUMMIT AVE - E10,E11
SUNSET CT - C4,C5
SUNSET TERR - F7,F8
SWIFT ST - D11
SYCAMORE PL - F5
TAFT AVE - G2
TAYLOR CT - F9,G9
TAYLOR LN - G6
TERRACE PL - E5,F5
THE CROSSWAYS - H4
THOMAS ST - D2
THOMPSON ST - B3,C2,C3
THORNTON ST - C4
THURLES CT - E2
THURMOND LN - F5
TIBBITS AVE - D6,E6,F6,F7,G7,G8
TOM PHELAN PL - E7,E8
TRACEY CT - D5
TRENTON ST - B4,C4
TRUBEL PL - G8
TURNER ST - D11
TYLER ST - B4,C3,C4
UNION ST - C7,C8
VALLEY VIEW AVE - F9,G9
VAN BUREN ST - B4
VAN EVERY AVE - B3,B4
VANDENBURGH AVE - C1,C2
VANDENBURGH PL - C1,C2,D1,D2
VANDERHEYDEN ST - C9,D9
VICTORIA AVE - H2
VIEWPOINT DR - G16
VINE ST - B4,C4
VISTA AVE - G4
W GLEN AVE - D11
W PARK PL - E15
W SUNNYSIDE - D10,D11,E11
W SUNNYSIDE WAY - E11
WALKER AVE - E4,F4,F5
WALNUT ST - D6
WARREN AVE - G8,G9
WASHINGTON PL - B6,C6
WASHINGTON ST - B6,C6
WATER PLANT RD - G18,H17,H18
WATER ST - B2,B3
WENDELL AVE - G7,G8
WESTOVER RD - E5
WHITMAN CT - E5
WILDE ST - C1,C2
WILLARD AVE - F3,G3
WILLIAMS ST - C5,C6,C7,C8
WILLIAMS ST ALY - C6
WILLIS ST - C2
WILLOW ST - B4
WINNIE AV - D11, E11
WINSLOW AVE - B3
WINTER ST - G1,G2
WOODLAWN CT - F2,G2,G3
WOODROW CT - G9
WOODS PTH - G15
WOOL AVE - H2
WRPI PLZ - D7
WYNANTSKILL WAY - E4,F3,F4
YATES ST - G10
ZETTA PL - G2,H2


Town of Schaghticoke
Rensselaer County
Hemstreet Park
Melrose
Speigletown
Pleasantdale
PROJECT SITE
Legend
Town Boundary
Village Boundaries
Water
Streams
Zoning Districts
HD - Hamlet: Hemstreet Park, Melrose, Spiegletown, Pleasantdale
R40 - Residential
R - Residential
RA - Residential Agriculture
HC - Highway Commercial
HC-1 - Highway Commercial 1
M - Manufacturing
MD - Marine
Knickerbocker Historic District
Community Planning & Environmental Associates
Nan Stolzenburg, AICP - www.planningbetterplaces.com
152 Stolzenburg Road, Berne, NY 12023
Don Meltz, Planning and GIS - www.donmeltz.com
Zoning Map
4-21-2010
0 0.5 1 2 3
Miles

APPENDIX G – RENSSELAER COUNTY SEWER REPORT

Rensselaer County Sewer Report by MJ Engineering (October 19, 2019)

Sewer Report

for

Rensselaer County Sewer

City of Troy
Rensselaer County, New York

October 19, 2019

Prepared by:

Engineering and
Land Surveying, P.C.

1533 Crescent Road
Clifton Park, NY 12065
Tel: 518-371-0799
Fax: 518-371-0822

SEWER REPORT
for
RENSSELAER COUNTY SEWER
CITY OF TROY, RENSSELAER COUNTY, NY

Table of Contents

L:\PROJECTS\MJ972 LAND DEVELOPMENT\972.42 TROY (2ND AVE -GOLUB PARCEL)\TRUCK SEWER REPORT 10.18.19.DOCX

1.0 INTRODUCTION

1.1 Project Description

This Engineering Report describes the existing sewer flow rates to the Rensselaer County sewer trunk line on 2nd Ave between Roosevelt Ave and Row B Way. Flow meters were installed within the existing 18-inch sewer pipe and 24-inch overflow pipe in this area to determine dry and wet weather flow conditions of the existing system.

1.2 Existing Sewer

The existing county truck sewer between Roosevelt Ave and Row B Way on 2nd Ave consists of an 18-inch RCP sewer and a 24-inch VCP overflow pipe. This Combined Sewer Overflow (CSO) system receives sewer effluent for the north end of Troy, Brunswick and Schaghticoke communities.

1.3 Study Area

A flow meter was installed down stream of manhole 00100 (on 2nd Ave within the 18-inch truck sewer) and on the overflow pipe downstream of manhole 10463 that directs sewer effluent to the river during rainfall events. See Exhibit 1 for location Map of study area. The flow meters were installed from 8/21/19 until 9/30/19 (40-days) to determine the flow characteristics of the system. Data was collected for every 5 minutes within both pipes. The data collect included velocity, gallons per minute and depth of flow within the system.

1.4 Truck Sewer

Based upon the data the average daily flow rate was 143 gpm and had and average depth of 5.36-inches within the 18-inch truck sewer pipe. Typical sewer peak flow rates between 8:30 am to 10 am ranged from 110 to 175 gpm within the system while between 8 pm and 10 pm the sewer system it appears to experience the largest sewer flow rates. Between 8 pm and 10 pm the flow within the sewer ranged from 100 to 350 gpm within the system. Charts within Exhibit B demonstrate daily averages of flow rates within the system over the 40-day study period and a sample of 1-week data is in Exhibit C

1.5 Overflow

The sewer overflow meter received recorded flow on the following dates:
8/21 between 4:40pm to 8:45 pm,
9/2 between 4 pm and 4:30 pm

Per U.S Climate Data 1.85 inches precipitation occurred on August 21 & 22, 2019 and 0.78 inches occurred in on September 2 & 3, 2019. Most of the precipitation over September 2 & 3 ,2019 occurred on September 3 according to records. As isolated thunderstorms over the summer typically happen in late afternoon and can vastly vary from location to location and most likely a thunderstorm on 9/2 caused the overflow meter to record data. Reviewing the flow meter data on 9/2/19 at 3:50 pm the depth of flow was 5.6-inches and a flow rate of 168 gpm within the 18-inch truck sewer. By 4:40 pm the depth of flow recedes to 10.6-inches and a flow rate of 700 gpm. Then around 6 pm the flows are near normal levels. This again supports that an isolate thunderstorm occurred on 9/2/19 in the late afternoon.

See Exhibit D for precipitation data, flow data and illustration graphs.

2.0 CONCLUSIONS

2.1 Dry-Weather

The existing 18-inches truck sewer depth of flow varies between 5 inches and 7-inches or 130 gpm to 300 gpm on average. During dry weather the existing 18-inch truck sewer has additional capacity. Assuming keeping the depth of flow within the 18-inch pipe below 12-inches there is another capacity flow an additional flow of about 600 gpm. Using a peaking factor of 4, and using 600 gpm of allowed flow, it would result in approximately 1,900 bedrooms (assuming 110 gpd) that could be added to the existing system.

2.2 Wet-Weather

Reviewing the data on both the 18-inch truck sewer, 24-inch overflow and precipitation, the overflow is activated based upon small amounts of rainfall. This is mostly due to the large watershed in which stormwater runoff is collected by the CSO system. Any new sewer flows to the CSO system should be offset by removing CSO connections within the watershed. A simple stormwater runoff analysis for the 1-year storm event contributing area verses peak runoff to proposed peak sewer rates should be preformed to determine number of catch basin that need to be disconnected from the CSO system.

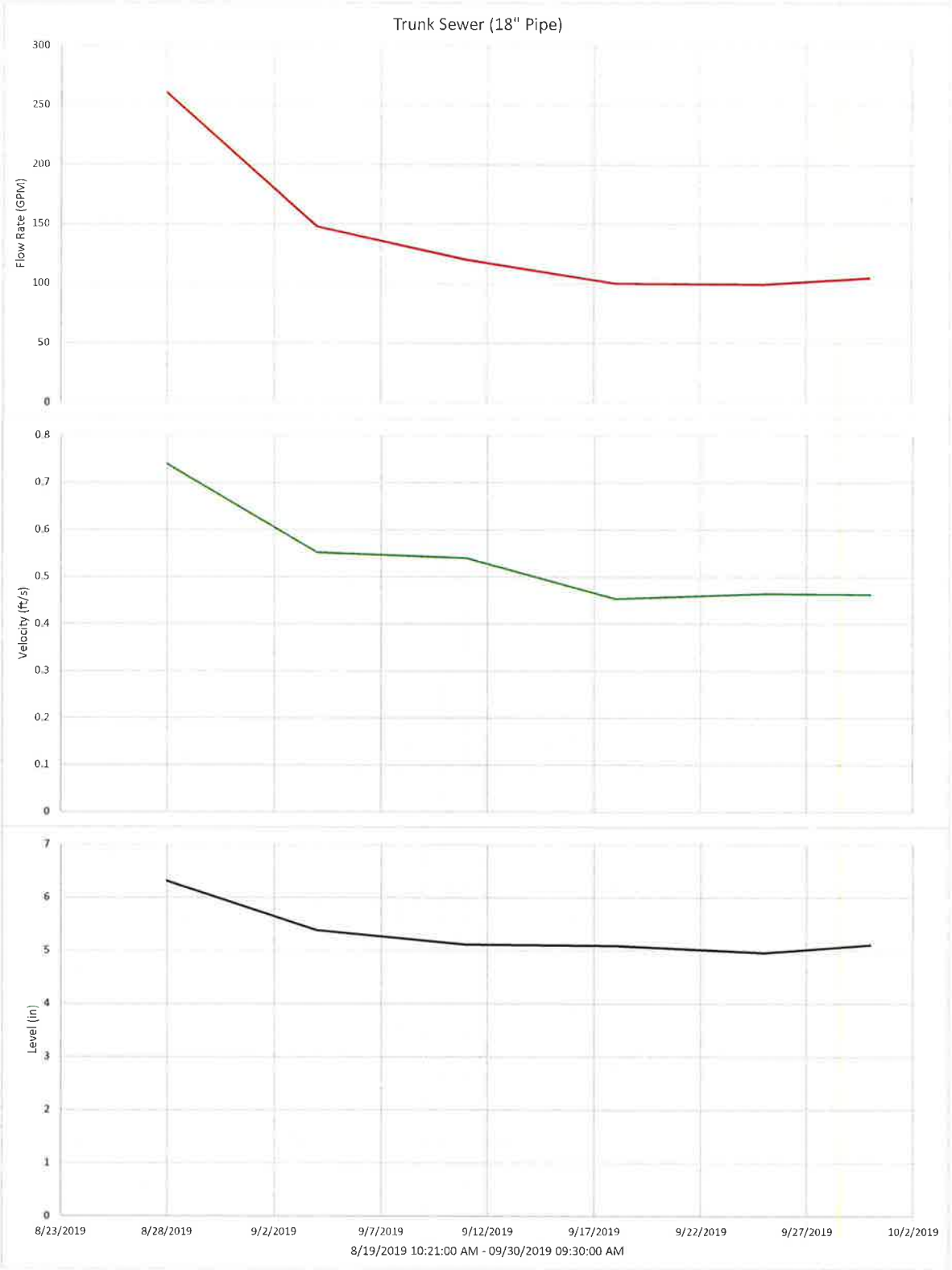
3.0 EXHIBITS

Exhibit A – Study Area Map

City of Troy

123rd Street to City Line

Exhibit B – 18-inch Truck Sewer Flow Meter Graphs


Trunk Sewer (18" Pipe)
Flow Rate (GPM)
300
250
200
150
100
50
0
Velocity (ft/s)
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Level (in)
7
6
5
4
3
2
1
0
8/23/2019
8/28/2019
9/2/2019
9/7/2019
9/12/2019
9/17/2019
9/22/2019
9/27/2019
10/2/2019
8/19/2019 10:21:00 AM - 09/30/2019 09:30:00 AM

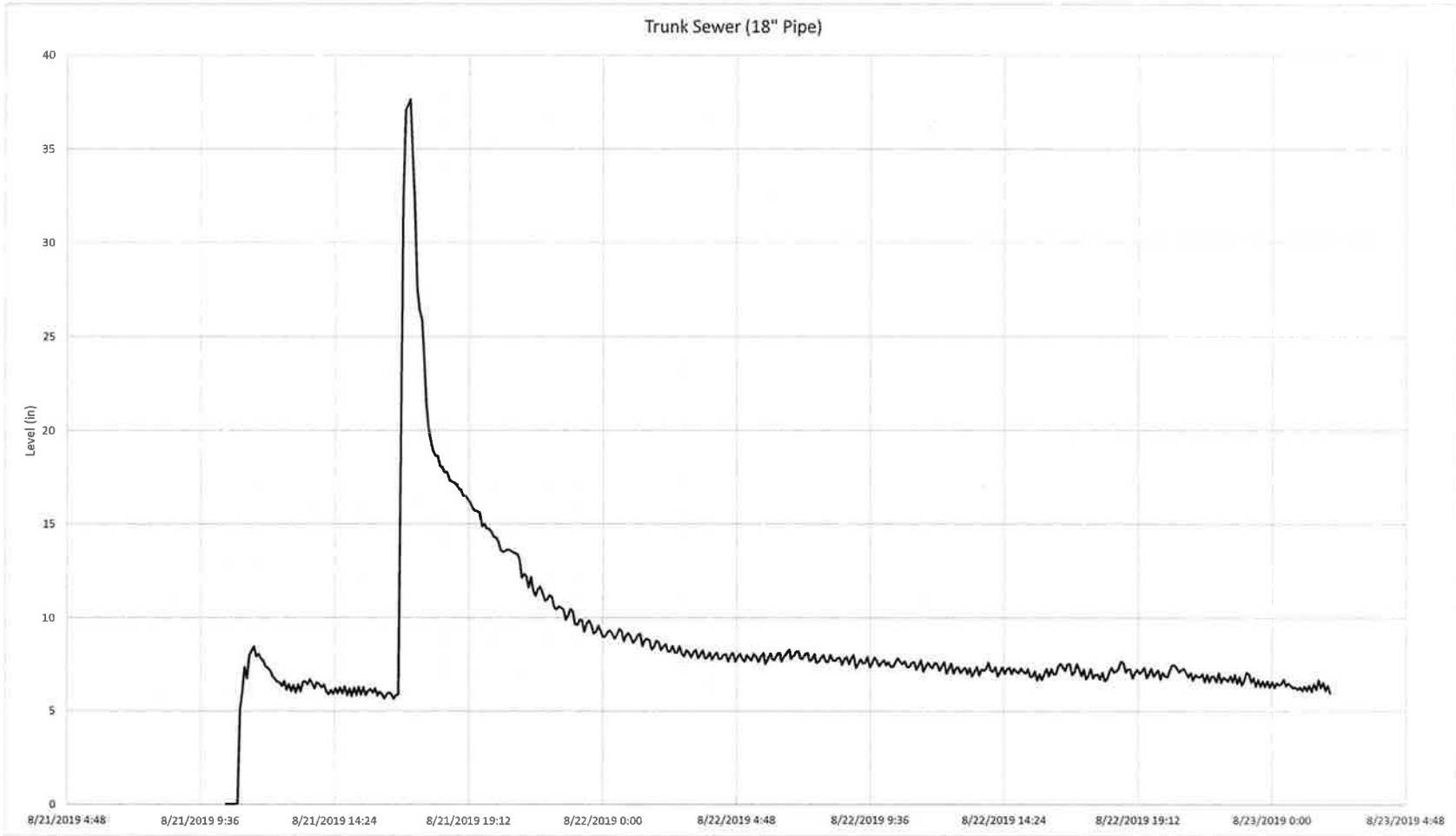

Trunk Sewer (18" Pipe)
Level (in)
40
35
30
25
20
15
10
5
0
8/21/2019 4:48
8/21/2019 9:36
8/21/2019 14:24
8/21/2019 19:12
8/22/2019 0:00
8/22/2019 4:48
8/22/2019 9:36
8/22/2019 14:24
8/22/2019 19:12
8/23/2019 0:00
8/23/2019 4:48

Exhibit C – One Week Sample Data From Flow Meter with 18-inch Truck Sewer

Site Name	Troy Sewer Line		
Isco Quantity	Level	Velocity	Flow Rate
Label	Level	Velocity	Flow Rate
Units	in	ft/s	gpm
Resolution	0.1	0.1	0.1
Significant Digits	0	0	0
8/21/2019 10:20	0.012	0.188	0
8/21/2019 10:25	-0.012	0	0
8/21/2019 10:30	0.017	0	0
8/21/2019 10:35	0.009	0	0
8/21/2019 10:40	0.023	0	0
8/21/2019 10:45	0.026	0	0
8/21/2019 10:50	0.022	0	0
8/21/2019 10:55	0.034	0	0
8/21/2019 11:00	5.053	0.41	120.729
8/21/2019 11:05	6.024	0.826	227.818
8/21/2019 11:10	7.342	1.007	368.254
8/21/2019 11:15	6.738	0.976	316.661
8/21/2019 11:20	7.987	1.194	490.31
8/21/2019 11:25	8.223	1.201	515.91
8/21/2019 11:30	8.443	1.185	524.654
8/21/2019 11:35	7.909	1.102	446.241
8/21/2019 11:40	8.045	1.167	484.019
8/21/2019 11:45	7.779	1.144	453.047
8/21/2019 11:50	7.681	1.096	426.426
8/21/2019 11:55	7.364	1.024	375.861
8/21/2019 12:00	7.277	1.073	387.378
8/21/2019 12:05	7.14	1.048	368.615
8/21/2019 12:10	6.86	1.02	339.364
8/21/2019 12:15	6.693	0.997	320.442
8/21/2019 12:20	6.537	0.9	279.956
8/21/2019 12:25	6.527	0.942	292.295
8/21/2019 12:30	6.319	0.931	276.07
8/21/2019 12:35	6.596	0.882	277.774
8/21/2019 12:40	6.124	0.842	238.896
8/21/2019 12:45	6.431	0.917	278.817
8/21/2019 12:50	6.046	0.82	228.56
8/21/2019 12:55	6.386	0.934	280.987
8/21/2019 13:00	5.975	0.837	229.268
8/21/2019 13:05	6.415	0.862	261.049
8/21/2019 13:10	6.034	0.854	237.231
8/21/2019 13:15	6.552	0.935	291.821
8/21/2019 13:20	6.579	0.937	294.044
8/21/2019 13:25	6.409	0.884	267.452
8/21/2019 13:30	6.686	0.925	296.726
8/21/2019 13:35	6.462	0.854	261.339
8/21/2019 13:40	6.198	0.852	245.763
8/21/2019 13:45	6.522	0.925	286.691
8/21/2019 13:50	6.434	0.923	280.566
8/21/2019 13:55	6.246	0.912	266.022
8/21/2019 14:00	6.398	0.878	264.862
8/21/2019 14:05	6.051	0.792	220.835
8/21/2019 14:10	5.874	0.813	217.583
8/21/2019 14:15	6.123	0.843	239.113
8/21/2019 14:20	5.904	0.775	208.917
8/21/2019 14:25	6.213	0.819	237.189
8/21/2019 14:30	5.931	0.829	224.707
8/21/2019 14:35	6.263	0.88	257.585

8/21/2019 14:40	5.928	0.773	209.371
8/21/2019 14:45	6.319	0.877	259.937
8/21/2019 14:50	5.825	0.743	196.328
8/21/2019 14:55	6.206	0.854	246.8
8/21/2019 15:00	5.785	0.721	188.886
8/21/2019 15:05	6.242	0.866	252.549
8/21/2019 15:10	5.827	0.774	204.695
8/21/2019 15:15	6.278	0.839	246.552
8/21/2019 15:20	5.867	0.775	206.887
8/21/2019 15:25	6.265	0.883	258.703
8/21/2019 15:30	5.826	0.79	208.92
8/21/2019 15:35	6.073	0.776	217.649
8/21/2019 15:40	6.162	0.849	242.896
8/21/2019 15:45	5.958	0.794	216.782
8/21/2019 15:50	6.216	0.908	263.04
8/21/2019 15:55	5.811	0.764	201.317
8/21/2019 16:00	6.013	0.801	221.429
8/21/2019 16:05	5.887	0.77	206.55
8/21/2019 16:10	5.656	0.716	181.602
8/21/2019 16:15	5.877	0.827	221.32
8/21/2019 16:20	5.987	0.793	217.908
8/21/2019 16:25	5.897	0.785	211.155
8/21/2019 16:30	5.641	0.749	189.327
8/21/2019 16:35	5.844	0.799	212.179
8/21/2019 16:40	5.87	0.787	210.273
8/21/2019 16:45	18.986	1.976	2363.52
8/21/2019 16:50	32.207	1.734	2445.34
8/21/2019 16:55	37.107	1.821	2567.61
8/21/2019 17:00	37.367	1.836	2589.01
8/21/2019 17:05	37.651	1.851	2610.58
8/21/2019 17:10	34.734	1.867	2632.34
8/21/2019 17:15	31.981	1.882	2654.27
8/21/2019 17:20	27.545	1.898	2676.39
8/21/2019 17:25	26.378	6.084	8578.74
8/21/2019 17:30	25.936	5.252	7405.7
8/21/2019 17:35	23.931	4.613	6502.8
8/21/2019 17:40	21.306	1.958	2590.12
8/21/2019 17:45	20.102	1.975	2491.3
8/21/2019 17:50	19.437	2.804	3430.18
8/21/2019 17:55	18.926	2.516	3000.77
8/21/2019 18:00	18.664	2.547	2996.41
8/21/2019 18:05	18.626	2.638	3097.65
8/21/2019 18:10	18.113	2.711	3095.11
8/21/2019 18:15	18.027	2.386	2710.89
8/21/2019 18:20	17.764	2.233	2499.18
8/21/2019 18:25	17.774	2.037	2280.88
8/21/2019 18:30	17.369	2.494	2725.85
8/21/2019 18:35	17.278	2.558	2779.94
8/21/2019 18:40	17.223	2.371	2568.21
8/21/2019 18:45	17.128	2.266	2439.4
8/21/2019 18:50	16.913	2.145	2278.33
8/21/2019 18:55	16.813	2.081	2195.85
8/21/2019 19:00	16.506	2.274	2351.05
8/21/2019 19:05	16.496	2.036	2103.6
8/21/2019 19:10	16.289	2.01	2048.46
8/21/2019 19:15	16.116	1.993	2006.86
8/21/2019 19:20	15.814	1.766	1740.3
8/21/2019 19:25	15.707	1.917	1874.09
8/21/2019 19:30	15.686	1.83	1786.62

8/21/2019 19:35	15.584	1.846	1788.51
8/21/2019 19:40	14.866	1.52	1394.51
8/21/2019 19:45	15.005	1.731	1605.19
8/21/2019 19:50	14.74	1.703	1546.61
8/21/2019 19:55	14.737	1.454	1320.5
8/21/2019 20:00	14.566	1.661	1487.59
8/21/2019 20:05	14.286	1.599	1399.11
8/21/2019 20:10	14.258	1.546	1349.38
8/21/2019 20:15	14.021	1.508	1290.52
8/21/2019 20:20	13.564	1.445	1187.02
8/21/2019 20:25	13.474	1.398	1139.79
8/21/2019 20:30	13.539	1.365	1118.86
8/21/2019 20:35	13.608	1.312	1081.96
8/21/2019 20:40	13.574	1.357	1116.4
8/21/2019 20:45	13.485	1.383	1128.51
8/21/2019 20:50	13.418	1.347	1092.1
8/21/2019 20:55	13.38	1.331	1075.75
8/21/2019 21:00	13.114	1.29	1016.64
8/21/2019 21:05	12.116	1.229	877.302
8/21/2019 21:10	12.31	1.32	960.865
8/21/2019 21:15	12.186	1.279	919.784
8/21/2019 21:20	11.585	1.315	886.11
8/21/2019 21:25	12.15	1.308	936.508
8/21/2019 21:30	11.419	1.184	783.417
8/21/2019 21:35	11.143	1.229	787.543
8/21/2019 21:40	11.492	1.241	827.598
8/21/2019 21:45	11.646	0.967	655.92
8/21/2019 21:50	11.302	1.291	842.79
8/21/2019 21:55	10.88	1.275	792.232
8/21/2019 22:00	10.959	1.284	805.215
8/21/2019 22:05	11.181	1.288	829.227
8/21/2019 22:10	11.089	1.406	895.792
8/21/2019 22:15	10.528	1.253	745.836
8/21/2019 22:20	10.424	1.158	680.319
8/21/2019 22:25	10.585	1.385	830.261
8/21/2019 22:30	10.497	1.245	738.122
8/21/2019 22:35	10.412	1.208	708.714
8/21/2019 22:40	9.862	1.241	677.328
8/21/2019 22:45	10.111	1.175	663.172
8/21/2019 22:50	10.447	1.126	663.098
8/21/2019 22:55	10.304	1.262	729.896
8/21/2019 23:00	9.641	1.264	669.646
8/21/2019 23:05	9.596	1.205	634.133
8/21/2019 23:10	9.881	1.193	653.23
8/21/2019 23:15	9.85	1.233	671.843
8/21/2019 23:20	9.241	1.3	650.502
8/21/2019 23:25	9.664	1.301	691.417
8/21/2019 23:30	9.822	1.167	633.625
8/21/2019 23:35	9.563	1.178	617.386
8/21/2019 23:40	9.135	1.33	655.435
8/21/2019 23:45	9.216	1.217	607.042
8/21/2019 23:50	9.551	1.334	697.716
8/21/2019 23:55	9.275	1.112	559.518
8/22/2019 0:00	8.949	1.221	585.401
8/22/2019 0:05	8.981	1.325	638.099
8/22/2019 0:10	9.216	1.142	569.722
8/22/2019 0:15	9.299	1.2	605.781
8/22/2019 0:20	9.144	1.26	621.658
8/22/2019 0:25	8.838	1.148	541.014

8/22/2019 0:30	9.064	1.344	655.263
8/22/2019 0:35	9.385	1.073	548.237
8/22/2019 0:40	9.252	1.128	565.289
8/22/2019 0:45	8.713	1.272	588.217
8/22/2019 0:50	9.038	1.308	635.415
8/22/2019 0:55	9.145	1.198	591.406
8/22/2019 1:00	8.938	1.125	538.274
8/22/2019 1:05	8.63	1.275	581.974
8/22/2019 1:10	8.789	1.322	618.53
8/22/2019 1:15	9.055	1.26	613.413
8/22/2019 1:20	9.115	1.228	603.305
8/22/2019 1:25	8.459	1.208	536.547
8/22/2019 1:30	8.788	1.3	607.847
8/22/2019 1:35	8.861	1.274	602.592
8/22/2019 1:40	8.765	1.215	566.33
8/22/2019 1:45	8.268	1.233	530.744
8/22/2019 1:50	8.412	1.352	595.723
8/22/2019 1:55	8.743	1.182	548.929
8/22/2019 2:00	8.669	1.125	516.659
8/22/2019 2:05	8.25	1.158	497.026
8/22/2019 2:10	8.42	1.247	550.067
8/22/2019 2:15	8.561	1.349	608.911
8/22/2019 2:20	8.168	1.294	547.593
8/22/2019 2:25	8.182	1.183	501.918
8/22/2019 2:30	8.475	1.273	566.713
8/22/2019 2:35	8.104	1.249	523.049
8/22/2019 2:40	8.116	1.228	515.282
8/22/2019 2:45	8.465	1.304	579.533
8/22/2019 2:50	8.047	1.329	551.304
8/22/2019 2:55	7.908	1.194	483.344
8/22/2019 3:00	8.252	1.331	571.525
8/22/2019 3:05	8.088	1.304	544.677
8/22/2019 3:10	7.858	1.228	493.003
8/22/2019 3:15	8.127	1.253	526.682
8/22/2019 3:20	8.26	1.308	562.007
8/22/2019 3:25	7.806	1.2	477.206
8/22/2019 3:30	8.009	1.279	526.904
8/22/2019 3:35	8.232	1.214	519.53
8/22/2019 3:40	7.79	1.237	490.637
8/22/2019 3:45	7.848	1.172	469.869
8/22/2019 3:50	8.119	1.151	483.125
8/22/2019 3:55	7.733	1.224	480.62
8/22/2019 4:00	7.964	1.115	456.1
8/22/2019 4:05	8.119	1.255	527.082
8/22/2019 4:10	7.759	1.095	431.84
8/22/2019 4:15	7.8	1.179	468.483
8/22/2019 4:20	7.987	1.259	516.9
8/22/2019 4:25	8.035	1.206	499.311
8/22/2019 4:30	7.628	1.127	434.289
8/22/2019 4:35	7.948	1.182	482.147
8/22/2019 4:40	8.1	1.198	501.409
8/22/2019 4:45	7.615	1.139	437.748
8/22/2019 4:50	7.862	1.179	473.729
8/22/2019 4:55	8.054	1.145	475.28
8/22/2019 5:00	7.779	1.078	426.802
8/22/2019 5:05	7.618	1.171	450.336
8/22/2019 5:10	7.983	1.234	506.341
8/22/2019 5:15	7.811	1.3	517.659
8/22/2019 5:20	7.684	1.023	398.397

8/22/2019 5:25	8.053	1.022	424.314
8/22/2019 5:30	7.89	1.16	468.169
8/22/2019 5:35	7.591	1.126	430.981
8/22/2019 5:40	7.909	1.148	464.995
8/22/2019 5:45	8.104	1.14	477.509
8/22/2019 5:50	7.502	1.111	418.498
8/22/2019 5:55	7.748	1.1	432.983
8/22/2019 6:00	8.075	1.135	472.935
8/22/2019 6:05	7.751	1.297	510.941
8/22/2019 6:10	7.717	1.117	437.541
8/22/2019 6:15	8.076	1.207	503.211
8/22/2019 6:20	8.119	1.171	491.761
8/22/2019 6:25	7.63	1.121	432.077
8/22/2019 6:30	7.91	1.214	491.583
8/22/2019 6:35	8.12	1.205	506.188
8/22/2019 6:40	8.276	1.263	544.183
8/22/2019 6:45	7.771	1.157	457.245
8/22/2019 6:50	7.931	1.081	439.53
8/22/2019 6:55	8.178	1.197	507.406
8/22/2019 7:00	8.176	1.222	518.117
8/22/2019 7:05	7.802	1.11	441.183
8/22/2019 7:10	7.757	1.016	400.698
8/22/2019 7:15	8.07	1.139	474.115
8/22/2019 7:20	8.108	1.14	477.534
8/22/2019 7:25	7.66	1.017	394.301
8/22/2019 7:30	7.731	1.09	427.895
8/22/2019 7:35	8.03	1.047	432.935
8/22/2019 7:40	7.556	1.05	399.568
8/22/2019 7:45	7.624	1.065	410.141
8/22/2019 7:50	7.825	1.161	463.528
8/22/2019 7:55	7.989	1.11	455.889
8/22/2019 8:00	7.63	1.094	421.866
8/22/2019 8:05	7.602	1.108	424.908
8/22/2019 8:10	7.998	0.981	403.308
8/22/2019 8:15	7.7	1.157	451.811
8/22/2019 8:20	7.663	1.123	435.322
8/22/2019 8:25	7.823	1.041	415.534
8/22/2019 8:30	7.83	1.213	484.615
8/22/2019 8:35	7.445	1.096	408.446
8/22/2019 8:40	7.746	1.066	419.544
8/22/2019 8:45	7.884	1.095	441.552
8/22/2019 8:50	7.488	1.11	417.047
8/22/2019 8:55	7.766	1.064	420.495
8/22/2019 9:00	7.992	1.186	487.287
8/22/2019 9:05	7.288	1.082	391.503
8/22/2019 9:10	7.522	1.034	390.753
8/22/2019 9:15	7.754	1.194	470.535
8/22/2019 9:20	7.534	1.09	412.729
8/22/2019 9:25	7.565	1.064	405.334
8/22/2019 9:30	7.874	1.07	430.706
8/22/2019 9:35	7.316	1.058	384.972
8/22/2019 9:40	7.544	1.019	386.844
8/22/2019 9:45	7.856	1.121	449.708
8/22/2019 9:50	7.665	1.079	418.643
8/22/2019 9:55	7.38	1.051	387.022
8/22/2019 10:00	7.572	1.221	465.639
8/22/2019 10:05	7.711	1.041	407.217
8/22/2019 10:10	7.436	1.065	396.355
8/22/2019 10:15	7.601	1.094	419.524

8/22/2019 10:20	7.348	1.062	388.769
8/22/2019 10:25	7.349	1.015	371.364
8/22/2019 10:30	7.583	1.045	399.259
8/22/2019 10:35	7.814	1.153	459.312
8/22/2019 10:40	7.633	1.116	430.389
8/22/2019 10:45	7.487	1.089	408.984
8/22/2019 10:50	7.65	1.167	451.338
8/22/2019 10:55	7.333	1.062	387.44
8/22/2019 11:00	7.339	1.12	409.279
8/22/2019 11:05	7.557	1.015	386.224
8/22/2019 11:10	7.623	1.025	394.483
8/22/2019 11:15	7.187	0.929	329.588
8/22/2019 11:20	7.427	1.082	401.906
8/22/2019 11:25	7.715	1.06	415.049
8/22/2019 11:30	7.082	0.97	337.145
8/22/2019 11:35	7.345	1.03	376.662
8/22/2019 11:40	7.574	0.96	366.379
8/22/2019 11:45	7.375	1.085	399.076
8/22/2019 11:50	7.275	1.015	366.145
8/22/2019 11:55	7.58	1.068	407.927
8/22/2019 12:00	7.501	1.025	386.011
8/22/2019 12:05	7.127	0.994	348.68
8/22/2019 12:10	7.383	0.997	367.319
8/22/2019 12:15	7.6	1.024	392.438
8/22/2019 12:20	6.991	1.027	350.706
8/22/2019 12:25	7.241	1.006	360.787
8/22/2019 12:30	7.533	1.062	402.313
8/22/2019 12:35	6.985	1.091	372.232
8/22/2019 12:40	7.275	1.005	362.556
8/22/2019 12:45	7.329	1.002	365.369
8/22/2019 12:50	7.011	1.042	357.092
8/22/2019 12:55	7.187	1.001	355.075
8/22/2019 13:00	7.302	1.038	376.647
8/22/2019 13:05	6.966	1	339.811
8/22/2019 13:10	7.275	1.026	370.24
8/22/2019 13:15	6.835	1.014	335.74
8/22/2019 13:20	7.075	1.002	347.779
8/22/2019 13:25	7.348	1.116	408.512
8/22/2019 13:30	6.884	0.999	333.9
8/22/2019 13:35	7.206	1.018	362.437
8/22/2019 13:40	7.147	1.065	374.999
8/22/2019 13:45	7.243	1.027	368.317
8/22/2019 13:50	7.588	1.006	384.747
8/22/2019 13:55	7.156	1.024	361.338
8/22/2019 14:00	7.097	0.979	341.418
8/22/2019 14:05	7.337	1.079	394.18
8/22/2019 14:10	6.847	0.984	326.344
8/22/2019 14:15	7.062	0.969	335.554
8/22/2019 14:20	7.333	1.01	368.703
8/22/2019 14:25	6.977	0.924	314.498
8/22/2019 14:30	7.236	1.019	365.234
8/22/2019 14:35	7.305	1.022	370.987
8/22/2019 14:40	6.964	1.012	343.724
8/22/2019 14:45	7.255	1.011	363.527
8/22/2019 14:50	7.089	0.97	337.876
8/22/2019 14:55	7.014	0.993	340.812
8/22/2019 15:00	7.267	1.031	371.617
8/22/2019 15:05	7.082	0.994	345.462
8/22/2019 15:10	6.994	1.003	342.698

8/22/2019 15:15	7.234	1.017	364.311
8/22/2019 15:20	6.809	0.98	322.459
8/22/2019 15:25	6.844	0.959	317.91
8/22/2019 15:30	7.11	1.04	363.604
8/22/2019 15:35	6.626	0.992	314.527
8/22/2019 15:40	6.96	0.983	333.717
8/22/2019 15:45	6.653	0.881	280.889
8/22/2019 15:50	6.941	0.979	330.964
8/22/2019 15:55	7.248	1.017	365.111
8/22/2019 16:00	6.852	0.934	310.14
8/22/2019 16:05	7.245	1.013	363.365
8/22/2019 16:10	6.958	0.931	315.954
8/22/2019 16:15	6.955	0.996	337.656
8/22/2019 16:20	7.36	0.975	357.612
8/22/2019 16:25	7.523	1.044	394.571
8/22/2019 16:30	7.313	1.048	380.848
8/22/2019 16:35	7.138	0.965	339.367
8/22/2019 16:40	7.489	1.041	390.96
8/22/2019 16:45	7.508	1.027	387.056
8/22/2019 16:50	6.912	1.006	338.215
8/22/2019 16:55	7.071	0.958	332.465
8/22/2019 17:00	7.504	1.023	385.449
8/22/2019 17:05	7.233	1.024	366.775
8/22/2019 17:10	6.861	0.894	297.329
8/22/2019 17:15	7.213	1.034	368.718
8/22/2019 17:20	6.685	0.995	319.319
8/22/2019 17:25	6.878	0.979	326.723
8/22/2019 17:30	7.239	1.103	395.395
8/22/2019 17:35	6.74	0.887	287.753
8/22/2019 17:40	6.931	1.039	350.704
8/22/2019 17:45	6.943	0.879	297.399
8/22/2019 17:50	6.683	0.958	307.1
8/22/2019 17:55	7.046	0.984	339.853
8/22/2019 18:00	6.592	0.992	312.177
8/22/2019 18:05	6.701	0.936	301.316
8/22/2019 18:10	7.056	1	346.041
8/22/2019 18:15	7.314	0.926	336.828
8/22/2019 18:20	7.053	1.004	347.089
8/22/2019 18:25	7.108	1.027	358.871
8/22/2019 18:30	7.266	0.998	359.484
8/22/2019 18:35	7.65	1.069	413.438
8/22/2019 18:40	7.558	0.973	370.377
8/22/2019 18:45	7.057	0.975	337.495
8/22/2019 18:50	7.229	1.009	361.067
8/22/2019 18:55	7.21	0.952	339.19
8/22/2019 19:00	6.744	0.962	312.323
8/22/2019 19:05	7.03	0.887	305.218
8/22/2019 19:10	7.207	1.049	373.657
8/22/2019 19:15	6.986	0.998	340.629
8/22/2019 19:20	7.098	0.992	346.113
8/22/2019 19:25	7.305	0.994	360.847
8/22/2019 19:30	6.753	0.982	319.54
8/22/2019 19:35	6.969	0.94	319.445
8/22/2019 19:40	7.267	1.013	365.147
8/22/2019 19:45	6.84	0.934	309.518
8/22/2019 19:50	6.996	0.98	334.968
8/22/2019 19:55	7.176	0.935	331.076
8/22/2019 20:00	6.668	0.887	283.744
8/22/2019 20:05	7.047	0.958	330.664

8/22/2019 20:10	6.85	0.954	316.621
8/22/2019 20:15	6.804	0.979	321.911
8/22/2019 20:20	7.197	1.012	359.763
8/22/2019 20:25	7.449	1.034	385.684
8/22/2019 20:30	7.431	1.047	389.134
8/22/2019 20:35	7.275	1.01	364.515
8/22/2019 20:40	7.057	0.988	341.988
8/22/2019 20:45	7.196	1.009	358.746
8/22/2019 20:50	7.248	1.075	386.13
8/22/2019 20:55	7.032	0.988	340.202
8/22/2019 21:00	6.803	0.951	312.74
8/22/2019 21:05	7.029	1.005	345.87
8/22/2019 21:10	6.636	0.891	283.078
8/22/2019 21:15	6.931	0.934	315.054
8/22/2019 21:20	6.804	0.938	308.553
8/22/2019 21:25	6.807	0.966	317.774
8/22/2019 21:30	6.978	1.028	350.115
8/22/2019 21:35	6.541	0.962	299.445
8/22/2019 21:40	6.934	0.991	334.581
8/22/2019 21:45	6.545	0.933	290.458
8/22/2019 21:50	6.845	0.994	329.544
8/22/2019 21:55	6.843	0.826	273.932
8/22/2019 22:00	6.542	0.891	277.391
8/22/2019 22:05	7.022	0.991	340.686
8/22/2019 22:10	6.515	0.95	294.067
8/22/2019 22:15	6.785	0.939	307.555
8/22/2019 22:20	6.695	1.004	322.787
8/22/2019 22:25	6.572	0.863	270.372
8/22/2019 22:30	6.87	0.963	320.799
8/22/2019 22:35	6.546	0.885	275.664
8/22/2019 22:40	6.934	0.961	324.343
8/22/2019 22:45	6.459	0.889	271.969
8/22/2019 22:50	6.819	0.899	296.481
8/22/2019 22:55	6.375	0.88	264.051
8/22/2019 23:00	6.646	0.931	296.219
8/22/2019 23:05	7.045	0.948	327.275
8/22/2019 23:10	6.959	1.004	340.855
8/22/2019 23:15	6.523	0.953	295.421
8/22/2019 23:20	6.775	0.878	286.962
8/22/2019 23:25	6.304	0.854	252.315
8/22/2019 23:30	6.667	0.95	303.586
8/22/2019 23:35	6.303	0.905	267.424
8/22/2019 23:40	6.594	0.939	295.542
8/22/2019 23:45	6.296	0.88	259.514
8/22/2019 23:50	6.596	0.902	284.142
8/22/2019 23:55	6.255	0.877	256.497
8/23/2019 0:00	6.553	0.91	283.993
8/23/2019 0:05	6.236	0.835	242.936
8/23/2019 0:10	6.5	0.911	280.925
8/23/2019 0:15	6.383	0.885	266.218
8/23/2019 0:20	6.448	0.88	268.39
8/23/2019 0:25	6.68	0.937	300.294
8/23/2019 0:30	6.325	0.898	266.555
8/23/2019 0:35	6.482	0.907	278.754
8/23/2019 0:40	6.365	0.899	269.413
8/23/2019 0:45	6.226	0.896	260.065
8/23/2019 0:50	6.276	0.904	265.633
8/23/2019 0:55	6.135	0.9	255.872
8/23/2019 1:00	6.273	0.891	261.383

8/23/2019 1:05	6.069	0.869	243.501
8/23/2019 1:10	6.327	0.846	251.164
8/23/2019 1:15	6.077	0.844	236.936
8/23/2019 1:20	6.37	0.983	294.725
8/23/2019 1:25	6.036	0.831	231.083
8/23/2019 1:30	6.454	0.897	274.098
8/23/2019 1:35	6.147	0.842	240.152
8/23/2019 1:40	6.662	0.969	309.273
8/23/2019 1:45	6.23	0.923	268.239
8/23/2019 1:50	6.527	0.851	263.953
8/23/2019 1:55	6.083	0.839	235.749
8/23/2019 2:00	6.365	0.886	265.47
8/23/2019 2:05	5.951	0.862	234.937
8/23/2019 2:10	5.97	0.851	233.011
8/23/2019 2:15	6.085	0.854	240.046
8/23/2019 2:20	5.887	0.826	221.636
8/23/2019 2:25	6.095	0.887	249.991
8/23/2019 2:30	5.788	0.78	204.235
8/23/2019 2:35	6.151	0.911	260.079
8/23/2019 2:40	5.846	0.772	205.114
8/23/2019 2:45	6.216	0.843	244.141
8/23/2019 2:50	5.854	0.878	233.918
8/23/2019 2:55	6.237	0.93	270.681
8/23/2019 3:00	5.901	0.831	223.66
8/23/2019 3:05	6.335	0.877	260.979
8/23/2019 3:10	6.047	0.879	244.98
8/23/2019 3:15	6.214	0.845	244.72
8/23/2019 3:20	6.112	0.78	220.6
8/23/2019 3:25	6.378	0.875	262.732
8/23/2019 3:30	5.975	0.791	216.658
8/23/2019 3:35	6.042	0.812	226.016
8/23/2019 3:40	6.105	0.869	245.42
8/23/2019 3:45	5.833	0.744	197.168
8/23/2019 3:50	6.229	0.826	240.083
8/23/2019 3:55	5.874	0.802	214.66
8/23/2019 4:00	6.297	0.878	259.048
8/23/2019 4:05	5.86	0.853	227.313
8/23/2019 4:10	6.3	0.891	262.994
8/23/2019 4:15	5.92	0.854	231.124
8/23/2019 4:20	6.177	0.812	233.056
8/23/2019 4:25	5.973	0.844	231.121
8/23/2019 4:30	5.96	0.83	226.708
8/23/2019 4:35	6.038	0.826	229.755
8/23/2019 4:40	5.86	0.804	214.45
8/23/2019 4:45	6.114	0.851	240.916
8/23/2019 4:50	5.755	0.764	198.528
8/23/2019 4:55	6.215	0.807	233.906
8/23/2019 5:00	5.845	0.782	207.652
8/23/2019 5:05	6.148	0.836	238.472
8/23/2019 5:10	5.964	0.851	232.654
8/23/2019 5:15	6.3	0.843	248.738
8/23/2019 5:20	5.928	0.805	218.275
8/23/2019 5:25	6.239	0.916	266.625
8/23/2019 5:30	6.013	0.835	230.924
8/23/2019 5:35	6.26	0.872	255.008
8/23/2019 5:40	6.051	0.82	228.783
8/23/2019 5:45	6.166	0.883	253.085
8/23/2019 5:50	6.124	0.72	204.298
8/23/2019 5:55	6.2	0.923	266.395

8/23/2019 6:00	6.093	0.865	243.751
8/23/2019 6:05	6.092	0.814	229.277
8/23/2019 6:10	6.218	0.868	251.571
8/23/2019 6:15	6.444	0.854	260.232
8/23/2019 6:20	6.103	0.821	231.939
8/23/2019 6:25	6.469	0.862	264.036
8/23/2019 6:30	6.13	0.878	249.359
8/23/2019 6:35	6.58	0.914	286.695
8/23/2019 6:40	6.202	0.867	250.512
8/23/2019 6:45	6.537	0.892	277.307
8/23/2019 6:50	6.164	0.855	244.852
8/23/2019 6:55	6.281	0.82	240.964
8/23/2019 7:00	6.642	0.908	288.76
8/23/2019 7:05	6.263	0.875	256.231
8/23/2019 7:10	6.561	0.93	290.729
8/23/2019 7:15	6.107	0.824	232.893
8/23/2019 7:20	6.569	0.923	289.011
8/23/2019 7:25	6.127	0.857	243.321
8/23/2019 7:30	6.505	0.973	300.465
8/23/2019 7:35	6.53	0.917	284.718
8/23/2019 7:40	6.388	0.932	280.716
8/23/2019 7:45	6.525	0.923	286.369
8/23/2019 7:50	6.188	0.847	243.746
8/23/2019 7:55	6.561	0.854	266.773
8/23/2019 8:00	6.097	0.842	237.286
8/23/2019 8:05	6.381	0.82	246.638
8/23/2019 8:10	6.266	0.778	228.045
8/23/2019 8:15	6.197	0.826	238.395
8/23/2019 8:20	6.614	0.911	288.117
8/23/2019 8:25	6.054	0.861	240.204
8/23/2019 8:30	6.413	0.886	268.3
8/23/2019 8:35	6.194	0.815	234.996
8/23/2019 8:40	6.422	0.89	269.845
8/23/2019 8:45	6.47	0.926	283.838
8/23/2019 8:50	6.385	0.954	286.885
8/23/2019 8:55	6.702	0.993	319.671
8/23/2019 9:00	6.224	0.851	247.159
8/23/2019 9:05	6.544	0.905	281.889
8/23/2019 9:10	6.042	0.846	235.63
8/23/2019 9:15	6.54	0.851	264.691
8/23/2019 9:20	5.992	0.843	231.956
8/23/2019 9:25	6.348	0.857	255.91
8/23/2019 9:30	6.452	0.914	279.179
8/23/2019 9:35	6.156	0.82	234.519
8/23/2019 9:40	6.492	0.818	251.969
8/23/2019 9:45	6.21	0.854	247.001
8/23/2019 9:50	6.751	0.872	283.785
8/23/2019 9:55	6.5	0.94	289.889
8/23/2019 10:00	6.478	0.81	248.567
8/23/2019 10:05	6.551	0.873	272.386
8/23/2019 10:10	6.362	0.857	256.504
8/23/2019 10:15	6.6	0.925	291.462
8/23/2019 10:20	6.301	0.878	259.237
8/23/2019 10:25	6.498	0.879	271.054
8/23/2019 10:30	6.037	0.817	227.263
8/23/2019 10:35	6.467	0.862	264.024
8/23/2019 10:40	6.157	0.844	241.218
8/23/2019 10:45	6.457	0.914	279.461
8/23/2019 10:50	6.051	0.809	225.598

8/23/2019 10:55	6.373	0.873	262.021
8/23/2019 11:00	6.033	0.749	207.979
8/23/2019 11:05	6.413	0.871	263.758
8/23/2019 11:10	6.131	0.874	248.336
8/23/2019 11:15	6.255	0.779	227.657
8/23/2019 11:20	5.851	0.779	207.31
8/23/2019 11:25	6.434	0.897	272.67
8/23/2019 11:30	6.306	0.805	238.022
8/23/2019 11:35	6.254	0.897	262.152
8/23/2019 11:40	6.196	0.838	241.645
8/23/2019 11:45	6.177	0.838	240.565
8/23/2019 11:50	6.471	0.833	255.462
8/23/2019 11:55	6.019	0.845	234.111
8/23/2019 12:00	6.283	0.877	257.826
8/23/2019 12:05	5.913	0.746	201.457
8/23/2019 12:10	6.36	0.907	271.423
8/23/2019 12:15	5.942	0.786	213.748
8/23/2019 12:20	6.241	0.873	254.363
8/23/2019 12:25	5.981	0.765	209.955
8/23/2019 12:30	6.336	0.875	260.475
8/23/2019 12:35	6.055	0.774	216.207
8/23/2019 12:40	6.417	0.879	266.376
8/23/2019 12:45	6.021	0.761	210.853
8/23/2019 12:50	6.142	0.867	246.872
8/23/2019 12:55	5.909	0.833	224.574
8/23/2019 13:00	6.068	0.809	226.576
8/23/2019 13:05	6.051	0.807	225.025
8/23/2019 13:10	6.032	0.729	202.471
8/23/2019 13:15	6.336	0.891	265.058
8/23/2019 13:20	6.06	0.833	232.761
8/23/2019 13:25	6.427	0.868	263.622
8/23/2019 13:30	6.135	0.81	230.462
8/23/2019 13:35	6.447	0.864	263.574
8/23/2019 13:40	6.27	0.826	242.244
8/23/2019 13:45	6.63	0.894	283.407
8/23/2019 13:50	6.262	0.875	256.127
8/23/2019 13:55	6.437	0.863	262.518
8/23/2019 14:00	6.008	0.8	220.89
8/23/2019 14:05	6.325	0.89	264.153
8/23/2019 14:10	5.936	0.766	207.854
8/23/2019 14:15	6.476	0.84	257.753
8/23/2019 14:20	5.987	0.806	221.64
8/23/2019 14:25	6.322	0.873	259.102
8/23/2019 14:30	6.014	0.799	221.102
8/23/2019 14:35	6.442	0.925	281.918
8/23/2019 14:40	6.197	0.806	232.433
8/23/2019 14:45	6.447	0.819	249.776
8/23/2019 14:50	6.18	0.843	242.232
8/23/2019 14:55	6.431	0.842	256.015
8/23/2019 15:00	6.022	0.78	216.078
8/23/2019 15:05	6.361	0.86	257.423
8/23/2019 15:10	5.998	0.813	224.044
8/23/2019 15:15	6.192	0.838	241.468
8/23/2019 15:20	5.932	0.749	203.102
8/23/2019 15:25	6.287	0.79	232.695
8/23/2019 15:30	6.207	0.816	236.059
8/23/2019 15:35	6.202	0.777	224.27
8/23/2019 15:40	6.515	0.805	249.038
8/23/2019 15:45	5.965	0.782	213.854

8/23/2019 15:50	6.288	0.877	258.123
8/23/2019 15:55	5.82	0.763	201.419
8/23/2019 16:00	6.185	0.808	232.614
8/23/2019 16:05	5.841	0.745	197.782
8/23/2019 16:10	6.318	0.807	239.332
8/23/2019 16:15	5.872	0.711	190.104
8/23/2019 16:20	6.189	0.836	240.808
8/23/2019 16:25	6.024	0.73	202.407
8/23/2019 16:30	6.424	0.765	232.199
8/23/2019 16:35	5.983	0.802	220.185
8/23/2019 16:40	6.46	0.929	284.2
8/23/2019 16:45	6.15	0.817	233.226
8/23/2019 16:50	6.516	0.877	271.332
8/23/2019 16:55	6.169	0.814	233.187
8/23/2019 17:00	6.477	0.895	274.573
8/23/2019 17:05	6.383	0.866	260.608
8/23/2019 17:10	6.395	0.828	249.577
8/23/2019 17:15	6.322	0.872	258.798
8/23/2019 17:20	6.436	0.85	258.619
8/23/2019 17:25	6.244	0.84	245.033
8/23/2019 17:30	6.44	0.862	262.461
8/23/2019 17:35	6.323	0.84	249.404
8/23/2019 17:40	6.601	0.858	270.376
8/23/2019 17:45	6.343	0.8	238.373
8/23/2019 17:50	6.589	0.86	270.364
8/23/2019 17:55	6.106	0.762	215.45
8/23/2019 18:00	6.316	0.789	233.8
8/23/2019 18:05	6.035	0.691	192.177
8/23/2019 18:10	6.453	0.827	252.522
8/23/2019 18:15	6.001	0.714	196.822
8/23/2019 18:20	6.551	0.876	273.32
8/23/2019 18:25	6.207	0.787	227.605
8/23/2019 18:30	6.543	0.801	249.333
8/23/2019 18:35	6.122	0.843	239.099
8/23/2019 18:40	6.582	0.881	276.648
8/23/2019 18:45	6.319	0.826	244.896
8/23/2019 18:50	6.298	0.803	236.966
8/23/2019 18:55	6.178	0.772	221.863
8/23/2019 19:00	6.283	0.817	240.408
8/23/2019 19:05	6.287	0.762	224.342
8/23/2019 19:10	6.483	0.862	264.815
8/23/2019 19:15	6.609	0.846	267.188
8/23/2019 19:20	6.201	0.73	210.849
8/23/2019 19:25	6.624	0.769	243.523
8/23/2019 19:30	6.141	0.753	214.462
8/23/2019 19:35	6.46	0.701	214.262
8/23/2019 19:40	6.11	0.724	204.839
8/23/2019 19:45	6.32	0.806	239.182
8/23/2019 19:50	6.149	0.787	224.488
8/23/2019 19:55	6.527	0.87	270.1
8/23/2019 20:00	6.047	0.763	212.635
8/23/2019 20:05	6.423	0.781	237.074
8/23/2019 20:10	5.963	0.747	204.266
8/23/2019 20:15	6.168	0.827	236.951
8/23/2019 20:20	6.119	0.795	225.367
8/23/2019 20:25	6.355	0.777	232.252
8/23/2019 20:30	6.096	0.787	221.807
8/23/2019 20:35	6.155	0.758	216.615
8/23/2019 20:40	6.199	0.805	232.477

8/23/2019 20:45	6.511	0.881	272.51
8/23/2019 20:50	6.158	0.82	234.554
8/23/2019 20:55	6.323	0.852	252.926
8/23/2019 21:00	6.074	0.75	210.328
8/23/2019 21:05	6.351	0.854	254.928
8/23/2019 21:10	6.168	0.802	229.861
8/23/2019 21:15	6.136	0.807	229.542
8/23/2019 21:20	5.919	0.759	205.162
8/23/2019 21:25	6.229	0.834	242.279
8/23/2019 21:30	6.004	0.748	206.316
8/23/2019 21:35	6.366	0.813	243.482
8/23/2019 21:40	6.041	0.77	214.417
8/23/2019 21:45	6.431	0.81	246.204
8/23/2019 21:50	6.008	0.736	203.226
8/23/2019 21:55	6.42	0.799	242.314
8/23/2019 22:00	5.946	0.717	195.251
8/23/2019 22:05	6.293	0.811	239.139
8/23/2019 22:10	5.911	0.673	181.696
8/23/2019 22:15	6.253	0.823	240.458
8/23/2019 22:20	5.804	0.656	172.672
8/23/2019 22:25	6.26	0.798	233.487
8/23/2019 22:30	5.879	0.643	172.189
8/23/2019 22:35	6.309	0.781	231.119
8/23/2019 22:40	5.879	0.72	192.766
8/23/2019 22:45	6.391	0.797	240.102
8/23/2019 22:50	5.899	0.712	191.481
8/23/2019 22:55	6.306	0.761	225.027
8/23/2019 23:00	5.961	0.699	190.948
8/23/2019 23:05	6.206	0.784	226.581
8/23/2019 23:10	5.909	0.731	197.338
8/23/2019 23:15	6.221	0.733	212.486
8/23/2019 23:20	5.942	0.658	178.948
8/23/2019 23:25	6.02	0.734	203.189
8/23/2019 23:30	6.01	0.788	217.832
8/23/2019 23:35	5.755	0.688	178.726
8/23/2019 23:40	5.971	0.665	182.031
8/23/2019 23:45	5.641	0.65	164.224
8/23/2019 23:50	6.106	0.779	220.065
8/23/2019 23:55	5.789	0.657	172.073
8/24/2019 0:00	6.003	0.749	206.554
8/24/2019 0:05	5.925	0.731	197.957
8/24/2019 0:10	5.721	0.66	170.205
8/24/2019 0:15	6.058	0.753	210.339
8/24/2019 0:20	5.974	0.707	193.829
8/24/2019 0:25	5.622	0.613	154.231
8/24/2019 0:30	6.022	0.779	215.927
8/24/2019 0:35	5.787	0.716	187.591
8/24/2019 0:40	5.601	0.628	157.175
8/24/2019 0:45	6.016	0.698	193.28
8/24/2019 0:50	5.673	0.581	148.006
8/24/2019 0:55	5.729	0.625	161.515
8/24/2019 1:00	5.839	0.699	185.44
8/24/2019 1:05	5.599	0.629	157.26
8/24/2019 1:10	6.047	0.812	226.316
8/24/2019 1:15	5.585	0.568	141.558
8/24/2019 1:20	5.487	0.588	142.759
8/24/2019 1:25	5.811	0.709	186.907
8/24/2019 1:30	5.541	0.609	150.064
8/24/2019 1:35	5.984	0.721	197.862

8/24/2019 1:40	5.604	0.625	156.548
8/24/2019 1:45	5.751	0.674	174.986
8/24/2019 1:50	5.727	0.633	163.483
8/24/2019 1:55	5.504	0.607	148.159
8/24/2019 2:00	5.982	0.755	207.109
8/24/2019 2:05	5.596	0.643	160.514
8/24/2019 2:10	5.428	0.669	159.955
8/24/2019 2:15	5.809	0.717	188.759
8/24/2019 2:20	5.482	0.614	148.905
8/24/2019 2:25	5.378	0.632	149.23
8/24/2019 2:30	5.905	0.702	189.149
8/24/2019 2:35	5.529	0.602	147.891
8/24/2019 2:40	5.427	0.659	157.619
8/24/2019 2:45	5.909	0.768	207.064
8/24/2019 2:50	5.52	0.63	154.292
8/24/2019 2:55	5.939	0.751	203.983
8/24/2019 3:00	5.656	0.673	170.566
8/24/2019 3:05	5.931	0.722	195.692
8/24/2019 3:10	5.62	0.602	151.284
8/24/2019 3:15	5.343	0.582	136.167
8/24/2019 3:20	5.828	0.716	189.318
8/24/2019 3:25	5.465	0.589	142.212
8/24/2019 3:30	5.33	0.601	140.105
8/24/2019 3:35	5.772	0.693	180.78
8/24/2019 3:40	5.494	0.602	146.603
8/24/2019 3:45	5.629	0.664	167.293
8/24/2019 3:50	5.661	0.638	162.042
8/24/2019 3:55	5.433	0.604	144.809
8/24/2019 4:00	5.77	0.737	192.35
8/24/2019 4:05	5.648	0.626	158.318
8/24/2019 4:10	5.441	0.6	144.137
8/24/2019 4:15	5.962	0.751	205.136
8/24/2019 4:20	5.668	0.676	172.022
8/24/2019 4:25	5.441	0.657	157.678
8/24/2019 4:30	5.949	0.773	210.637
8/24/2019 4:35	5.578	0.668	166.184
8/24/2019 4:40	5.437	0.625	149.953
8/24/2019 4:45	5.914	0.81	218.817
8/24/2019 4:50	5.562	0.621	153.7
8/24/2019 4:55	5.423	0.612	146.192
8/24/2019 5:00	5.882	0.746	200.011
8/24/2019 5:05	5.539	0.612	150.634
8/24/2019 5:10	5.42	0.621	148.348
8/24/2019 5:15	5.877	0.747	200.01
8/24/2019 5:20	5.552	0.62	153.25
8/24/2019 5:25	5.424	0.594	142.064
8/24/2019 5:30	5.924	0.703	190.348
8/24/2019 5:35	5.57	0.654	162.365
8/24/2019 5:40	5.491	0.626	152.162
8/24/2019 5:45	5.99	0.713	196.151
8/24/2019 5:50	5.694	0.664	169.975
8/24/2019 5:55	5.516	0.621	151.916
8/24/2019 6:00	6.058	0.746	208.598
8/24/2019 6:05	5.657	0.662	167.807
8/24/2019 6:10	5.486	0.618	150.076
8/24/2019 6:15	5.877	0.665	177.993
8/24/2019 6:20	5.561	0.631	156.206
8/24/2019 6:25	5.543	0.624	153.697
8/24/2019 6:30	5.863	0.649	173.221

8/24/2019 6:35	5.621	0.627	157.62
8/24/2019 6:40	6.081	0.786	220.801
8/24/2019 6:45	5.792	0.684	179.344
8/24/2019 6:50	5.711	0.645	165.831
8/24/2019 6:55	5.85	0.642	170.79
8/24/2019 7:00	5.603	0.668	167.229
8/24/2019 7:05	6.102	0.787	222.093
8/24/2019 7:10	5.704	0.676	173.594
8/24/2019 7:15	5.595	0.611	152.595
8/24/2019 7:20	5.996	0.723	199.021
8/24/2019 7:25	5.644	0.611	154.535
8/24/2019 7:30	6.032	0.74	205.487
8/24/2019 7:35	5.821	0.721	190.349
8/24/2019 7:40	5.591	0.649	161.852
8/24/2019 7:45	5.995	0.724	199.417
8/24/2019 7:50	5.672	0.628	159.785
8/24/2019 7:55	6.142	0.73	208.086
8/24/2019 8:00	5.798	0.681	178.839
8/24/2019 8:05	6.159	0.843	241.122
8/24/2019 8:10	5.909	0.69	186.241
8/24/2019 8:15	5.75	0.67	173.881
8/24/2019 8:20	6.016	0.696	192.504
8/24/2019 8:25	5.752	0.649	168.442
8/24/2019 8:30	6.208	0.8	231.278
8/24/2019 8:35	5.907	0.74	199.548
8/24/2019 8:40	6.05	0.774	215.919
8/24/2019 8:45	6.197	0.777	224.217
8/24/2019 8:50	6.03	0.747	207.361
8/24/2019 8:55	6.261	0.795	232.577
8/24/2019 9:00	5.816	0.69	182.034
8/24/2019 9:05	6.132	0.836	237.756
8/24/2019 9:10	5.794	0.661	173.565
8/24/2019 9:15	6.23	0.832	241.749
8/24/2019 9:20	5.792	0.68	178.355
8/24/2019 9:25	6.294	0.778	229.506
8/24/2019 9:30	6.005	0.741	204.534
8/24/2019 9:35	6.512	0.778	240.516
8/24/2019 9:40	6.007	0.736	203.166
8/24/2019 9:45	6.366	0.859	257.225
8/24/2019 9:50	6.113	0.77	217.933
8/24/2019 9:55	6.213	0.799	231.302
8/24/2019 10:00	6.295	0.762	224.632
8/24/2019 10:05	6.005	0.761	209.913
8/24/2019 10:10	6.292	0.827	243.672
8/24/2019 10:15	5.731	0.714	184.396
8/24/2019 10:20	6.193	0.791	227.838
8/24/2019 10:25	5.863	0.712	189.882
8/24/2019 10:30	6.192	0.776	223.506
8/24/2019 10:35	5.771	0.738	192.493
8/24/2019 10:40	6.058	0.78	217.972
8/24/2019 10:45	6.116	0.777	220.134
8/24/2019 10:50	5.897	0.678	182.507
8/24/2019 10:55	6.132	0.761	216.236
8/24/2019 11:00	5.996	0.774	213.254
8/24/2019 11:05	6.24	0.815	237.488
8/24/2019 11:10	5.775	0.692	180.827
8/24/2019 11:15	6.311	0.773	228.833
8/24/2019 11:20	6.09	0.747	210.217
8/24/2019 11:25	6.395	0.86	259.275

8/24/2019 11:30	6.029	0.747	207.315
8/24/2019 11:35	6.349	0.784	233.881
8/24/2019 11:40	5.856	0.717	191.055
8/24/2019 11:45	6.116	0.789	223.529
8/24/2019 11:50	6.369	0.811	243.131
8/24/2019 11:55	5.936	0.77	208.96
8/24/2019 12:00	6.293	0.815	240.186
8/24/2019 12:05	5.951	0.783	213.382
8/24/2019 12:10	6.387	0.876	263.599
8/24/2019 12:15	5.923	0.692	187.21
8/24/2019 12:20	6.07	0.708	198.455
8/24/2019 12:25	6.079	0.798	224.176
8/24/2019 12:30	6.002	0.707	195.03
8/24/2019 12:35	6.131	0.738	209.667
8/24/2019 12:40	6	0.719	198.187
8/24/2019 12:45	5.865	0.776	207.127
8/24/2019 12:50	6.034	0.741	205.895
8/24/2019 12:55	5.779	0.729	190.478
8/24/2019 13:00	6.242	0.749	218.331
8/24/2019 13:05	5.867	0.71	189.698
8/24/2019 13:10	6.093	0.717	201.867
8/24/2019 13:15	5.621	0.625	157.172
8/24/2019 13:20	6.055	0.757	211.503
8/24/2019 13:25	5.673	0.605	153.993
8/24/2019 13:30	6.194	0.804	231.842
8/24/2019 13:35	5.757	0.627	162.973
8/24/2019 13:40	5.944	0.747	203.133
8/24/2019 13:45	5.748	0.653	169.453
8/24/2019 13:50	6.037	0.722	200.88
8/24/2019 13:55	5.678	0.656	167.329
8/24/2019 14:00	6.016	0.725	200.735
8/24/2019 14:05	5.653	0.686	173.954
8/24/2019 14:10	5.979	0.709	194.6
8/24/2019 14:15	5.657	0.615	156.064
8/24/2019 14:20	6.071	0.756	212.01
8/24/2019 14:25	5.68	0.657	167.532
8/24/2019 14:30	5.974	0.712	195.213
8/24/2019 14:35	5.565	0.566	140.295
8/24/2019 14:40	6.02	0.729	201.831
8/24/2019 14:45	5.649	0.576	145.686
8/24/2019 14:50	5.756	0.689	179.109
8/24/2019 14:55	5.883	0.707	189.523
8/24/2019 15:00	5.654	0.66	167.366
8/24/2019 15:05	6.09	0.717	201.781
8/24/2019 15:10	5.753	0.681	176.889
8/24/2019 15:15	6.209	0.786	227.288
8/24/2019 15:20	5.641	0.632	159.732
8/24/2019 15:25	6.132	0.766	217.797
8/24/2019 15:30	5.702	0.63	161.662
8/24/2019 15:35	6.102	0.716	202.072
8/24/2019 15:40	5.631	0.652	164.406
8/24/2019 15:45	5.99	0.739	203.196
8/24/2019 15:50	5.778	0.647	169.101
8/24/2019 15:55	5.818	0.722	190.449
8/24/2019 16:00	5.845	0.624	165.887
8/24/2019 16:05	5.618	0.648	162.687
8/24/2019 16:10	6.085	0.743	208.869
8/24/2019 16:15	5.607	0.675	169.055
8/24/2019 16:20	5.966	0.714	195.36

8/24/2019 16:25	5.88	0.71	190.337
8/24/2019 16:30	6.338	0.843	251.165
8/24/2019 16:35	5.934	0.686	186.279
8/24/2019 16:40	6.187	0.75	215.773
8/24/2019 16:45	5.783	0.629	164.545
8/24/2019 16:50	5.947	0.705	192.042
8/24/2019 16:55	5.899	0.663	178.559
8/24/2019 17:00	5.717	0.63	162.079
8/24/2019 17:05	6.032	0.684	189.833
8/24/2019 17:10	5.692	0.629	161.026
8/24/2019 17:15	6.068	0.698	195.526
8/24/2019 17:20	5.664	0.64	162.745
8/24/2019 17:25	6.143	0.762	217.111
8/24/2019 17:30	5.67	0.642	163.408
8/24/2019 17:35	5.926	0.641	173.662
8/24/2019 17:40	5.813	0.626	165.107
8/24/2019 17:45	6.005	0.748	206.542
8/24/2019 17:50	5.776	0.625	163.173
8/24/2019 17:55	5.815	0.614	161.853
8/24/2019 18:00	5.809	0.639	168.367
8/24/2019 18:05	5.585	0.616	153.38
8/24/2019 18:10	5.823	0.721	190.577
8/24/2019 18:15	5.572	0.589	146.325
8/24/2019 18:20	5.967	0.73	199.534
8/24/2019 18:25	5.625	0.59	148.41
8/24/2019 18:30	6.14	0.752	214.017
8/24/2019 18:35	5.777	0.604	157.875
8/24/2019 18:40	5.966	0.699	191.215
8/24/2019 18:45	5.937	0.662	179.721
8/24/2019 18:50	5.672	0.589	150.019
8/24/2019 18:55	6.028	0.651	180.531
8/24/2019 19:00	5.66	0.591	150.024
8/24/2019 19:05	6.065	0.728	203.658
8/24/2019 19:10	5.735	0.662	171.116
8/24/2019 19:15	6.149	0.718	204.809
8/24/2019 19:20	5.728	0.591	152.446
8/24/2019 19:25	6.145	0.753	214.562
8/24/2019 19:30	5.817	0.646	170.399
8/24/2019 19:35	5.894	0.653	175.525
8/24/2019 19:40	5.92	0.656	177.521
8/24/2019 19:45	5.733	0.65	167.914
8/24/2019 19:50	6.123	0.733	207.779
8/24/2019 19:55	5.769	0.651	169.897
8/24/2019 20:00	6.185	0.782	225.056
8/24/2019 20:05	5.724	0.606	156.304
8/24/2019 20:10	6.136	0.736	209.507
8/24/2019 20:15	5.746	0.648	168.072
8/24/2019 20:20	6.224	0.788	228.67
8/24/2019 20:25	5.955	0.703	191.814
8/24/2019 20:30	6.268	0.81	237.376
8/24/2019 20:35	5.987	0.729	200.385
8/24/2019 20:40	5.842	0.629	167.047
8/24/2019 20:45	6.06	0.699	195.409
8/24/2019 20:50	5.761	0.644	167.573
8/24/2019 20:55	6.014	0.663	183.292
8/24/2019 21:00	5.623	0.664	166.873
8/24/2019 21:05	6.036	0.763	211.991
8/24/2019 21:10	5.55	0.652	161.071
8/24/2019 21:15	6.044	0.694	193.342

8/24/2019 21:20	5.687	0.648	165.52
8/24/2019 21:25	5.734	0.624	161.27
8/24/2019 21:30	5.786	0.661	173.205
8/24/2019 21:35	5.581	0.63	156.757
8/24/2019 21:40	6.025	0.701	194.311
8/24/2019 21:45	5.61	0.632	158.456
8/24/2019 21:50	5.997	0.709	195.402
8/24/2019 21:55	5.567	0.661	163.822
8/24/2019 22:00	5.791	0.667	174.969
8/24/2019 22:05	5.79	0.633	165.873
8/24/2019 22:10	5.552	0.645	159.338
8/24/2019 22:15	5.906	0.685	184.784
8/24/2019 22:20	5.545	0.615	151.513
8/24/2019 22:25	6.058	0.717	200.35
8/24/2019 22:30	5.732	0.635	164.127
8/24/2019 22:35	5.792	0.649	170.232
8/24/2019 22:40	5.84	0.637	169.134
8/24/2019 22:45	5.605	0.656	164.195
8/24/2019 22:50	6.015	0.708	195.918
8/24/2019 22:55	5.551	0.538	132.895
8/24/2019 23:00	5.738	0.669	173.155
8/24/2019 23:05	5.838	0.625	165.871
8/24/2019 23:10	5.585	0.674	167.908
8/24/2019 23:15	5.956	0.754	205.707
8/24/2019 23:20	5.603	0.619	154.809
8/24/2019 23:25	5.943	0.69	187.784
8/24/2019 23:30	5.698	0.591	151.339
8/24/2019 23:35	5.497	0.623	151.746
8/24/2019 23:40	5.993	0.678	186.572
8/24/2019 23:45	5.648	0.671	169.875
8/24/2019 23:50	5.525	0.684	167.742
8/24/2019 23:55	5.896	0.688	185.1
8/25/2019 0:00	5.504	0.589	143.792
8/25/2019 0:05	5.299	0.628	145.25
8/25/2019 0:10	5.758	0.681	176.987
8/25/2019 0:15	5.588	0.597	148.902
8/25/2019 0:20	5.335	0.589	137.37
8/25/2019 0:25	5.767	0.64	166.941
8/25/2019 0:30	5.482	0.677	164.192
8/25/2019 0:35	5.363	0.627	147.49
8/25/2019 0:40	5.824	0.724	191.394
8/25/2019 0:45	5.439	0.674	161.782
8/25/2019 0:50	5.528	0.605	148.576
8/25/2019 0:55	5.609	0.583	146.226
8/25/2019 1:00	5.357	0.62	145.525
8/25/2019 1:05	5.816	0.641	169.019
8/25/2019 1:10	5.5	0.659	160.588
8/25/2019 1:15	5.388	0.626	148.198
8/25/2019 1:20	5.783	0.697	182.423
8/25/2019 1:25	5.427	0.621	148.586
8/25/2019 1:30	5.457	0.628	151.429
8/25/2019 1:35	5.537	0.577	141.933
8/25/2019 1:40	5.214	0.594	134.211
8/25/2019 1:45	5.627	0.655	164.825
8/25/2019 1:50	5.259	0.558	127.57
8/25/2019 1:55	5.102	0.583	127.709
8/25/2019 2:00	5.601	0.617	154.342
8/25/2019 2:05	5.231	0.556	126.156
8/25/2019 2:10	5.111	0.527	115.694

8/25/2019 2:15	5.557	0.656	162.272
8/25/2019 2:20	5.324	0.62	144.224
8/25/2019 2:25	5.133	0.534	118.021
8/25/2019 2:30	5.043	0.594	128.039
8/25/2019 2:35	5.496	0.606	147.645
8/25/2019 2:40	5.198	0.584	131.443
8/25/2019 2:45	5.087	0.55	120.051
8/25/2019 2:50	5.475	0.618	149.6
8/25/2019 2:55	5.157	0.591	131.41
8/25/2019 3:00	5.067	0.601	130.476
8/25/2019 3:05	5.583	0.653	162.639
8/25/2019 3:10	5.262	0.59	134.997
8/25/2019 3:15	5.083	0.542	118.169
8/25/2019 3:20	5.099	0.621	135.863
8/25/2019 3:25	5.55	0.613	151.343
8/25/2019 3:30	5.226	0.598	135.526
8/25/2019 3:35	5.068	0.576	125.039
8/25/2019 3:40	5.587	0.629	156.705
8/25/2019 3:45	5.243	0.59	134.25
8/25/2019 3:50	5.08	0.564	122.738
8/25/2019 3:55	5.358	0.618	145.182
8/25/2019 4:00	5.351	0.634	148.645
8/25/2019 4:05	5.146	0.598	132.601
8/25/2019 4:10	5.08	0.543	118.291
8/25/2019 4:15	5.586	0.614	152.88
8/25/2019 4:20	5.222	0.624	141.326
8/25/2019 4:25	5.121	0.581	127.965
8/25/2019 4:30	5.27	0.593	135.947
8/25/2019 4:35	5.363	0.594	139.707
8/25/2019 4:40	5.137	0.601	132.891
8/25/2019 4:45	5.077	0.566	123.137
8/25/2019 4:50	5.521	0.659	161.605
8/25/2019 4:55	5.253	0.582	133
8/25/2019 5:00	5.086	0.584	127.248
8/25/2019 5:05	5.047	0.557	120.111
8/25/2019 5:10	5.487	0.635	154.339
8/25/2019 5:15	5.16	0.58	129.093
8/25/2019 5:20	5.043	0.564	121.579
8/25/2019 5:25	5.018	0.581	124.255
8/25/2019 5:30	5.437	0.673	161.447
8/25/2019 5:35	5.265	0.58	132.776
8/25/2019 5:40	5.211	0.575	129.707
8/25/2019 5:45	5.411	0.615	146.446
8/25/2019 5:50	5.435	0.617	147.859
8/25/2019 5:55	5.233	0.601	136.435
8/25/2019 6:00	5.175	0.613	136.959
8/25/2019 6:05	5.684	0.616	157.346
8/25/2019 6:10	5.352	0.607	142.421
8/25/2019 6:15	5.223	0.629	142.586
8/25/2019 6:20	5.666	0.631	160.345
8/25/2019 6:25	5.301	0.613	141.706
8/25/2019 6:30	5.143	0.595	131.878
8/25/2019 6:35	5.127	0.588	129.717
8/25/2019 6:40	5.632	0.668	168.512
8/25/2019 6:45	5.301	0.594	137.442
8/25/2019 6:50	5.177	0.578	129.352
8/25/2019 6:55	5.746	0.68	176.438
8/25/2019 7:00	5.388	0.633	149.883
8/25/2019 7:05	5.252	0.583	133.011

8/25/2019 7:10	5.786	0.733	192.052
8/25/2019 7:15	5.483	0.616	149.572
8/25/2019 7:20	5.299	0.613	141.666
8/25/2019 7:25	5.762	0.661	172.14
8/25/2019 7:30	5.401	0.639	151.744
8/25/2019 7:35	5.793	0.691	181.314
8/25/2019 7:40	5.589	0.619	154.25
8/25/2019 7:45	5.327	0.611	142.342
8/25/2019 7:50	5.782	0.648	169.442
8/25/2019 7:55	5.433	0.617	147.78
8/25/2019 8:00	5.851	0.645	171.718
8/25/2019 8:05	5.499	0.577	140.517
8/25/2019 8:10	5.592	0.657	163.996
8/25/2019 8:15	5.714	0.672	172.978
8/25/2019 8:20	5.43	0.684	163.597
8/25/2019 8:25	5.883	0.722	193.478
8/25/2019 8:30	5.529	0.622	152.804
8/25/2019 8:35	6.008	0.686	189.573
8/25/2019 8:40	5.691	0.734	187.789
8/25/2019 8:45	5.845	0.747	198.309
8/25/2019 8:50	5.838	0.721	191.174
8/25/2019 8:55	5.707	0.627	161.176
8/25/2019 9:00	5.924	0.673	182.131
8/25/2019 9:05	5.836	0.707	187.46
8/25/2019 9:10	6.19	0.772	222.274
8/25/2019 9:15	6.101	0.719	202.81
8/25/2019 9:20	6.032	0.703	195.299
8/25/2019 9:25	5.977	0.721	197.549
8/25/2019 9:30	6.114	0.777	219.977
8/25/2019 9:35	5.908	0.778	209.723
8/25/2019 9:40	6.148	0.719	205.257
8/25/2019 9:45	5.853	0.666	177.198
8/25/2019 9:50	6.015	0.699	193.261
8/25/2019 9:55	5.707	0.654	167.844
8/25/2019 10:00	6.023	0.699	193.69
8/25/2019 10:05	5.689	0.61	155.95
8/25/2019 10:10	6.047	0.709	197.71
8/25/2019 10:15	5.596	0.613	153.125
8/25/2019 10:20	5.969	0.685	187.382
8/25/2019 10:25	5.632	0.591	148.947
8/25/2019 10:30	6.08	0.647	181.646
8/25/2019 10:35	5.752	0.632	164.19
8/25/2019 10:40	6.03	0.747	207.446
8/25/2019 10:45	5.766	0.668	174.031
8/25/2019 10:50	6.008	0.686	189.352
8/25/2019 10:55	6.043	0.739	205.67
8/25/2019 11:00	5.848	0.707	188.005
8/25/2019 11:05	6.112	0.726	205.397
8/25/2019 11:10	5.76	0.647	168.411
8/25/2019 11:15	6.073	0.698	195.838
8/25/2019 11:20	5.872	0.622	166.33
8/25/2019 11:25	5.652	0.71	179.865
8/25/2019 11:30	5.884	0.704	188.751
8/25/2019 11:35	5.694	0.617	157.88
8/25/2019 11:40	5.909	0.671	181.092
8/25/2019 11:45	5.905	0.676	182.171
8/25/2019 11:50	5.861	0.582	155.277
8/25/2019 11:55	6.13	0.752	213.608
8/25/2019 12:00	5.894	0.673	180.979

8/25/2019 12:05	6.318	0.788	233.491
8/25/2019 12:10	5.851	0.624	166.003
8/25/2019 12:15	6.279	0.752	220.913
8/25/2019 12:20	6.094	0.745	210.034
8/25/2019 12:25	6.092	0.678	190.901
8/25/2019 12:30	6.259	0.699	204.483
8/25/2019 12:35	5.931	0.743	201.412
8/25/2019 12:40	6.537	0.76	236.227
8/25/2019 12:45	6.082	0.69	193.846
8/25/2019 12:50	6.392	0.824	248.418
8/25/2019 12:55	6.104	0.749	211.667
8/25/2019 13:00	6.453	0.722	220.527
8/25/2019 13:05	6.043	0.706	196.547
8/25/2019 13:10	6.312	0.754	223.222
8/25/2019 13:15	6.042	0.716	199.384
8/25/2019 13:20	6.656	0.816	260.061
8/25/2019 13:25	6.14	0.687	195.641
8/25/2019 13:30	6.288	0.694	204.229
8/25/2019 13:35	5.921	0.726	196.37
8/25/2019 13:40	6.297	0.785	231.475
8/25/2019 13:45	5.95	0.678	184.682
8/25/2019 13:50	6.263	0.784	229.444
8/25/2019 13:55	6.228	0.725	210.652
8/25/2019 14:00	5.913	0.682	184.133
8/25/2019 14:05	6.168	0.704	201.751
8/25/2019 14:10	5.807	0.717	188.593
8/25/2019 14:15	6.267	0.775	226.988
8/25/2019 14:20	5.879	0.702	188.118
8/25/2019 14:25	5.939	0.648	176.167
8/25/2019 14:30	5.93	0.689	186.75
8/25/2019 14:35	5.663	0.661	168.018
8/25/2019 14:40	5.941	0.669	182.02
8/25/2019 14:45	5.787	0.62	162.35
8/25/2019 14:50	6.007	0.669	184.778
8/25/2019 14:55	5.638	0.667	168.377
8/25/2019 15:00	5.925	0.701	189.835
8/25/2019 15:05	5.598	0.589	147.227
8/25/2019 15:10	5.775	0.659	172.088
8/25/2019 15:15	5.427	0.606	144.905
8/25/2019 15:20	5.918	0.746	201.637
8/25/2019 15:25	5.533	0.646	158.844
8/25/2019 15:30	5.977	0.716	196.203
8/25/2019 15:35	5.647	0.701	177.312
8/25/2019 15:40	6.137	0.778	221.347
8/25/2019 15:45	5.625	0.642	161.424
8/25/2019 15:50	6.011	0.667	184.236
8/25/2019 15:55	5.642	0.628	158.768
8/25/2019 16:00	5.635	0.561	141.627
8/25/2019 16:05	5.698	0.599	153.59
8/25/2019 16:10	5.393	0.669	158.693
8/25/2019 16:15	5.814	0.622	163.926
8/25/2019 16:20	5.569	0.622	154.424
8/25/2019 16:25	5.365	0.612	144.023
8/25/2019 16:30	5.772	0.605	157.998
8/25/2019 16:35	5.467	0.623	150.524
8/25/2019 16:40	5.864	0.693	185.021
8/25/2019 16:45	5.642	0.626	158.162
8/25/2019 16:50	5.409	0.58	138.136
8/25/2019 16:55	5.731	0.637	164.643

8/25/2019 17:00	5.452	0.631	151.998
8/25/2019 17:05	5.732	0.686	177.228
8/25/2019 17:10	5.365	0.606	142.692
8/25/2019 17:15	5.826	0.677	179.069
8/25/2019 17:20	5.466	0.571	137.924
8/25/2019 17:25	5.614	0.696	174.639
8/25/2019 17:30	5.704	0.615	157.783
8/25/2019 17:35	5.473	0.599	145.051
8/25/2019 17:40	5.911	0.638	172.193
8/25/2019 17:45	5.578	0.637	158.307
8/25/2019 17:50	5.938	0.633	172.044
8/25/2019 17:55	5.707	0.665	170.823
8/25/2019 18:00	6.108	0.761	215.215
8/25/2019 18:05	5.688	0.615	157.33
8/25/2019 18:10	5.497	0.657	160.082
8/25/2019 18:15	5.989	0.633	174.013
8/25/2019 18:20	5.58	0.605	150.576
8/25/2019 18:25	6.041	0.657	182.92
8/25/2019 18:30	5.773	0.669	174.649
8/25/2019 18:35	6.226	0.782	226.969
8/25/2019 18:40	5.758	0.666	173.313
8/25/2019 18:45	5.879	0.665	178.129
8/25/2019 18:50	5.759	0.668	173.89
8/25/2019 18:55	5.371	0.564	132.951
8/25/2019 19:00	5.393	0.592	140.337
8/25/2019 19:05	5.649	0.616	155.922
8/25/2019 19:10	5.523	0.631	154.668
8/25/2019 19:15	5.913	0.65	175.465
8/25/2019 19:20	5.75	0.634	164.579
8/25/2019 19:25	5.964	0.658	179.949
8/25/2019 19:30	5.649	0.704	178.318
8/25/2019 19:35	6.06	0.669	187.03
8/25/2019 19:40	5.714	0.642	165.121
8/25/2019 19:45	5.974	0.672	184.017
8/25/2019 19:50	5.662	0.581	147.439
8/25/2019 19:55	6.168	0.707	202.715
8/25/2019 20:00	5.799	0.69	181.351
8/25/2019 20:05	6.08	0.709	199.02
8/25/2019 20:10	5.86	0.663	176.707
8/25/2019 20:15	6.185	0.686	197.279
8/25/2019 20:20	5.655	0.59	149.46
8/25/2019 20:25	5.988	0.654	179.684
8/25/2019 20:30	5.835	0.656	173.8
8/25/2019 20:35	5.921	0.725	196.232
8/25/2019 20:40	5.846	0.638	169.492
8/25/2019 20:45	5.701	0.624	160.062
8/25/2019 20:50	5.986	0.64	175.968
8/25/2019 20:55	5.683	0.606	154.594
8/25/2019 21:00	6.062	0.635	177.621
8/25/2019 21:05	5.67	0.64	162.994
8/25/2019 21:10	6.18	0.784	225.447
8/25/2019 21:15	5.776	0.658	171.854
8/25/2019 21:20	5.551	0.632	156.013
8/25/2019 21:25	5.881	0.675	180.889
8/25/2019 21:30	5.529	0.644	158.246
8/25/2019 21:35	5.828	0.636	168.419
8/25/2019 21:40	5.659	0.621	157.569
8/25/2019 21:45	5.469	0.576	139.194
8/25/2019 21:50	5.812	0.648	170.647

8/25/2019 21:55	5.4	0.532	126.41
8/25/2019 22:00	5.817	0.655	172.773
8/25/2019 22:05	5.516	0.563	137.725
8/25/2019 22:10	5.342	0.602	140.792
8/25/2019 22:15	5.751	0.582	151.169
8/25/2019 22:20	5.458	0.601	144.988
8/25/2019 22:25	5.986	0.646	177.355
8/25/2019 22:30	5.629	0.652	164.225
8/25/2019 22:35	5.436	0.61	146.288
8/25/2019 22:40	5.801	0.593	155.833
8/25/2019 22:45	5.394	0.559	132.6
8/25/2019 22:50	5.538	0.603	148.502
8/25/2019 22:55	5.588	0.63	157.11
8/25/2019 23:00	5.372	0.572	134.873
8/25/2019 23:05	5.738	0.602	155.889
8/25/2019 23:10	5.56	0.599	148.173
8/25/2019 23:15	5.32	0.578	134.417
8/25/2019 23:20	5.739	0.574	148.722
8/25/2019 23:25	5.406	0.546	129.769
8/25/2019 23:30	5.295	0.566	130.593
8/25/2019 23:35	5.578	0.571	142.013
8/25/2019 23:40	5.247	0.575	131.167
8/25/2019 23:45	5.605	0.613	153.441
8/25/2019 23:50	5.466	0.597	144.141
8/25/2019 23:55	5.21	0.572	129.009
8/26/2019 0:00	5.479	0.583	141.43
8/26/2019 0:05	5.43	0.595	142.355
8/26/2019 0:10	5.204	0.578	130.196
8/26/2019 0:15	5.592	0.611	152.468
8/26/2019 0:20	5.351	0.58	135.872
8/26/2019 0:25	5.117	0.529	116.294
8/26/2019 0:30	5.377	0.544	128.519
8/26/2019 0:35	5.422	0.58	138.475
8/26/2019 0:40	5.224	0.526	119.117
8/26/2019 0:45	5.147	0.512	113.524
8/26/2019 0:50	5.343	0.553	129.324
8/26/2019 0:55	5.426	0.541	129.277
8/26/2019 1:00	5.183	0.497	111.303
8/26/2019 1:05	5.132	0.499	110.284
8/26/2019 1:10	5.389	0.564	133.459
8/26/2019 1:15	5.444	0.623	149.6
8/26/2019 1:20	5.128	0.51	112.627
8/26/2019 1:25	4.974	0.469	99.08
8/26/2019 1:30	5.145	0.552	122.33
8/26/2019 1:35	5.316	0.573	133.053
8/26/2019 1:40	5.017	0.465	99.532
8/26/2019 1:45	4.972	0.486	102.533
8/26/2019 1:50	4.947	0.472	98.834
8/26/2019 1:55	5.306	0.557	128.89
8/26/2019 2:00	5.051	0.491	106.083
8/26/2019 2:05	5.028	0.468	100.506
8/26/2019 2:10	4.96	0.47	98.807
8/26/2019 2:15	5.362	0.548	128.86
8/26/2019 2:20	5.091	0.539	117.778
8/26/2019 2:25	4.992	0.475	100.824
8/26/2019 2:30	4.985	0.479	101.429
8/26/2019 2:35	5.428	0.573	137.162
8/26/2019 2:40	5.072	0.566	122.884
8/26/2019 2:45	4.955	0.49	103.035

8/26/2019 2:50	4.892	0.446	92.097
8/26/2019 2:55	5.38	0.54	127.551
8/26/2019 3:00	5.055	0.53	114.49
8/26/2019 3:05	4.995	0.468	99.469
8/26/2019 3:10	4.934	0.491	102.599
8/26/2019 3:15	5.402	0.563	133.758
8/26/2019 3:20	5.079	0.504	109.707
8/26/2019 3:25	4.928	0.483	100.653
8/26/2019 3:30	4.897	0.464	95.956
8/26/2019 3:35	5.416	0.566	134.894
8/26/2019 3:40	5.106	0.528	115.673
8/26/2019 3:45	4.912	0.45	93.452
8/26/2019 3:50	4.87	0.481	98.507
8/26/2019 3:55	5.363	0.567	133.292
8/26/2019 4:00	5.074	0.546	118.721
8/26/2019 4:05	4.937	0.495	103.369
8/26/2019 4:10	4.89	0.456	93.924
8/26/2019 4:15	5.351	0.56	131.232
8/26/2019 4:20	5.161	0.554	123.424
8/26/2019 4:25	4.983	0.497	105.32
8/26/2019 4:30	4.931	0.482	100.547
8/26/2019 4:35	5.293	0.53	122.344
8/26/2019 4:40	5.001	0.535	113.952
8/26/2019 4:45	4.91	0.514	106.476
8/26/2019 4:50	4.912	0.476	98.716
8/26/2019 4:55	5.3	0.559	129.145
8/26/2019 5:00	5.029	0.503	107.861
8/26/2019 5:05	4.943	0.477	99.782
8/26/2019 5:10	5.5	0.608	148.266
8/26/2019 5:15	5.192	0.557	125.126
8/26/2019 5:20	4.998	0.527	112.041
8/26/2019 5:25	4.946	0.527	110.364
8/26/2019 5:30	5.435	0.571	136.816
8/26/2019 5:35	5.192	0.54	121.287
8/26/2019 5:40	5.007	0.478	101.86
8/26/2019 5:45	4.989	0.492	104.291
8/26/2019 5:50	5.504	0.591	144.31
8/26/2019 5:55	5.213	0.555	125.467
8/26/2019 6:00	5.061	0.541	117.132
8/26/2019 6:05	5.361	0.538	126.344
8/26/2019 6:10	5.374	0.546	128.903
8/26/2019 6:15	5.135	0.572	126.486
8/26/2019 6:20	5.171	0.529	118.142
8/26/2019 6:25	5.462	0.544	131.389
8/26/2019 6:30	5.261	0.567	129.753
8/26/2019 6:35	5.724	0.632	162.977
8/26/2019 6:40	5.531	0.604	148.519
8/26/2019 6:45	5.41	0.6	142.78
8/26/2019 6:50	5.809	0.645	169.893
8/26/2019 6:55	5.34	0.565	132.167
8/26/2019 7:00	5.682	0.616	157.279
8/26/2019 7:05	5.399	0.559	132.694
8/26/2019 7:10	5.59	0.593	147.927
8/26/2019 7:15	5.571	0.646	160.247
8/26/2019 7:20	5.385	0.562	133.023
8/26/2019 7:25	5.6	0.564	141.016
8/26/2019 7:30	5.422	0.587	140.288
8/26/2019 7:35	6.005	0.699	192.945
8/26/2019 7:40	5.629	0.646	162.787

8/26/2019 7:45	5.85	0.62	164.831
8/26/2019 7:50	5.467	0.582	140.594
8/26/2019 7:55	5.68	0.592	151.118
8/26/2019 8:00	5.515	0.553	135.364
8/26/2019 8:05	5.756	0.656	170.655
8/26/2019 8:10	5.555	0.586	144.777
8/26/2019 8:15	5.85	0.64	170.293
8/26/2019 8:20	5.567	0.624	154.793
8/26/2019 8:25	5.395	0.58	137.597
8/26/2019 8:30	5.635	0.588	148.43
8/26/2019 8:35	5.334	0.531	124.008
8/26/2019 8:40	5.686	0.592	151.22
8/26/2019 8:45	5.306	0.543	125.87
8/26/2019 8:50	5.177	0.586	130.966
8/26/2019 8:55	5.689	0.561	143.537
8/26/2019 9:00	5.384	0.584	138.033
8/26/2019 9:05	5.561	0.578	143.21
8/26/2019 9:10	5.637	0.648	163.558
8/26/2019 9:15	5.352	0.593	139.08
8/26/2019 9:20	5.897	0.64	172.157
8/26/2019 9:25	5.57	0.617	153.106
8/26/2019 9:30	5.463	0.582	140.548
8/26/2019 9:35	5.979	0.68	186.485
8/26/2019 9:40	5.51	0.559	136.689
8/26/2019 9:45	5.17	0.519	115.84
8/26/2019 9:50	5.651	0.561	142.141
8/26/2019 9:55	5.401	0.555	131.839
8/26/2019 10:00	5.831	0.594	157.408
8/26/2019 10:05	5.527	0.579	142.025
8/26/2019 10:10	5.614	0.575	144.194
8/26/2019 10:15	5.737	0.583	150.914
8/26/2019 10:20	5.506	0.606	147.937
8/26/2019 10:25	6.005	0.649	179.115
8/26/2019 10:30	5.766	0.655	170.649
8/26/2019 10:35	5.522	0.625	153.227
8/26/2019 10:40	5.896	0.629	169.114
8/26/2019 10:45	5.562	0.628	155.483
8/26/2019 10:50	6.084	0.605	170.021
8/26/2019 10:55	5.707	0.695	178.618
8/26/2019 11:00	5.746	0.618	160.311
8/26/2019 11:05	5.962	0.603	164.669
8/26/2019 11:10	5.574	0.646	160.447
8/26/2019 11:15	5.612	0.565	141.749
8/26/2019 11:20	5.92	0.692	187.131
8/26/2019 11:25	5.625	0.608	153.074
8/26/2019 11:30	5.949	0.661	179.928
8/26/2019 11:35	5.528	0.594	145.915
8/26/2019 11:40	5.893	0.59	158.623
8/26/2019 11:45	5.647	0.602	152.382
8/26/2019 11:50	5.349	0.562	131.7
8/26/2019 11:55	5.799	0.677	177.873
8/26/2019 12:00	5.481	0.597	144.744
8/26/2019 12:05	5.224	0.524	118.699
8/26/2019 12:10	5.789	0.632	165.644
8/26/2019 12:15	5.516	0.613	150.048
8/26/2019 12:20	5.327	0.612	142.646
8/26/2019 12:25	5.768	0.589	153.532
8/26/2019 12:30	5.465	0.566	136.75
8/26/2019 12:35	5.288	0.548	126.398

8/26/2019 12:40	5.787	0.644	168.713
8/26/2019 12:45	5.482	0.563	136.47
8/26/2019 12:50	5.249	0.513	116.928
8/26/2019 12:55	5.837	0.593	157.363
8/26/2019 13:00	5.539	0.634	156.103
8/26/2019 13:05	5.702	0.605	155.174
8/26/2019 13:10	5.691	0.646	165.307
8/26/2019 13:15	5.432	0.577	138.212
8/26/2019 13:20	5.861	0.635	169.287
8/26/2019 13:25	5.594	0.606	151.283
8/26/2019 13:30	5.465	0.598	144.351
8/26/2019 13:35	5.847	0.627	166.634
8/26/2019 13:40	5.471	0.567	137.091
8/26/2019 13:45	5.455	0.613	147.675
8/26/2019 13:50	5.752	0.626	162.471
8/26/2019 13:55	5.39	0.561	132.934
8/26/2019 14:00	5.259	0.515	117.703
8/26/2019 14:05	5.789	0.633	165.907
8/26/2019 14:10	5.463	0.574	138.606
8/26/2019 14:15	5.454	0.545	131.339
8/26/2019 14:20	5.601	0.557	139.382
8/26/2019 14:25	5.357	0.564	132.527
8/26/2019 14:30	5.551	0.568	140.236
8/26/2019 14:35	5.552	0.597	147.392
8/26/2019 14:40	5.384	0.539	127.512
8/26/2019 14:45	5.384	0.58	137.135
8/26/2019 14:50	5.642	0.62	156.732
8/26/2019 14:55	5.536	0.624	153.489
8/26/2019 15:00	5.469	0.516	124.742
8/26/2019 15:05	5.916	0.647	174.752
8/26/2019 15:10	5.517	0.546	133.712
8/26/2019 15:15	5.299	0.521	120.54
8/26/2019 15:20	5.74	0.564	146.063
8/26/2019 15:25	5.464	0.595	143.688
8/26/2019 15:30	5.287	0.531	122.379
8/26/2019 15:35	5.707	0.516	132.626
8/26/2019 15:40	5.359	0.568	133.475
8/26/2019 15:45	5.341	0.522	121.954
8/26/2019 15:50	5.706	0.579	148.694
8/26/2019 15:55	5.335	0.539	125.866
8/26/2019 16:00	5.231	0.532	120.841
8/26/2019 16:05	5.768	0.646	168.519
8/26/2019 16:10	5.403	0.551	130.825
8/26/2019 16:15	5.299	0.52	120.222
8/26/2019 16:20	5.815	0.592	156.234
8/26/2019 16:25	5.568	0.569	141.034
8/26/2019 16:30	5.428	0.549	131.445
8/26/2019 16:35	5.902	0.59	158.908
8/26/2019 16:40	5.559	0.638	157.799
8/26/2019 16:45	6.012	0.703	194.311
8/26/2019 16:50	5.722	0.547	141.001
8/26/2019 16:55	5.515	0.598	146.203
8/26/2019 17:00	5.752	0.655	170.052
8/26/2019 17:05	5.54	0.586	144.374
8/26/2019 17:10	5.784	0.575	150.548
8/26/2019 17:15	5.406	0.609	144.966
8/26/2019 17:20	5.893	0.63	169.279
8/26/2019 17:25	5.611	0.623	156.211
8/26/2019 17:30	5.954	0.672	183.139

8/26/2019 17:35	5.639	0.622	157.042
8/26/2019 17:40	5.855	0.582	154.951
8/26/2019 17:45	5.806	0.64	168.532
8/26/2019 17:50	5.554	0.64	158.069
8/26/2019 17:55	5.83	0.609	161.254
8/26/2019 18:00	5.503	0.602	146.788
8/26/2019 18:05	5.829	0.577	152.722
8/26/2019 18:10	5.44	0.572	137.301
8/26/2019 18:15	5.488	0.595	144.578
8/26/2019 18:20	5.62	0.584	146.775
8/26/2019 18:25	5.311	0.5	115.966
8/26/2019 18:30	5.514	0.574	140.509
8/26/2019 18:35	5.655	0.62	157.303
8/26/2019 18:40	5.334	0.543	126.745
8/26/2019 18:45	5.733	0.585	151.205
8/26/2019 18:50	5.499	0.567	138.168
8/26/2019 18:55	5.995	0.64	176.177
8/26/2019 19:00	5.685	0.593	151.412
8/26/2019 19:05	5.485	0.565	137.235
8/26/2019 19:10	5.891	0.67	179.993
8/26/2019 19:15	5.594	0.596	148.879
8/26/2019 19:20	5.733	0.617	159.52
8/26/2019 19:25	5.83	0.616	162.925
8/26/2019 19:30	5.548	0.593	146.224
8/26/2019 19:35	5.89	0.594	159.665
8/26/2019 19:40	5.459	0.553	133.282
8/26/2019 19:45	5.894	0.63	169.442
8/26/2019 19:50	5.661	0.612	155.336
8/26/2019 19:55	5.491	0.58	140.959
8/26/2019 20:00	5.952	0.651	177.528
8/26/2019 20:05	5.665	0.684	173.883
8/26/2019 20:10	6.107	0.704	198.859
8/26/2019 20:15	5.938	0.656	178.288
8/26/2019 20:20	5.649	0.572	144.721
8/26/2019 20:25	6.089	0.652	183.379
8/26/2019 20:30	5.628	0.647	162.927
8/26/2019 20:35	5.961	0.583	159.132
8/26/2019 20:40	5.557	0.579	143.26
8/26/2019 20:45	5.511	0.6	146.752
8/26/2019 20:50	5.808	0.64	168.529
8/26/2019 20:55	5.562	0.598	148.061
8/26/2019 21:00	5.992	0.643	176.83
8/26/2019 21:05	5.494	0.61	148.503
8/26/2019 21:10	5.928	0.652	176.777
8/26/2019 21:15	5.525	0.555	136.122
8/26/2019 21:20	5.726	0.637	164.291
8/26/2019 21:25	5.575	0.547	135.859
8/26/2019 21:30	5.652	0.593	150.148
8/26/2019 21:35	5.83	0.586	155.206
8/26/2019 21:40	5.539	0.539	132.618
8/26/2019 21:45	5.893	0.649	174.385
8/26/2019 21:50	5.609	0.613	153.52
8/26/2019 21:55	5.392	0.524	124.223
8/26/2019 22:00	5.885	0.706	189.429
8/26/2019 22:05	5.506	0.565	137.868
8/26/2019 22:10	5.397	0.551	130.809
8/26/2019 22:15	5.737	0.638	165.202
8/26/2019 22:20	5.395	0.579	137.356
8/26/2019 22:25	5.353	0.567	133.082

8/26/2019 22:30	5.706	0.595	152.799
8/26/2019 22:35	5.38	0.573	135.258
8/26/2019 22:40	5.752	0.612	158.948
8/26/2019 22:45	5.488	0.521	126.702
8/26/2019 22:50	5.407	0.579	137.692
8/26/2019 22:55	5.855	0.654	174.045
8/26/2019 23:00	5.467	0.542	130.976
8/26/2019 23:05	5.258	0.59	134.96
8/26/2019 23:10	5.74	0.595	154.072
8/26/2019 23:15	5.515	0.54	132.197
8/26/2019 23:20	5.352	0.595	139.509
8/26/2019 23:25	5.378	0.56	132.261
8/26/2019 23:30	5.665	0.604	153.474
8/26/2019 23:35	5.436	0.574	137.551
8/26/2019 23:40	5.344	0.506	118.32
8/26/2019 23:45	5.717	0.572	147.273
8/26/2019 23:50	5.418	0.583	139.108
8/26/2019 23:55	5.292	0.534	123.133
8/27/2019 0:00	5.681	0.561	143.183
8/27/2019 0:05	5.279	0.563	129.431
8/27/2019 0:10	5.069	0.495	107.314
8/27/2019 0:15	5.409	0.55	130.925
8/27/2019 0:20	5.245	0.519	118.16
8/27/2019 0:25	5.101	0.51	111.563
8/27/2019 0:30	5.095	0.461	100.83
8/27/2019 0:35	5.495	0.552	134.32
8/27/2019 0:40	5.121	0.508	111.799
8/27/2019 0:45	4.961	0.446	93.809
8/27/2019 0:50	5.343	0.525	122.874
8/27/2019 0:55	5.187	0.471	105.741
8/27/2019 1:00	4.943	0.461	96.52
8/27/2019 1:05	4.881	0.455	93.621
8/27/2019 1:10	5.36	0.536	125.928
8/27/2019 1:15	5.04	0.494	106.403
8/27/2019 1:20	4.92	0.483	100.552
8/27/2019 1:25	4.881	0.443	91.203
8/27/2019 1:30	5.289	0.523	120.625
8/27/2019 1:35	5.167	0.516	115.125
8/27/2019 1:40	4.958	0.487	102.398
8/27/2019 1:45	4.87	0.473	96.904
8/27/2019 1:50	5.372	0.534	125.958
8/27/2019 1:55	5.039	0.488	104.995
8/27/2019 2:00	4.885	0.488	100.402
8/27/2019 2:05	4.842	0.474	96.366
8/27/2019 2:10	5.218	0.51	115.413
8/27/2019 2:15	5.074	0.457	99.383
8/27/2019 2:20	4.94	0.463	96.754
8/27/2019 2:25	4.88	0.48	98.609
8/27/2019 2:30	4.873	0.438	89.849
8/27/2019 2:35	5.364	0.549	129.234
8/27/2019 2:40	5.056	0.468	101.117
8/27/2019 2:45	4.962	0.47	98.951
8/27/2019 2:50	4.921	0.434	90.301
8/27/2019 2:55	5.302	0.571	132.154
8/27/2019 3:00	5.143	0.489	108.296
8/27/2019 3:05	4.943	0.449	94.032
8/27/2019 3:10	4.851	0.454	92.628
8/27/2019 3:15	5.305	0.516	119.427
8/27/2019 3:20	5.067	0.495	107.439

8/27/2019 3:25	4.899	0.429	88.723
8/27/2019 3:30	4.805	0.421	84.704
8/27/2019 3:35	5.016	0.5	106.957
8/27/2019 3:40	5.122	0.515	113.558
8/27/2019 3:45	4.88	0.444	91.23
8/27/2019 3:50	4.816	0.434	87.477
8/27/2019 3:55	5.25	0.503	114.872
8/27/2019 4:00	5.078	0.483	104.997
8/27/2019 4:05	4.89	0.451	92.934
8/27/2019 4:10	5.143	0.491	108.815
8/27/2019 4:15	5.101	0.5	109.484
8/27/2019 4:20	4.894	0.444	91.667
8/27/2019 4:25	4.844	0.425	86.389
8/27/2019 4:30	5.342	0.543	126.93
8/27/2019 4:35	5.05	0.489	105.443
8/27/2019 4:40	4.851	0.436	88.976
8/27/2019 4:45	4.803	0.436	87.537
8/27/2019 4:50	5.333	0.522	121.846
8/27/2019 4:55	4.947	0.438	91.911
8/27/2019 5:00	4.828	0.425	86.051
8/27/2019 5:05	5.255	0.534	122.067
8/27/2019 5:10	5.118	0.505	111.153
8/27/2019 5:15	4.915	0.466	96.828
8/27/2019 5:20	5.207	0.545	122.829
8/27/2019 5:25	5.236	0.567	128.88
8/27/2019 5:30	4.946	0.469	98.325
8/27/2019 5:35	4.911	0.446	92.526
8/27/2019 5:40	5.346	0.61	142.859
8/27/2019 5:45	4.972	0.488	103.002
8/27/2019 5:50	4.912	0.49	101.597
8/27/2019 5:55	5.378	0.52	122.734
8/27/2019 6:00	5.139	0.498	110.127
8/27/2019 6:05	5.121	0.574	126.421
8/27/2019 6:10	5.43	0.527	126.126
8/27/2019 6:15	5.065	0.451	97.722
8/27/2019 6:20	5.555	0.588	145.359
8/27/2019 6:25	5.17	0.513	114.626
8/27/2019 6:30	5.1	0.471	103.129
8/27/2019 6:35	5.37	0.505	119.008
8/27/2019 6:40	5.089	0.491	107.102
8/27/2019 6:45	5.558	0.528	130.559
8/27/2019 6:50	5.263	0.529	121.084
8/27/2019 6:55	5.503	0.572	139.519
8/27/2019 7:00	5.479	0.569	137.992
8/27/2019 7:05	5.716	0.623	160.258
8/27/2019 7:10	5.509	0.565	137.984
8/27/2019 7:15	5.743	0.558	144.703
8/27/2019 7:20	5.68	0.57	145.523
8/27/2019 7:25	5.807	0.607	159.716
8/27/2019 7:30	5.694	0.57	145.992
8/27/2019 7:35	5.413	0.56	133.471
8/27/2019 7:40	5.757	0.525	136.512
8/27/2019 7:45	5.529	0.58	142.39
8/27/2019 7:50	5.236	0.539	122.528
8/27/2019 7:55	5.657	0.579	146.993
8/27/2019 8:00	5.338	0.526	122.853
8/27/2019 8:05	5.586	0.564	140.429
8/27/2019 8:10	5.636	0.56	141.297
8/27/2019 8:15	5.453	0.618	148.77

8/27/2019 8:20	5.708	0.555	142.517
8/27/2019 8:25	5.388	0.507	119.909
8/27/2019 8:30	5.815	0.623	164.364
8/27/2019 8:35	5.557	0.524	129.471
8/27/2019 8:40	5.248	0.502	114.52
8/27/2019 8:45	5.71	0.593	152.535
8/27/2019 8:50	5.339	0.523	122.228
8/27/2019 8:55	5.247	0.504	114.907
8/27/2019 9:00	5.836	0.579	153.574
8/27/2019 9:05	5.459	0.516	124.369
8/27/2019 9:10	5.353	0.597	140.116
8/27/2019 9:15	5.81	0.572	150.681
8/27/2019 9:20	5.521	0.533	130.53
8/27/2019 9:25	5.446	0.531	127.552
8/27/2019 9:30	5.762	0.593	154.466
8/27/2019 9:35	5.463	0.555	133.9
8/27/2019 9:40	5.648	0.549	138.949
8/27/2019 9:45	5.785	0.621	162.451
8/27/2019 9:50	5.449	0.504	121.239
8/27/2019 9:55	5.322	0.5	116.296
8/27/2019 10:00	5.663	0.54	137.215
8/27/2019 10:05	5.403	0.508	120.632
8/27/2019 10:10	5.818	0.587	154.844
8/27/2019 10:15	5.762	0.589	153.266
8/27/2019 10:20	5.395	0.554	131.368
8/27/2019 10:25	5.748	0.604	156.777
8/27/2019 10:30	5.594	0.587	146.566
8/27/2019 10:35	5.41	0.544	129.595
8/27/2019 10:40	5.948	0.605	164.84
8/27/2019 10:45	5.611	0.606	151.956
8/27/2019 10:50	5.337	0.521	121.677
8/27/2019 10:55	5.764	0.57	148.611
8/27/2019 11:00	5.451	0.544	130.858
8/27/2019 11:05	5.402	0.552	131.212
8/27/2019 11:10	5.91	0.709	191.191
8/27/2019 11:15	5.59	0.6	149.531
8/27/2019 11:20	5.294	0.542	125.056
8/27/2019 11:25	5.791	0.534	139.963
8/27/2019 11:30	5.598	0.557	139.237
8/27/2019 11:35	5.483	0.558	135.484
8/27/2019 11:40	5.749	0.594	154.22
8/27/2019 11:45	5.633	0.554	139.66
8/27/2019 11:50	5.381	0.488	115.422
8/27/2019 11:55	5.807	0.597	157.092
8/27/2019 12:00	5.599	0.552	137.863
8/27/2019 12:05	5.316	0.494	114.62
8/27/2019 12:10	5.409	0.556	132.42
8/27/2019 12:15	5.646	0.56	141.755
8/27/2019 12:20	5.364	0.487	114.502
8/27/2019 12:25	5.315	0.537	124.744
8/27/2019 12:30	5.649	0.537	135.982
8/27/2019 12:35	5.345	0.54	126.461
8/27/2019 12:40	5.892	0.594	159.682
8/27/2019 12:45	5.615	0.564	141.593
8/27/2019 12:50	5.417	0.531	126.663
8/27/2019 12:55	5.87	0.581	155.222
8/27/2019 13:00	5.566	0.602	149.313
8/27/2019 13:05	5.83	0.591	156.351
8/27/2019 13:10	5.468	0.584	141.217

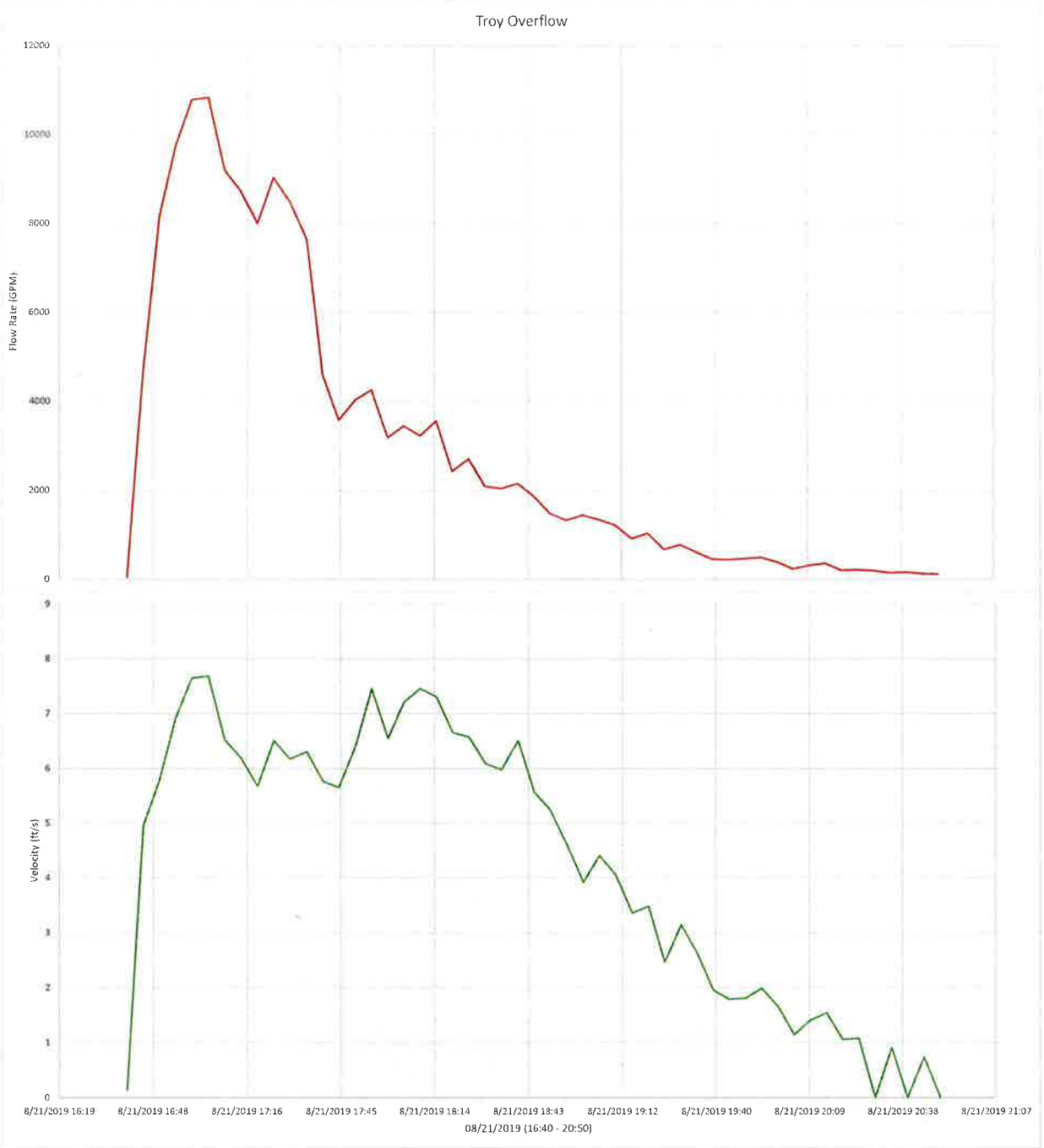
8/27/2019 13:15	5.282	0.531	122.189
8/27/2019 13:20	5.799	0.636	167.027
8/27/2019 13:25	5.538	0.552	135.789
8/27/2019 13:30	5.778	0.589	154.008
8/27/2019 13:35	5.632	0.51	128.569
8/27/2019 13:40	5.429	0.543	130.024
8/27/2019 13:45	5.691	0.588	150.399
8/27/2019 13:50	5.68	0.541	138.025
8/27/2019 13:55	5.455	0.56	134.972
8/27/2019 14:00	5.793	0.548	143.729
8/27/2019 14:05	5.504	0.528	128.906
8/27/2019 14:10	5.302	0.524	121.349
8/27/2019 14:15	5.758	0.565	146.937
8/27/2019 14:20	5.353	0.513	120.214
8/27/2019 14:25	5.272	0.518	118.769
8/27/2019 14:30	5.581	0.514	127.83
8/27/2019 14:35	5.322	0.519	120.668
8/27/2019 14:40	5.423	0.54	129.077
8/27/2019 14:45	5.522	0.517	126.722
8/27/2019 14:50	5.23	0.459	104.24
8/27/2019 14:55	5.202	0.486	109.411
8/27/2019 15:00	5.79	0.532	139.476
8/27/2019 15:05	5.603	0.541	135.489
8/27/2019 15:10	5.367	0.504	118.577
8/27/2019 15:15	5.864	0.593	158.14
8/27/2019 15:20	5.393	0.51	120.863
8/27/2019 15:25	5.194	0.458	102.893
8/27/2019 15:30	5.681	0.595	151.821
8/27/2019 15:35	5.393	0.561	132.88
8/27/2019 15:40	5.248	0.527	120.24
8/27/2019 15:45	5.308	0.488	113.159
8/27/2019 15:50	5.764	0.56	145.994
8/27/2019 15:55	5.422	0.512	122.365
8/27/2019 16:00	5.254	0.481	109.834
8/27/2019 16:05	5.708	0.619	159.034
8/27/2019 16:10	5.34	0.521	121.692
8/27/2019 16:15	5.159	0.456	101.481
8/27/2019 16:20	5.726	0.612	158.045
8/27/2019 16:25	5.372	0.559	131.691
8/27/2019 16:30	5.224	0.462	104.597
8/27/2019 16:35	5.79	0.579	151.665
8/27/2019 16:40	5.397	0.525	124.63
8/27/2019 16:45	5.154	0.454	100.825
8/27/2019 16:50	5.406	0.521	123.935
8/27/2019 16:55	5.531	0.501	123.085
8/27/2019 17:00	5.361	0.505	118.713
8/27/2019 17:05	5.769	0.588	153.283
8/27/2019 17:10	5.504	0.54	131.752
8/27/2019 17:15	5.384	0.464	109.652
8/27/2019 17:20	5.811	0.589	155.145
8/27/2019 17:25	5.438	0.536	128.504
8/27/2019 17:30	5.346	0.539	126.26
8/27/2019 17:35	5.813	0.604	159.319
8/27/2019 17:40	5.411	0.485	115.413
8/27/2019 17:45	5.251	0.472	107.813
8/27/2019 17:50	5.766	0.594	154.888
8/27/2019 17:55	5.387	0.483	114.2
8/27/2019 18:00	5.319	0.514	119.449
8/27/2019 18:05	5.678	0.559	142.551

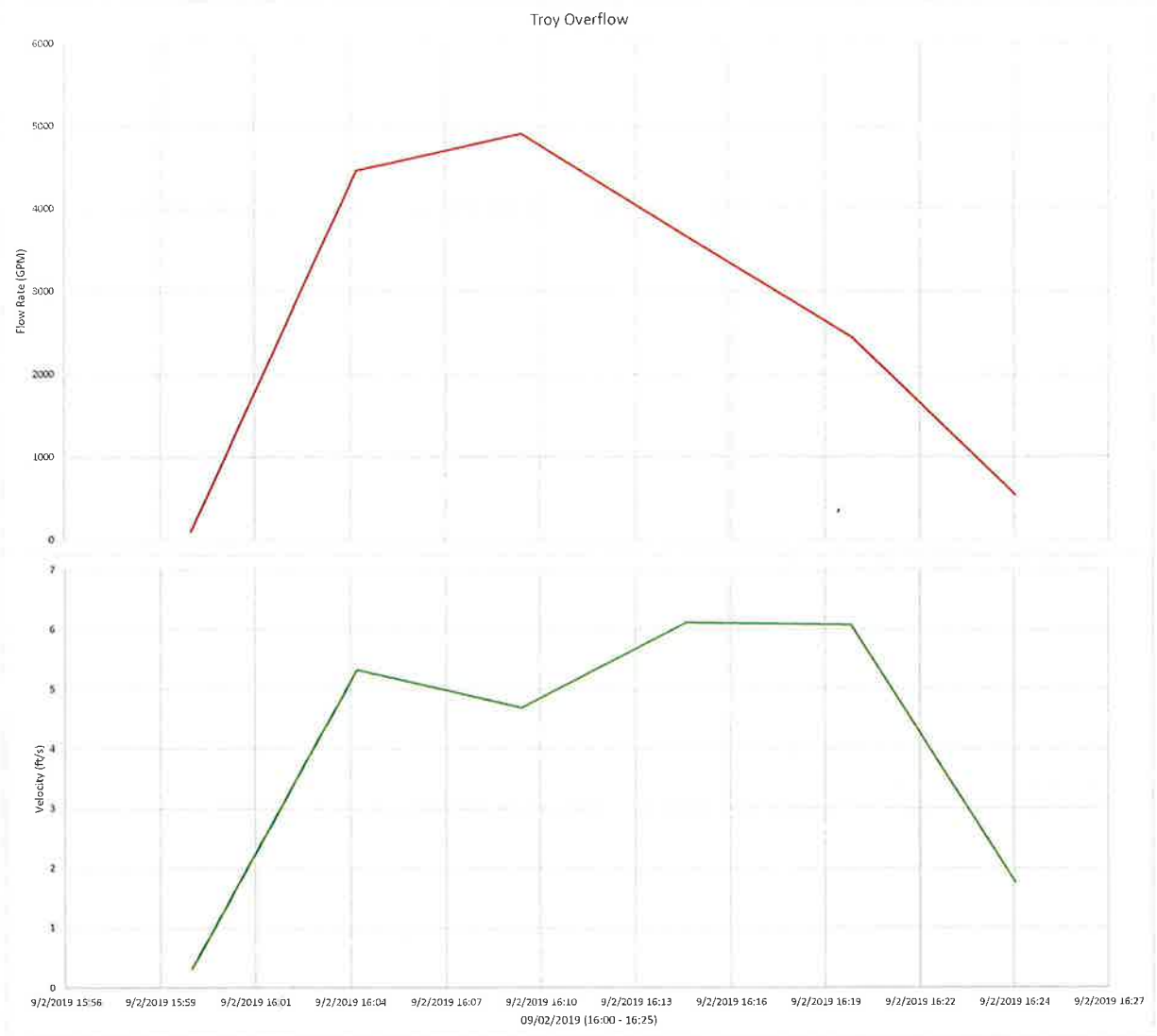
8/27/2019 18:10	5.435	0.524	125.582
8/27/2019 18:15	5.888	0.561	150.509
8/27/2019 18:20	5.586	0.53	131.951
8/27/2019 18:25	5.494	0.551	134.097
8/27/2019 18:30	5.948	0.594	161.817
8/27/2019 18:35	5.609	0.533	133.553
8/27/2019 18:40	5.414	0.522	124.314
8/27/2019 18:45	5.858	0.568	151.314
8/27/2019 18:50	5.485	0.548	133.055
8/27/2019 18:55	5.893	0.634	170.336
8/27/2019 19:00	5.621	0.583	146.63
8/27/2019 19:05	5.494	0.514	125.005
8/27/2019 19:10	5.778	0.516	134.78
8/27/2019 19:15	5.48	0.507	122.919
8/27/2019 19:20	5.662	0.563	142.878
8/27/2019 19:25	5.745	0.527	136.65
8/27/2019 19:30	5.677	0.546	139.179
8/27/2019 19:35	5.868	0.57	152.253
8/27/2019 19:40	5.602	0.543	135.894
8/27/2019 19:45	6.036	0.6	166.813
8/27/2019 19:50	5.656	0.526	133.422
8/27/2019 19:55	6.074	0.585	163.944
8/27/2019 20:00	5.52	0.511	125.228
8/27/2019 20:05	5.938	0.594	161.437
8/27/2019 20:10	5.628	0.607	152.799
8/27/2019 20:15	5.414	0.496	118.267
8/27/2019 20:20	5.785	0.556	145.642
8/27/2019 20:25	5.46	0.547	131.858
8/27/2019 20:30	5.923	0.565	153.073
8/27/2019 20:35	5.501	0.56	136.519
8/27/2019 20:40	5.93	0.557	150.952
8/27/2019 20:45	5.491	0.539	131.135
8/27/2019 20:50	5.723	0.591	152.512
8/27/2019 20:55	5.611	0.548	137.307
8/27/2019 21:00	5.677	0.541	137.926
8/27/2019 21:05	5.645	0.582	147.071
8/27/2019 21:10	5.386	0.502	118.696
8/27/2019 21:15	5.972	0.607	166.321
8/27/2019 21:20	5.544	0.567	139.83
8/27/2019 21:25	6.017	0.582	160.99
8/27/2019 21:30	5.488	0.517	125.516
8/27/2019 21:35	5.262	0.483	110.655
8/27/2019 21:40	5.684	0.545	139.229
8/27/2019 21:45	5.515	0.575	140.565
8/27/2019 21:50	5.661	0.557	141.52
8/27/2019 21:55	5.837	0.582	154.414
8/27/2019 22:00	5.459	0.528	127.406
8/27/2019 22:05	5.947	0.61	166.029
8/27/2019 22:10	5.573	0.525	130.323
8/27/2019 22:15	5.399	0.545	129.453
8/27/2019 22:20	5.832	0.543	143.892
8/27/2019 22:25	5.419	0.497	118.596
8/27/2019 22:30	5.467	0.525	126.832
8/27/2019 22:35	5.623	0.57	143.5
8/27/2019 22:40	5.276	0.505	116.059
8/27/2019 22:45	5.678	0.588	149.867
8/27/2019 22:50	5.47	0.578	139.897
8/27/2019 22:55	5.25	0.48	109.503
8/27/2019 23:00	5.493	0.534	129.888

8/27/2019 23:05	5.409	0.558	132.884
8/27/2019 23:10	5.162	0.505	112.545
8/27/2019 23:15	5.554	0.572	141.285
8/27/2019 23:20	5.382	0.53	125.183
8/27/2019 23:25	5.181	0.474	106.097
8/27/2019 23:30	5.125	0.485	106.874
8/27/2019 23:35	5.599	0.549	137.286
8/27/2019 23:40	5.195	0.501	112.663
8/27/2019 23:45	5.01	0.441	94.217
8/27/2019 23:50	5.442	0.491	117.985
8/27/2019 23:55	5.201	0.514	115.799
8/28/2019 0:00	5.053	0.465	100.431
8/28/2019 0:05	4.959	0.417	87.703
8/28/2019 0:10	5.278	0.523	120.325
8/28/2019 0:15	5.209	0.462	104.355
8/28/2019 0:20	4.971	0.419	88.451
8/28/2019 0:25	4.912	0.422	87.547
8/28/2019 0:30	5.216	0.48	108.593
8/28/2019 0:35	5.329	0.494	115.242
8/28/2019 0:40	5.109	0.465	102.037
8/28/2019 0:45	5.029	0.432	92.615
8/28/2019 0:50	5.554	0.528	130.439
8/28/2019 0:55	5.147	0.46	102.01
8/28/2019 1:00	4.95	0.435	91.338
8/28/2019 1:05	5.466	0.496	119.797
8/28/2019 1:10	5.118	0.444	97.769
8/28/2019 1:15	4.946	0.439	92.085
8/28/2019 1:20	4.966	0.475	100.146
8/28/2019 1:25	5.236	0.505	114.728
8/28/2019 1:30	4.954	0.412	86.529
8/28/2019 1:35	4.872	0.412	84.399
8/28/2019 1:40	5.218	0.454	102.77
8/28/2019 1:45	5.221	0.481	108.861
8/28/2019 1:50	4.961	0.425	89.403
8/28/2019 1:55	4.847	0.423	86.184
8/28/2019 2:00	5.31	0.472	109.398
8/28/2019 2:05	5.123	0.476	104.761
8/28/2019 2:10	4.985	0.44	93.19
8/28/2019 2:15	4.894	0.4	82.535
8/28/2019 2:20	4.83	0.398	80.726
8/28/2019 2:25	5.296	0.533	123.139
8/28/2019 2:30	5.04	0.433	93.304
8/28/2019 2:35	4.846	0.412	83.829
8/28/2019 2:40	4.786	0.414	82.73
8/28/2019 2:45	4.742	0.392	77.286
8/28/2019 2:50	4.797	0.413	82.861
8/28/2019 2:55	5.194	0.484	108.736
8/28/2019 3:00	4.903	0.423	87.547
8/28/2019 3:05	4.77	0.397	78.936
8/28/2019 3:10	4.746	0.387	76.358
8/28/2019 3:15	4.765	0.372	73.847
8/28/2019 3:20	5.224	0.458	103.695
8/28/2019 3:25	4.901	0.45	93.03
8/28/2019 3:30	4.751	0.401	79.347
8/28/2019 3:35	4.735	0.397	78.073
8/28/2019 3:40	4.72	0.409	80.149
8/28/2019 3:45	5.317	0.502	116.542
8/28/2019 3:50	4.98	0.443	93.731
8/28/2019 3:55	4.856	0.4	81.673

8/28/2019 4:00	4.837	0.404	82.029
8/28/2019 4:05	4.834	0.413	83.78
8/28/2019 4:10	5.31	0.502	116.424
8/28/2019 4:15	4.95	0.431	90.327
8/28/2019 4:20	4.783	0.404	80.777
8/28/2019 4:25	4.726	0.393	77.154
8/28/2019 4:30	5.212	0.514	116.036
8/28/2019 4:35	4.997	0.468	99.454
8/28/2019 4:40	4.796	0.429	86.021
8/28/2019 4:45	4.718	0.387	75.885
8/28/2019 4:50	4.706	0.39	76.119
8/28/2019 4:55	5.167	0.5	111.569
8/28/2019 5:00	4.878	0.425	87.328
8/28/2019 5:05	4.787	0.423	84.692
8/28/2019 5:10	4.757	0.415	82.315
8/28/2019 5:15	5.331	0.535	124.726
8/28/2019 5:20	4.999	0.433	92.042
8/28/2019 5:25	4.907	0.436	90.405
8/28/2019 5:30	4.887	0.427	87.961
8/28/2019 5:35	5.381	0.512	120.87
8/28/2019 5:40	5.073	0.461	100.158
8/28/2019 5:45	4.88	0.436	89.646
8/28/2019 5:50	4.895	0.419	86.579
8/28/2019 5:55	5.477	0.519	125.752
8/28/2019 6:00	5.115	0.458	100.679
8/28/2019 6:05	4.906	0.427	88.377
8/28/2019 6:10	5.448	0.532	127.919
8/28/2019 6:15	5.194	0.492	110.56
8/28/2019 6:20	4.95	0.432	90.528
8/28/2019 6:25	5.497	0.548	133.546
8/28/2019 6:30	5.136	0.436	96.355
8/28/2019 6:35	5.003	0.441	93.827
8/28/2019 6:40	5.67	0.564	143.656
8/28/2019 6:45	5.312	0.46	106.823
8/28/2019 6:50	5.147	0.44	97.498
8/28/2019 6:55	5.665	0.514	130.729
8/28/2019 7:00	5.303	0.472	109.285
8/28/2019 7:05	5.496	0.558	135.76
8/28/2019 7:10	5.442	0.491	117.819
8/28/2019 7:15	5.224	0.541	122.635
8/28/2019 7:20	5.79	0.6	157.336
8/28/2019 7:25	5.407	0.501	119.261
8/28/2019 7:30	5.443	0.55	132.153
8/28/2019 7:35	5.582	0.534	132.807
8/28/2019 7:40	5.361	0.503	118.261
8/28/2019 7:45	5.903	0.529	142.499
8/28/2019 7:50	5.58	0.49	121.921
8/28/2019 7:55	5.734	0.611	157.869
8/28/2019 8:00	5.54	0.51	125.479
8/28/2019 8:05	5.222	0.488	110.478
8/28/2019 8:10	5.368	0.507	119.325
8/28/2019 8:15	5.541	0.507	124.945
8/28/2019 8:20	5.247	0.495	112.742
8/28/2019 8:25	5.301	0.492	113.866
8/28/2019 8:30	5.583	0.544	135.459
8/28/2019 8:35	5.305	0.511	118.323
8/28/2019 8:40	5.787	0.551	144.302
8/28/2019 8:45	5.728	0.594	153.253
8/28/2019 8:50	5.455	0.51	122.81

Exhibit D – 24-inch Overflow Data, Graphs and Precipatation


Troy Overflow
Flow Rate (GPM)
12000
10000
8000
6000
4000
2000
0
Velocity (ft/s)
9
8
7
6
5
4
3
2
1
0
8/21/2019 16:19
8/21/2019 16:48
8/21/2019 17:16
8/21/2019 17:45
8/21/2019 18:14
8/21/2019 18:43
8/21/2019 19:12
8/21/2019 19:40
8/21/2019 20:09
8/21/2019 20:38
8/21/2019 21:07
08/21/2019 (16:40 - 20:50)


Troy Overflow
Flow Rate (GPM)
6000
5000
4000
3000
2000
1000
0
Velocity (ft/s)
7
6
5
4
3
2
1
0
9/2/2019 15:56
9/2/2019 15:59
9/2/2019 16:01
9/2/2019 16:04
9/2/2019 16:07
9/2/2019 16:10
9/2/2019 16:13
9/2/2019 16:16
9/2/2019 16:19
9/2/2019 16:22
9/2/2019 16:24
9/2/2019 16:27
09/02/2019 (16:00 - 16:25)

Select year: August

Weather history Troy august 2019

Day	High (°F)	Low (°F)	Precip. (inch)	Snow (inch)	Snow depth (inch)
1 aug 2019	-	-	0.11	0.00	0.00
2 aug 2019	-	-	0.00	0.00	0.00
3 aug 2019	-	-	0.00	0.00	0.00
4 aug 2019	-	-	0.30	0.00	0.00
5 aug 2019	-	-	0.00	0.00	0.00
6 aug 2019	-	-	0.00	0.00	0.00
7 aug 2019	-	-	0.31	0.00	0.00
8 aug 2019	-	-	0.26	0.00	0.00
9 aug 2019	-	-	0.20	0.00	0.00
10 aug 2019	-	-	0.00	0.00	0.00
11 aug 2019	-	-	0.02	0.00	0.00
12 aug 2019	-	-	0.00	0.00	0.00
13 aug 2019	-	-	0.00	0.00	0.00
14 aug 2019	-	-	0.43	0.00	0.00
15 aug 2019	-	-	-	-	-
16 aug 2019	-	-	-	-	-
17 aug 2019	-	-	-	-	-
18 aug 2019	-	-	-	-	-
19 aug 2019	-	-	1.13	0.00	0.00
20 aug 2019	-	-	0.00	0.00	0.00
21 aug 2019	-	-	-	-	-
22 aug 2019	-	-	1.85	0.00	0.00
23 aug 2019	-	-	0.00	0.00	0.00
24 aug 2019	-	-	0.00	0.00	0.00
25 aug 2019	-	-	0.00	0.00	0.00

Past weather Troy - august 2019

Average high temperature:	- °F (normal: 82°F)
Average low temperature:	- °F (normal: 61°F)
Average temperature:	- °F (normal: 71°F)
Total Precipitation:	4.7 inch (normal: 4.13 inch)
Total snowfall:	0 inch
Highest max temperature:	- °F
Lowest max temperature:	- °F
Highest min temperature:	- °F
Lowest min temperature:	- °F

Day	High (°F)	Low (°F)	Precip. (inch)	Snow (inch)	Snow depth (inch)
26 aug 2019	-	-	0.00	0.00	0.00
27 aug 2019	-	-	0.00	0.00	0.00
28 aug 2019	-	-	0.00	0.00	0.00
29 aug 2019	-	-	0.09	0.00	0.00
30 aug 2019	-	-	0.00	0.00	0.00
31 aug 2019	-	-	0.00	0.00	0.00

T = Trace

Select year: Select month:

Weather history Troy september 2019

Day	High (°F)	Low (°F)	Precip. (inch)	Snow (inch)	Snow depth (inch)
1 sep 2019	-	-	0.00	0.00	0.00
2 sep 2019	-	-	0.05	0.00	0.00
3 sep 2019	-	-	0.73	0.00	0.00
4 sep 2019	-	-	0.00	0.00	0.00
5 sep 2019	-	-	-	-	-
6 sep 2019	-	-	0.00	0.00	0.00
7 sep 2019	-	-	0.00	0.00	0.00
8 sep 2019	-	-	0.00	0.00	0.00
9 sep 2019	-	-	-	-	-
10 sep 2019	-	-	0.00	0.00	0.00
11 sep 2019	-	-	0.00	0.00	0.00
12 sep 2019	-	-	0.00	0.00	0.00
13 sep 2019	-	-	0.03	0.00	0.00
14 sep 2019	-	-	0.00	0.00	0.00
15 sep 2019	-	-	-	-	-
16 sep 2019	-	-	0.00	0.00	0.00
17 sep 2019	-	-	0.00	0.00	0.00
18 sep 2019	-	-	0.00	0.00	0.00
19 sep 2019	-	-	0.00	0.00	0.00
20 sep 2019	-	-	0.00	0.00	0.00
21 sep 2019	-	-	0.00	0.00	0.00
22 sep 2019	-	-	0.00	0.00	0.00
23 sep 2019	-	-	0.00	0.00	0.00
24 sep 2019	-	-	3.00	0.00	0.00
25 sep 2019	-	-	-	-	-

Past weather Troy - september 2019

Average high temperature:	- °F (normal: 74°F)
Average low temperature:	- °F (normal: 52°F)
Average temperature:	- °F (normal: 63°F)
Total Precipitation:	3.81 inch (normal: 3.5 inch)
Total snowfall:	0 inch
Highest max temperature:	- °F
Lowest max temperature:	- °F
Highest min temperature:	- °F
Lowest min temperature:	- °F

Site Name	Troy Overflow		
Isco Quantity	Flow Rate	Velocity	Level
Label	Flow Rate	Velocity	Level
Units	gpm	ft/s	in
Resolution	0.1	0.1	0.1
Significant Digits	0	0	0
8/21/2019 9:50			-0.008
8/21/2019 10:00	0	0	-0.008
8/21/2019 10:05	0	0	-0.04
8/21/2019 10:10	0	0	-0.074
8/21/2019 10:15	0	0	-0.039
8/21/2019 10:20	0	0	-0.024
8/21/2019 10:25	0	0	-0.016
8/21/2019 10:30	0	0	-0.005
8/21/2019 10:35	-0.011	-0.043	0.06
8/21/2019 10:40	-0.01	-0.043	0.057
8/21/2019 10:45	-0.005	-0.029	0.044
8/21/2019 10:50	-0.005	-0.024	0.009
8/21/2019 10:55	-0.008	-0.034	0.047
8/21/2019 11:00	0	0	-0.005
8/21/2019 11:05	0	0	-0.059
8/21/2019 11:10	-0.008	-0.043	0.048
8/21/2019 11:15	-5.391	0	3.87
8/21/2019 11:20	-6.029	0	3.74
8/21/2019 11:25	-6.092	0	3.764
8/21/2019 11:30	-5.968	0	3.711
8/21/2019 11:35	-5.893	0	3.679
8/21/2019 11:40	-5.65	0	3.574
8/21/2019 11:45	-5.565	0	3.537
8/21/2019 11:50	-5.359	0	3.446
8/21/2019 11:55	-5.177	0	3.365
8/21/2019 12:00	-4.968	0	3.271
8/21/2019 12:05	-4.717	0	3.157
8/21/2019 12:10	-4.502	0	3.057
8/21/2019 12:15	-4.336	0	2.979
8/21/2019 12:20	-4.131	0	2.882
8/21/2019 12:25	-4.034	0	2.835
8/21/2019 12:30	-3.96	0	2.8
8/21/2019 12:35	-3.925	0	2.783
8/21/2019 12:40	-3.923	0	2.782
8/21/2019 12:45	-3.909	0	2.775
8/21/2019 12:50	-3.907	0	2.774
8/21/2019 12:55	-3.91	0	2.776
8/21/2019 13:00	-3.905	0	2.773
8/21/2019 13:05	-3.911	0	2.776
8/21/2019 13:10	-3.914	0	2.778

8/21/2019 13:15	-3.914	0	2.778
8/21/2019 13:20	-3.911	0	2.776
8/21/2019 13:25	-3.904	0	2.773
8/21/2019 13:30	-3.9	0	2.771
8/21/2019 13:35	-3.91	0	2.775
8/21/2019 13:40	-3.893	0	2.767
8/21/2019 13:45	-3.904	0	2.773
8/21/2019 13:50	-3.865	0	2.754
8/21/2019 13:55	-3.882	0	2.762
8/21/2019 14:00	-3.885	0	2.763
8/21/2019 14:05	-3.881	0	2.762
8/21/2019 14:10	-3.878	0	2.76
8/21/2019 14:15	-3.893	0	2.767
8/21/2019 14:20	-3.892	0	2.767
8/21/2019 14:25	-3.904	0	2.773
8/21/2019 14:30	-3.896	0	2.769
8/21/2019 14:35	-3.887	0	2.765
8/21/2019 14:40	-3.885	0	2.764
8/21/2019 14:45	-3.893	0	2.767
8/21/2019 14:50	-3.886	0	2.764
8/21/2019 14:55	-3.899	0	2.77
8/21/2019 15:00	-3.895	0	2.768
8/21/2019 15:05	-3.895	0	2.768
8/21/2019 15:10	-3.891	0	2.766
8/21/2019 15:15	-3.893	0	2.768
8/21/2019 15:20	-3.883	0	2.762
8/21/2019 15:25	-3.892	0	2.767
8/21/2019 15:30	-3.89	0	2.766
8/21/2019 15:35	-3.897	0	2.769
8/21/2019 15:40	-3.89	0	2.766
8/21/2019 15:45	-3.916	0	2.779
8/21/2019 15:50	-3.906	0	2.774
8/21/2019 15:55	-3.888	0	2.765
8/21/2019 16:00	-3.885	0	2.764
8/21/2019 16:05	-3.916	0	2.779
8/21/2019 16:10	-3.909	0	2.775
8/21/2019 16:15	-3.899	0	2.771
8/21/2019 16:20	-3.904	0	2.773
8/21/2019 16:25	-3.905	0	2.773
8/21/2019 16:30	-3.936	0	2.788
8/21/2019 16:35	-3.962	0	2.801
8/21/2019 16:40	47.107	0.142	6.832
8/21/2019 16:45	4716.3	4.954	15.345
8/21/2019 16:50	8154.83	5.783	29.116
8/21/2019 16:55	9745.96	6.912	30.055
8/21/2019 17:00	10781.8	7.646	31.004
8/21/2019 17:05	10832.4	7.682	31.873

8/21/2019 17:10	9202.17	6.526	28.713
8/21/2019 17:15	8729.5	6.191	27.729
8/21/2019 17:20	8002.34	5.675	24.835
8/21/2019 17:25	9027.61	6.507	22.917
8/21/2019 17:30	8494.82	6.172	22.586
8/21/2019 17:35	7636.4	6.304	19.236
8/21/2019 17:40	4620.16	5.767	13.287
8/21/2019 17:45	3572.95	5.654	11.022
8/21/2019 17:50	4036.25	6.407	10.996
8/21/2019 17:55	4257.05	7.458	10.198
8/21/2019 18:00	3188.75	6.554	9.049
8/21/2019 18:05	3442.54	7.216	8.919
8/21/2019 18:10	3228.07	7.457	8.303
8/21/2019 18:15	3559.83	7.305	9.06
8/21/2019 18:20	2431.62	6.66	7.336
8/21/2019 18:25	2708.19	6.572	8.009
8/21/2019 18:30	2091.78	6.088	7.021
8/21/2019 18:35	2042.28	5.98	6.992
8/21/2019 18:40	2151.59	6.506	6.831
8/21/2019 18:45	1864.72	5.562	6.899
8/21/2019 18:50	1489.46	5.244	6.129
8/21/2019 18:55	1333.83	4.621	6.199
8/21/2019 19:00	1440.73	3.924	7.365
8/21/2019 19:05	1344.54	4.41	6.446
8/21/2019 19:10	1224.39	4.058	6.398
8/21/2019 19:15	923.478	3.365	5.981
8/21/2019 19:20	1039.34	3.485	6.345
8/21/2019 19:25	681.748	2.472	6.001
8/21/2019 19:30	780.65	3.15	5.565
8/21/2019 19:35	617.49	2.633	5.353
8/21/2019 19:40	460.248	1.956	5.366
8/21/2019 19:45	447.21	1.793	5.591
8/21/2019 19:50	469.033	1.812	5.739
8/21/2019 19:55	495.841	1.993	5.579
8/21/2019 20:00	398.096	1.662	5.433
8/21/2019 20:05	237.911	1.149	4.905
8/21/2019 20:10	318.264	1.411	5.207
8/21/2019 20:15	362.431	1.547	5.349
8/21/2019 20:20	208.672	1.059	4.739
8/21/2019 20:25	215.555	1.083	4.77
8/21/2019 20:30	198.382	0	4.501
8/21/2019 20:35	154.671	0.911	4.27
8/21/2019 20:40	168.225	0	4.527
8/21/2019 20:45	131.466	0.74	4.409
8/21/2019 20:50	123.811	0	4.229
8/21/2019 20:55	123.548	0	4.222
8/21/2019 21:00	105.92	0	3.795

8/21/2019 21:05	54.274	0	2.4

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Second Avenue Apartments		
Project Location (describe, and attach a general location map): Second Avenue and Roosevelt Avenue, City of Troy/ Town of Schaghticoke		
Brief Description of Proposed Action (include purpose or need): The Applicant is proposing to construct 3 (three) multi-family apartment buildings with 220-240 residential units on an existing undeveloped lot within the R-1 Residential zone and HD Pleasantdale (Hamlet). The proposed project consists of two tax parcels, one in the City of Troy sized at 10±AC (SBL 70.64-1-1), and one within the Town of Schaghticoke at 1± AC (SBL 70.56-1-6). The applicant proposes to rezone the property to Planned Development (zone P) to construct 3 (three) multi-family buildings, associated parking, stormwater management, site amenities and utilities. Parking will be accommodated via above and below-grade parking facilities.		
Name of Applicant/Sponsor: Kevin Vandenburgh	Telephone: E-Mail: ktv70@ymail.com	
Address: 430 9th Ave		
City/PO: Troy	State: NY	Zip Code: 12182
Project Contact (if not same as sponsor; give name and title/role):	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor): Golub Prop of Watervliet Inc	Telephone: E-Mail:	
Address: 501 Duanesburg Rd		
City/PO: Schenectady	State: NY	Zip Code: 12306

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☑Yes ☐No	Troy City Council Town of Schaghticoke	
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Troy Planning Commission Schaghticoke Planning Board	
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☑Yes ☐No	Troy Industrial Development Authority	
e. County agencies ☑Yes ☐No	Rens Co DOH	
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	NYS OPRHP, NYSDEC, NYSDOT and NYS Canal Corporation	
h. Federal agencies ☑Yes ☐No	ACOE	

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☑Yes ☐No

The project is located on the waterfront of the Hudson River

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

Refer to attached Narrative Report

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐Yes ☑No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☑Yes ☐No

If Yes, identify the plan(s):

Remediaton Sites:546031

The Site Record of Remediation Site 546031 is attached herein. The site (200mile length of the Hudson River) has had its work completed, and the potential for exposure to the contaminants are based on fish consumption.

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
R-1 (Single Family Residential) zone in the City of Troy. HD Pleasantdale (Hamlet) zone in the Town of Schaghticoke

b. Is the use permitted or allowed by a special or conditional use permit? ☐ Yes ☑ No

c. Is a zoning change requested as part of the proposed action? ☑ Yes ☐ No
If Yes,
i. What is the proposed new zoning for the site? P (Planned Development)

C.4. Existing community services.

a. In what school district is the project site located? Lansingburgh

b. What police or other public protection forces serve the project site?
Troy Police Dept

c. Which fire protection and emergency medical services serve the project site?
Troy Fire Station

d. What parks serve the project site?
Frear Park, Knickerbocker Park, and Powers Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Residential

b. a. Total acreage of the site of the proposed action? 11.0 acres
b. Total acreage to be physically disturbed? 9+/- acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 11.0 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
ii. Is a cluster/conservation layout proposed? ☐ Yes ☐ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: _____ months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? ☑ Yes ☐ No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase				3 buildings (220-240 units)
At completion of all phases				

g. Does the proposed action include new non-residential construction (including expansions)? ☐ Yes ☑ No

If Yes,

i. Total number of structures _____

ii. Dimensions (in feet) of largest proposed structure: _____height; _____width; and _____ length

iii. Approximate extent of building space to be heated or cooled: _____ square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☑ Yes ☐ No

If Yes,

i. Purpose of the impoundment: Temporary detainment of stormwater.

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐ Other specify: Temporary detainment of stormwater.

iii. If other than water, identify the type of impounded/contained liquids and their source.

iv. Approximate size of the proposed impoundment. Volume: TBD million gallons; surface area: TBD acres

v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete): Earth

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? (Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite) ☑ Yes ☐ No

If Yes:

i .What is the purpose of the excavation or dredging? Exported material may exceed 750CY. Quantities will be verified during engineering

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): Limited; to be determined during site plan approval.
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

Based on site visits, onsite soils are found to be rippable shale and rock. Excavation can be performed with general construction equipment.

iv. Will there be onsite dewatering or processing of excavated materials? ☐ Yes ☑ No

If yes, describe. _____

v. What is the total area to be dredged or excavated? 6-7 acres

vi. What is the maximum area to be worked at any one time? < 5 acres

vii. What would be the maximum depth of excavation or dredging? 30 feet

viii. Will the excavation require blasting? ☐ Yes ☑ No

ix. Summarize site reclamation goals and plan: Project site contains rippable shale and rock; no blasting is anticipated for the construction of this project.

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☑ Yes ☐ No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): Shoreline of the Hudson River

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

_____

_____

_____

_____

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐ Yes ☐ No

If Yes, describe: _____

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐ Yes ☐ No

If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____

_____

- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

_____

c. Will the proposed action use, or create a new demand for water? ☑ Yes ☐ No

If Yes:

i. Total anticipated water usage/demand per day: 39,600+/- gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☑ Yes ☐ No

If Yes:

- Name of district or service area: City of Troy
- Does the existing public water supply have capacity to serve the proposal? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☑ No
- Do existing lines serve the project site? ☑ Yes ☐ No

iii. Will line extension within an existing district be necessary to supply the project? ☐ Yes ☑ No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

_____

- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☐ No

If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

_____

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☑ Yes ☐ No

If Yes:

i. Total anticipated liquid waste generation per day: 39,600+/- gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

Sanitary Wastewater

_____

iii. Will the proposed action use any existing public wastewater treatment facilities? ☑ Yes ☐ No

If Yes:

- Name of wastewater treatment plant to be used: Rensselaer County Wastewater Treatment Plant
- Name of district: City of Troy
- Does the existing wastewater treatment plant have capacity to serve the project? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☑ No

- Do existing sewer lines serve the project site? ☑ Yes ☐ No
- Will a line extension within an existing district be necessary to serve the project? ☐ Yes ☑ No

  If Yes:
  - Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐ Yes ☑ No

If Yes:
- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☑ Yes ☐ No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or 4+/- acres (impervious surface)

_____ Square feet or 11 acres (parcel size)

ii. Describe types of new point sources. All point sources (swales, gutters, etc.) will be routed to appropriately sized stormwater management areas.

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

On-site stormwater management facilities will be discharged directly to the Hudson River.

- If to surface waters, identify receiving water bodies or wetlands: Hudson River
- Will stormwater runoff flow to adjacent properties? Stormwater will discharge to the Hudson River ☐ Yes ☑ No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☑ Yes ☐ No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☐ Yes ☑ No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐ Yes ☑ No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐ Yes ☐ No

ii. In addition to emissions as calculated in the application, the project will generate:
- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

_____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

_____

_____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? Refer to the attached Narrative Report ☐Yes ☑No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend ☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

_____

iii. Parking spaces: Existing 0 Proposed 353 Net increase/decrease +353

iv. Does the proposed action include any shared use parking? ☐Yes ☑No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:
All construction roads shall be privately maintained.

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☑Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☑No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☑Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☐Yes ☑No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

_____

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

_____

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☐No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 7am - 7 pm
- Saturday: 7am - 7 pm
- Sunday: _____
- Holidays: _____

ii. During Operations:

- Monday - Friday: 24 hour (residential)
- Saturday: 24 hour (residential)
- Sunday: 24 hour (residential)
- Holidays: 24 hour (residential)

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

Noise is expected to increase during construction, assumed to be between 7AM and 4PM

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☑ Yes ☐ No

Describe: Clearing is proposed.

n. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

Lighting shall be proposed to adhere to local and state regulations.

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☑ Yes ☐ No

Describe: Clearing is proposed.

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities:_____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☐ Yes ☑ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: _____ tons per _____ (unit of time)
- Operation : _____ tons per _____ (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: _____
- Operation: _____

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: _____
- Operation: _____

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

_____

_____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

_____

_____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

_____

_____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

_____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

_____

_____

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☐ Commercial ☑ Residential (suburban) ☐ Rural (non-farm)

☑ Forest ☐ Agriculture ☑ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe:

_____

_____

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0	4+/-	+4+/-
• Forested	7+/-	2.6+/-	-4.4+/-
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	4+/-	0	-4+/-
• Agricultural (includes active orchards, field, greenhouse etc.)			
• Surface water features (lakes, ponds, streams, rivers, etc.)			
• Wetlands (freshwater or tidal)			
• Non-vegetated (bare rock, earth or fill)			
• Other Describe: grass _____ _____		4.4+/-	+4.4+/-

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☑ Yes ☐ No

If Yes,

i. Identify Facilities:

Turnpike Elementary School, Knickerbacker Middle School, and Lansingburgh High School

e. Does the project site contain an existing dam? ☐ Yes ☑ No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

_____

_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Has the facility been formally closed? ☐ Yes ☐ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

_____

_____

iii. Describe any development constraints due to the prior solid waste activities: _____

_____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

_____

_____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☑ Yes ☐ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☑ Yes ☐ No

☐ Yes – Spills Incidents database — Provide DEC ID number(s): _____

☑ Yes – Environmental Site Remediation database — Provide DEC ID number(s): 546031 See attached documents

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures:

NYSDEC classification 02 (a. the disposal of hazardous waste has been confirmed and the presence of such hazardous waste or its components or breakdown products represents a significant threat to public health or the environment: or b. hazardous waste disposal has not been confirmed, but the site has been listed on the Federal National Priorities List (NPL).

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☑ Yes ☐ No

If yes, provide DEC ID number(s): 546031, 546053, E546053

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

_____

_____

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☑ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? Average 5+/- feet

b. Are there bedrock outcroppings on the project site? ☑ Yes ☐ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? < 5 %

c. Predominant soil type(s) present on project site:
NrD Nassau Rock outcrop complex 100 %
_____ _____ %
_____ _____ %

d. What is the average depth to the water table on the project site? Average: Assumed 6 feet

e. Drainage status of project site soils:
☑ Well Drained: 100 % of site
☐ Moderately Well Drained: _____ % of site
☐ Poorly Drained _____ % of site

f. Approximate proportion of proposed action site with slopes:
☑ 0-10%: 15 % of site
☑ 10-15%: 30 % of site
☑ 15% or greater: 55 % of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑ Yes ☐ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No
Hudson River

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name _____ Classification _____
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name Federal Waters, Federal Waters (Hudson River) Approximate Size _____
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100-year Floodplain? The project property lies partially within Zone A11 (Elev. 35+/-) ☑ Yes ☐ No

k. Is the project site in the 500-year Floodplain? The project property lies partially within Zone B ☑ Yes ☐ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☑ Yes ☐ No
If Yes:

i. Name of aquifer: Principal Aquifer

m. Identify the predominant wildlife species that occupy or use the project site:
deer | small mammals

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No
If Yes:
i. Describe the habitat/community (composition, function, and basis for designation): _____
ii. Source(s) of description or evaluation: _____
iii. Extent of community/habitat:
- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☐ Yes ☑ No

If Yes:
i. Species and listing (endangered or threatened): _____

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

If Yes:
i. Species and listing: _____

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No
If yes, give a brief description of how the proposed action may affect that use: _____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No
If Yes, provide county plus district name/number: _____

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☑ No
i. If Yes: acreage(s) on project site? _____
ii. Source(s) of soil rating(s): _____

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No
If Yes:
i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature
ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No
If Yes:
i. CEA name: _____
ii. Basis for designation: _____
iii. Designating agency and date: _____

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☑ Yes ☐ No

If Yes:

i. Nature of historic/archaeological resource: ☑ Archaeological Site ☑ Historic Building or District

ii. Name: New York State Barge Canal Historic District Phase IB and II has been performed; see attached report.

iii. Brief description of attributes on which listing is based:

The site contains the Dickerson Street Site, a Middle to Late Archaic quarry with multiple loci. See attached report (April 2020) for further details.

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☑ Yes ☐ No

If Yes:

i. Describe possible resource(s): Dickerson Street Site; a Middle to Late Archaic quarry with multiple loci.

ii. Basis for identification: Attached PHASE IB/II Archaeological Report by Hartgen Archaeological (April 2020)

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☑ Yes ☐ No

If Yes:

i. Identify resource: Peebles Island State Park

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): NY State park

iii. Distance between project and resource: 1 miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation:

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

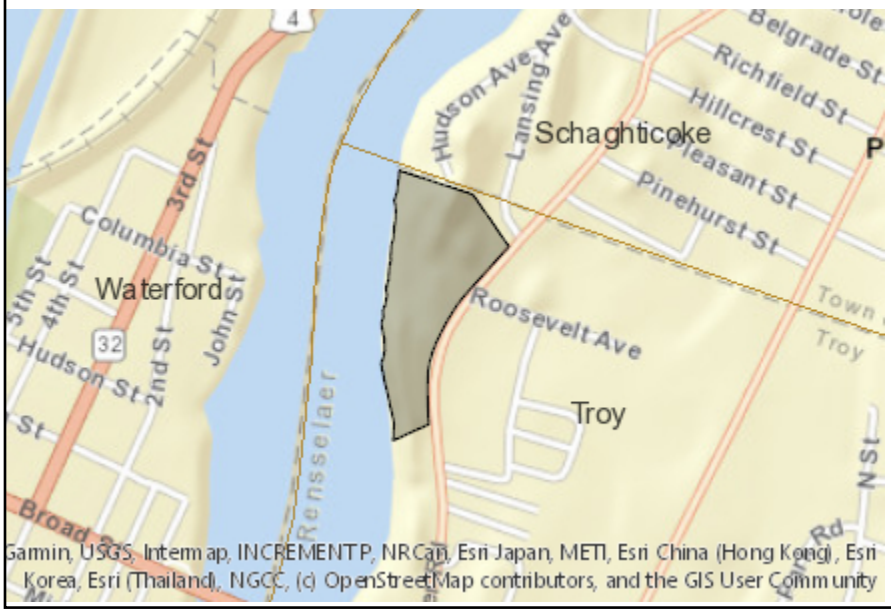
Applicant/Sponsor Name Kevin Vandenburgh Date 05/04/2021

Signature Title

PRINT FORM

EAF Mapper Summary Report

Friday, January 8, 2021 9:20 AM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.

B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Yes - Digital mapping data are not available for all Special Planning Districts. Refer to EAF Workbook.
C.2.b. [Special Planning District - Name]	Remediaton Sites:546031
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Yes - Digital mapping data for Spills Incidents are not available for this location. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Yes
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Yes
E.1.h.i [DEC Spills or Remediation Site - DEC ID Number]	546031
E.1.h.iii [Within 2,000' of DEC Remediation Site]	Yes
E.1.h.iii [Within 2,000' of DEC Remediation Site - DEC ID]	546031, 546053, E546053
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Yes
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Wetlands Name]	Federal Waters
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.

E.2.j. [100 Year Floodplain]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.k. [500 Year Floodplain]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.l. [Aquifers]	Yes
E.2.l. [Aquifer Names]	Principal Aquifer
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	No
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Yes - Digital mapping data for archaeological site boundaries are not available. Refer to EAF Workbook.
E.3.e.ii [National or State Register of Historic Places or State Eligible Sites - Name]	New York State Barge Canal Historic District
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No