Engineer's

MAP, PLAN, AND REPORT

for

TOWN OF CAZENOVIA/TOWN OF NELSON ROUTE 20 WATER DISTRICT

Prepared for:

TOWN OF CAZENOVIA
7 Albany Street
Cazenovia, NY 13035

TOWN OF NELSON
4085 Nelson Road
Cazenovia, NY 13035

December 18, 2017

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APPENDICES

1. INTRODUCTION

This report will locate, describe, and address the feasibility of the project.

2. LOCATION

The Town of Cazenovia/Town of Nelson Route 20 Water District is located in the Towns of Cazenovia and Nelson, in Madison County, and includes 10 properties in the Trush Business Park, and 35 properties on both sides of US Route 20 from Stone Quarry Road to 800 feet west of Nelson Heights Road (APPENDICES A, B-2, and O).

3. EXISTING CONDITIONS

The proposed public water service area consists of approximately 19 businesses, 11 residential properties, and 15 parcels of vacant land, all of which currently or will obtain water from individual wells (APPENDIX B). Many of the properties in the Trush Business Park are connected to a gravity sewer system operated by the Madison County Sewer District.

The daily population of the service area is estimated to be 1,200 daily employees and customers, and 50 full-time residents.

The Madison County Department of Health (MCDH) currently regulates private, non-community water systems for the following businesses:

Cazenovia Senior Services	-	Medical offices
Cazenovia Children's House	-	Daycare Center
GHD	-	Engineering Offices
Knowles Cazenovia	-	Manufacturing
Marquart Switches	-	Manufacturing
Pelco Electronic Components	-	Manufacturing

According to the Health Department's records, 6 regulated non-transient systems within the proposed service area have significant water quality issues (APPENDIX J).

The existing water use, all from individual wells, is estimated from actual metered water use, and from New York State Department of Health (NYSDOH) design rates to be approximately 20,000 gpd for the 20 commercial properties, and 5,000 gpd for the 11 residential properties for a total of 25,000 gpd.

According to the New York State Department of Environment Conservation (NYSDEC) Resource Map (APPENDIX D), there are no protected water bodies, environmental resources, or threatened or endangered species located within the project area. A small portion of the westerly project area is located in an archeological sensitive area (APPENDIX I). However, this area has been previously disturbed, and does not likely contain any significant resources.

USGS elevations within the project service area range from 1,370 to 1,680 (APPENDIX A).

The existing Village of Cazenovia water system, which will supply the proposed project, is located approximately 800 feet west of the project area, and has adequate capacity for the potential increase in use (APPENDIX G).

The Village utilizes ground water as its water supply, which is pumped from 3 wells located in a well field east of Chenango Street in the south side of the Village. A water treatment plant provides softening, chlorination, and chemical addition for corrosion control. The Village's distribution system consists of pipe lines between 4-inch and 12-inch, with 2 storage tanks with a combined capacity of 800,000 gallons. The system operates at a pressure gradient of approximately 1,288 feet. Previous studies (APPENDICES K and L) have estimated the capacity of the Village's current water system to be >500,000 gpd, and >500 gpm. Current Village water use averages 300,000 gpd, with peak usage rates of 210 gpm.

The Village is in the process of installing a fourth back-up well, and expanding the treatment capacity to provide additional system redundancy.

4. PROJECT DESCRIPTION

The Town of Cazenovia/Town of Nelson Route 20 Water District will include all of the 45 properties along Route 20 from Stone Quarry Road to 800 feet east of Nelson Heights Road. (APPENDIX B-2). The water district will be supplied water by a 10,500-foot extension of the Village of Cazenovia's public water main located 800 feet west of Stone Quarry Road. At this connection, a pump station will be installed to increase the water system pressure gradient from 1,288 feet to 1,640 feet, which is 100 feet below the elevation of the bottom of a new 100,000-gallon storage tank, at an approximate elevation of 1,740 feet. The elevated pressure gradient of 1,740 feet will provide a minimum pressure of 40 psi at the highest elevation (1,640 feet) in the proposed service

area. The elevated tank will be located on one of the available vacant properties (APPENDIX B2).

Individual properties will be provided appropriately sized water services (ranging from ¾-inch to 4-inch) from the 12-inch and 8-inch water main to be located on the south side of Route 20 and in the right-of-way of Trush Boulevard (APPENDIX B-1). The new water main will include gate valves, hydrants, and service connections.

Water services for each participating property will be extended to the highway right-of-way with a shutoff valve. The design and construction of the service connection to; and the plumbing modification within; each building, will be the obligation of the private property owner. According to the NYSDOH and Building Code requirements, all wells must be physically disconnected from plumbing that is part of a public water supply, unless proper backflow prevention is provided. Pressure boosting and backflow prevention may be required for individual users to satisfy fire flow and Building Code requirements.

Upon completion, the Village of Cazenovia will operate and maintain the water system by Inter-Municipal Agreements with the Towns of Cazenovia and Nelson. The cost of operation and maintenance are included in the water usage costs (see Section 7). Water meters will be installed in each building or in meter pits near the right-of-way.

There are no known significant environmental conditions that will impact the project (APPENDIX D), and no impacts are anticipated from the proposed project (APPENDIX N). Negative declarations were previously adopted by each Town.

The project will expand potable water and fire service to 45 commercial and residential properties, eliminating at least 6 regulated non-community water systems, and over 25 private wells, many of which have quality and quantity issues. The Madison County Department of Health supports the project (APPENDIX H).

5. WATER USAGE

As noted in the previous section, the current water usage in the proposed service area is estimated to be 25,000 gpd, or 25 gpm average. With the availability of public water, a 25% - 50% increase in potential usage is possible from current users. In addition, the 16 parcels of vacant commercial and residential land within the service area may be developed, adding up to an estimated 15,000 gpd of additional water use. Therefore, the design flow for the proposed water system will be 50,000 gpd or 40 gpm average, and 75 gpm peak use.

In accordance with Ten State Standards, the proposed 100,000-gallon storage tank is sized to provide 2 days of volume for daily use and provide 1 hour of fire flow at 1,500 gpm.

Additional storage volume may be needed if the water service area is extended in the future, or a heavy water user is added to the service area.

6. PROJECT COSTS and FINANCING

The project is anticipated to cost $2.85 million (APPENDIX E). The Towns of Cazenovia and Nelson have obtained a combination of grants from New York State Environmental Facilities Corp (NYSEFC) and Northern Borders totaling $1.79 million (APPENDIX P). The remaining project cost of $1.06 million will be financed through a 30-year market rate loan from EFC.

Project costs will be borne by the benefitting property owners within the prescribed Water District. Districts will be formed by the Towns of Cazenovia and Nelson in accordance with applicable statutes of New York State Town Law and an Intermunicipal Agreement will govern the operation and shared financing of the District.

Participants in the water district will be proportionately assessed the financing/debt reduction costs of the remaining $1.06 million project cost over a 30-year period, based on assessed property value (APPENDIX F). The annual financing cost per $1,000 of assessed value is estimated to be $3.10/$1,000 per year, based on a 4% interest rate for 30 years (APPENDIX E). Actual financing terms may vary (see also Section 7).

The Village of Cazenovia will charge water users in the district a rate of $4.23 per 100 cubic feet of water consumed.

Operation and maintenance costs of the proposed system are included in the Village's water usage rates.

The project will include the installation of water services for each participating property to the edge of the public road right-of-way. The cost of extending the water service to the building, plumbing modifications within the building, any meter pits, booster pumps, fire suppression system, or backflow prevention will be the responsibility of the individual property owner (see also Section 7).

7. COSTS TO TYPICAL PROPERTIES

The term "typical property" is defined by statute as a benefitted property within the proposed district having an assessed value that approximates the assessed value of the "mode" (i.e., the most frequently occurring assessed value as shown on the latest completed assessment) of the benefitted property within the proposed district that will be required to finance the cost of the proposed improvements. The term "typical one or two-family home" means a benefitted property improved by a one or two-family dwelling and having an assessed value that approximates the assessed value of the mode of the benefitted property improved by a one or two-family dwellings situated in the district that will be required to finance the cost of the proposed improvements. Upon examination of the various parcels include in the District, there are no "mode" assessed values to meet the definition of the "typical property" or the "typical one or two-family home." [Therefore, the "cost of the district to the typical property" was calculated using a blend of the median assessed value and mean assessed value of all the parcels within the Water District and the "cost to the district to the typical one-family home" was similarly calculated using a blend of the median assessed value and mean assessed value of the parcels improved by a one-family home within the Water District as it was determined that this would most closely approximate the assessed value of the mode as defined by statute and guidance documents from the NYS Comptroller.] The analysis follows:

A. Financing Costs

1. Residential (one-family home)

a.	Assessed value range = $79,000 to $295,000		
b.	Number of properties		= 11
c.	Mean assessed value		= $166,372
d.	Median assessed value	(APPENDIX Q)	= $160,000
e.	Assessed value used for typical one-family home		= $163,186
f.	Annual financing cost for the typical one-family home		= $ 506
g.	Maximum annual financing cost for value of $295,000		= $ 915

2. Overall District

a.	Assessed value range = $2,600 to $3,996,000		
b.	Number of properties		= 45
c.	Mean assessed value		= $440,673
d.	Median assessed value	(APPENDIX Q)	= $170,000
e.	Assessed value for typical property		= $305,336
f.	Annual financing cost for typical property		= $ 947
g.	Maximum annual financing cost for value of $3,996,000		= $ 12,387

B. Hook-up Costs

The cost of privately-constructed connections to the water services that are to be installed as part of the project will vary greatly, depending on the size and length of the service, site conditions, and existing plumbing. For a typical single-family residence, the average hook-up cost is estimated to be $2,000. For a typical commercial property the cost is estimated to be $5,000, plus approximately $4,000 for backflow prevention, if required. For commercial properties also installing water-based fire suppression systems, the hook-up cost will be significantly higher.

C. Water Usage Costs

The Village of Cazenovia will sell water to the proposed District at rate of $4.23/100 cubic foot of water (2017 rate – subject to change) which includes operation and maintenance. For a typical single-family home using 200 gpd, the annual cost would be approximately $420/year. For a typical district property, the average water use is estimated to be 450 gpd, with an annual water use cost of approximately $945/year.

D. Operating and Maintenance Costs

The operating and maintenance costs of the proposed water system that will be incurred by the Village of Cazenovia are incorporated in and recovered through the water usage fees. There are no other costs associated with the project.

E. Total Costs to Typical Properties (financing cost plus water use)

Typical One-family home - $506 + $420 = $ 926 per year

Typical District property - $947 + $945 = $1,892 per year

8. ALTERNATIVES

A. Other Sources of Public Water

The other sources of public water are Onondaga County Water Authority (OCWA), located approximately 9 miles west and north, or the Village of Morrisville, located approximately 8 miles east.

B. Other Sources of Groundwater

Given the poor quality and quantity of the existing wells within the service area, it is not likely that a reliable source of groundwater producing more than 100 gpm would be found within the project boundary.

A possible supplemental source of groundwater might be found approximately 1 mile east of the service area in the Chittenango Creek Valley aquifer that is currently utilized by individual wells in the Hamlet of Nelson. However, nearly all wells in this aquifer experience high sulfur levels, which require treatment for potable use.

C. Alternate Project Size

1. Reduced Project Size

   A smaller project/service area would modestly reduce distribution infrastructure costs, but not significantly reduce the soft costs, or the cost of necessary pumping and storage.

   This would result in higher debt reduction costs for the remaining properties in the smaller service area. In addition, the excluded properties with poor water conditions would not receive relief from the project.

2. Increased Project Size

   APPENDIX L depicts a potential expanded project area, with its associated costs. However, the residents of Nelson Heights and the Hamlet of Nelson have not voiced a significant interest in procuring public water at this time.

3. Do Nothing

   The No Action Alternative would continue to limit growth and suppress property values that would result from continued dependence on unreliable well sources for the district's residents, with no fire protection.

9. CONCLUSION

Implementation of the Cazenovia/Nelson Route 20 Water District will provide properties along Route 20 and within the Trush Business Park with access to a reliable supply of potable water, and fire service at a reasonable and affordable annual cost.

The project will encourage new development, increase property values, reduce fire insurance rates, and provide tax base expansion, while eliminating non-community water systems and individual wells with health risks from contaminated drinking water.

RESPECTFULLY SUBMITTED,
DUNN & SGROMO ENGINEERS

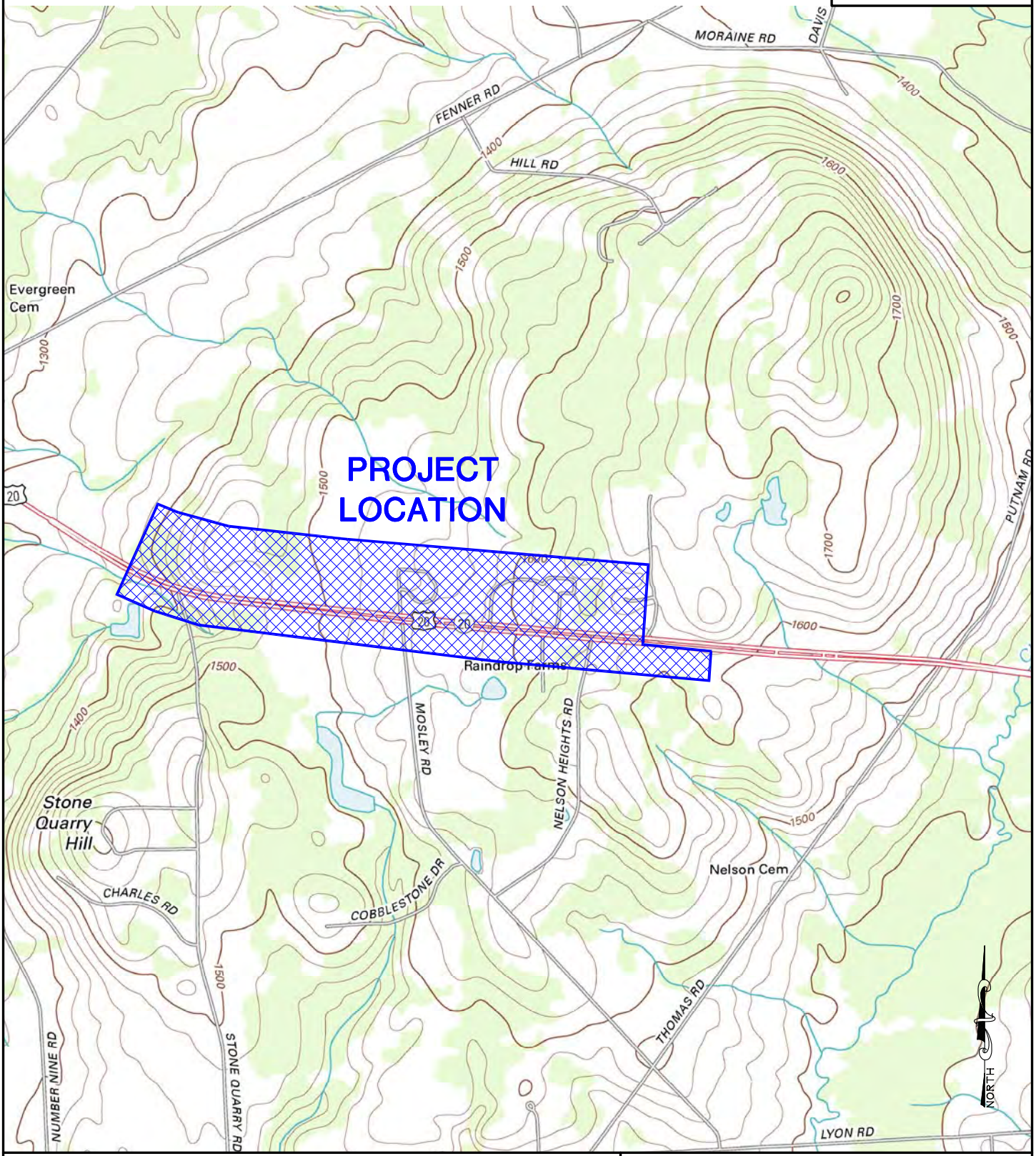
John C. Dunkle, P.E.

JCD/lb

APPENDIX A

USGS
Location Plan

APPENDIX A



DUNN AND SGROMO ENGINEERS
E. SYRACUSE, NEW YORK
5800 HERITAGE LANDING DRIVE (315)449-4940 (315)449-4941 FAX

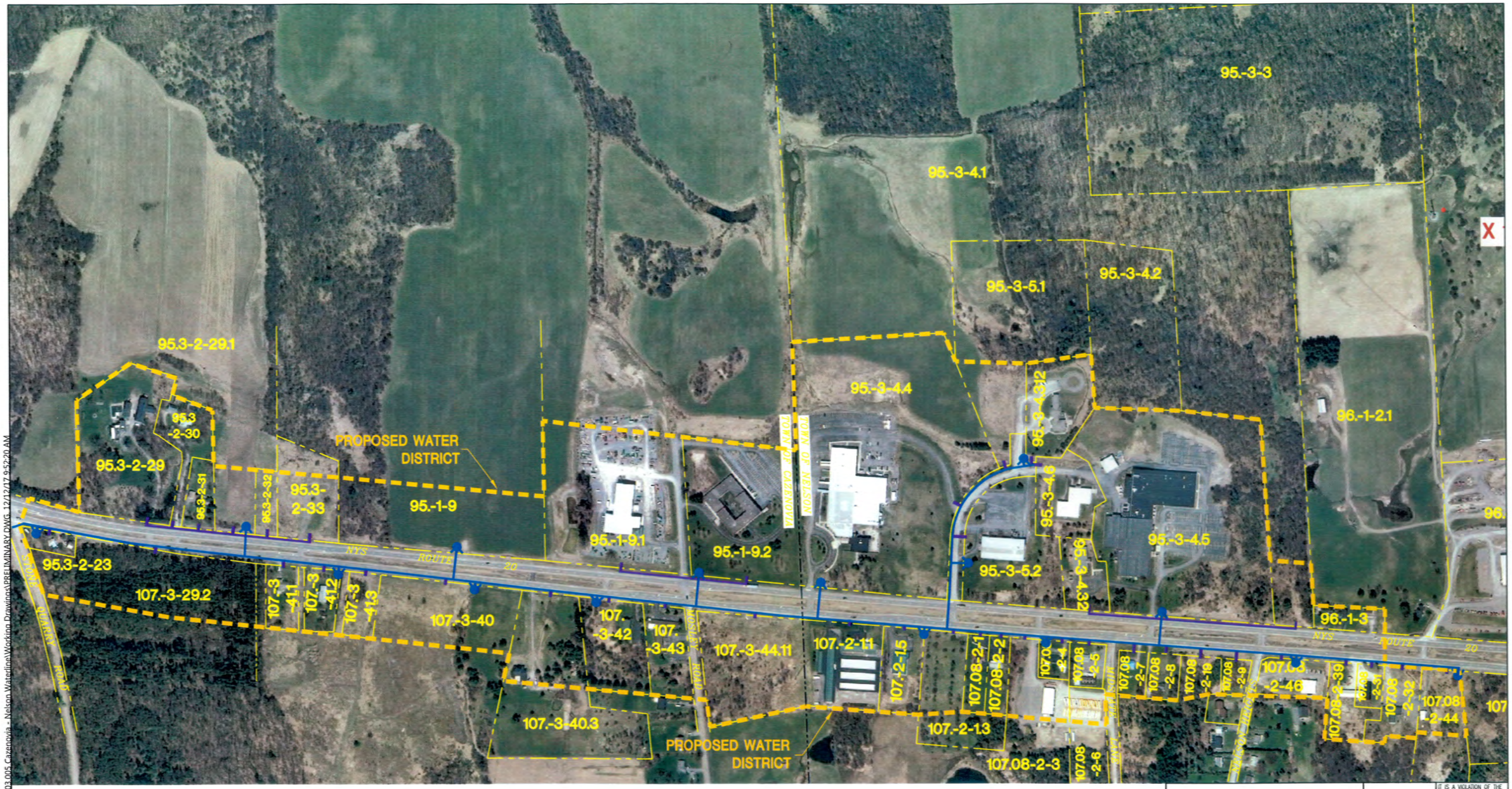
TOWNS OF CAZENOVIA/NELSON
MADISON CO., NY

CAZENOVIA/NELSON ROUTE 20 WATER DISTRICT

USGS LOCATION PLAN
NOT TO SCALE

APPENDIX B

Water District Plans



1 APP.B1 SITE PLAN
SCALE: 1" = 250'

GRAPHIC SCALE
250 0 125 250 500
(IN FEET)

NORTH

DUNN & SGROMO ENGINEERS
E. SYRACUSE, NEW YORK
5800 HERITAGE LANDING DRIVE (315)449-4940 (315)449-4941 FAX

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER A LICENSED, REGISTERED ENGINEER, TO ALTER AN ITEM ON THIS DOCUMENT IN ANY WAY.

NO.	DATE	REVISION	BY
1	12.12.17	REV. BOUNDARY	MDW

TOWNS OF CAZENOVIA/NELSON
MADISON COUNTY, NY
CAZENOVIA/NELSON ROUTE 20 WATER DISTRICT

WATER DISTRICT PLAN

SCALE:	AS NOTED
DESIGNED BY:	JCD
DRAWN BY:	WRF/MDW
CHECKED BY:	JCD
FILE NO.:	403.005
DATE:	05.15.2017
DWG. NO:	APPX B1

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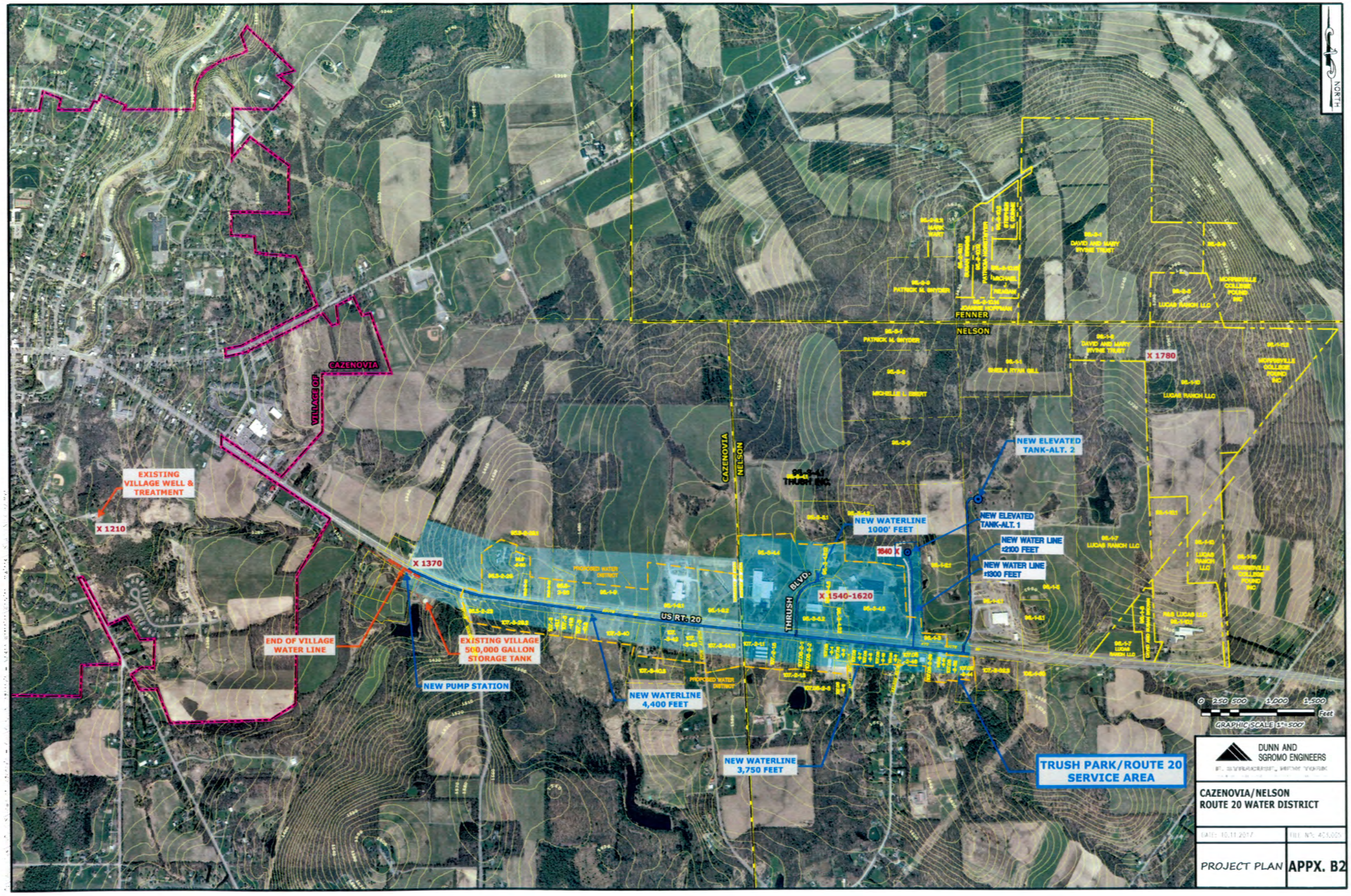

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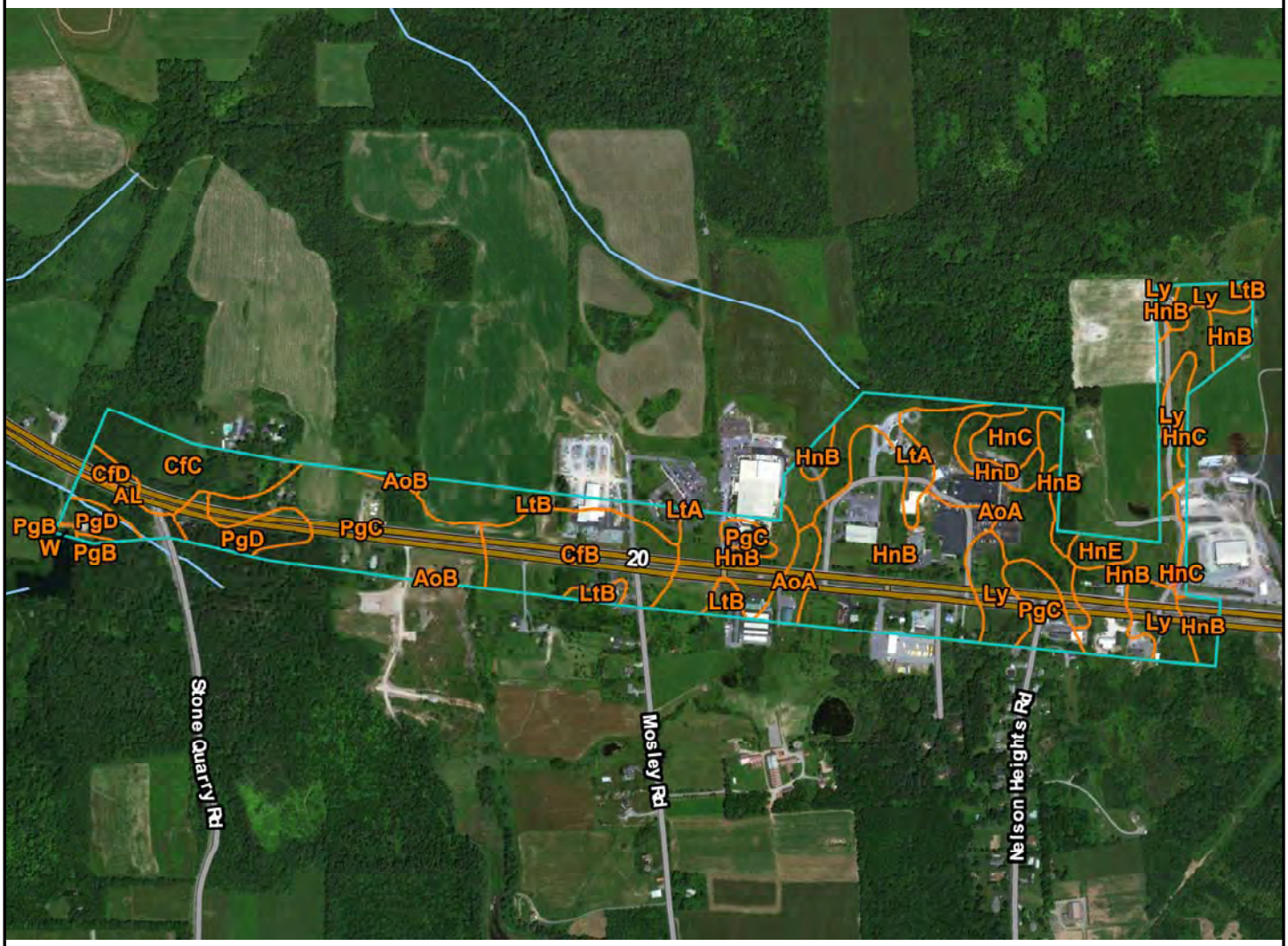
APPENDIX C

Soil Maps

APPENDIX C



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TOWN OF CAZENOVIA/NELSON
MADISON CO., NY

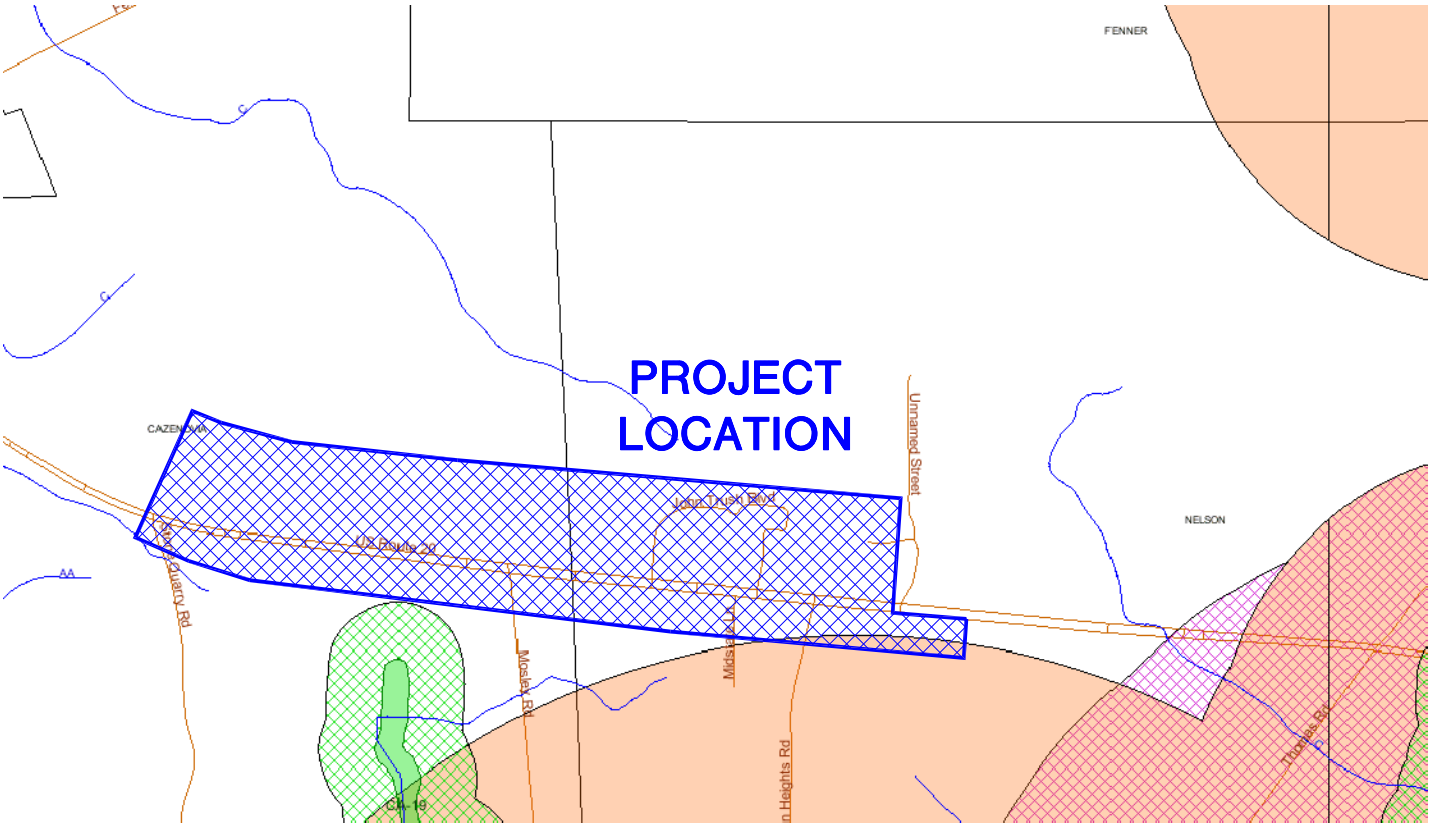
CAZENOVIA/NELSON ROUTE 20 WATER DISTRICT

SOIL MAP
NOT TO SCALE

APPENDIX D

NYSDEC
Environmental Map

APPENDIX D



LEGEND

- Classified Water Bodies
- Unique Geological Features
- Classified Water Bodies
- State-Regulated Freshwater Wetlands
- Wetland Checkzone ?
- Rare Plants and Rare Animals
- Significant Natural Communities
- Natural Communities Vicinity ?
- Background Map
- Adirondack Park Boundary
- Counties

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TOWN OF CAZENOVIA/NELSON
MADISON CO., NY

CAZENOVIA/NELSON ROUTE 20 WATER DISTRICT

NYSDEC ENVIRONMENTAL MAP
NOT TO SCALE

APPENDIX E

Preliminary Budget

Preliminary *Draft* Project Budget

Town of Cazenovia/Town of Nelson

Route 20 Water District

(from Village tank to Lucas property serving 45 properties)

Revised December 12, 2017

1. <u>Preliminary Project Cost</u>:

10,500 feet of water line @ $80/foot (includes hydrants, valves and services to right-of-way)	=	$ 840,000
Pump Station	=	$ 300,000
100,000-gallon tank	=	$ 850,000
Contingency	=	$ 450,000
Soft Costs	=	$ 350,000
		$2,790,000
	USE	***$2.85 million***

2. <u>Grants</u> (EFC[$1,590,000] and NB [$200,000]): = $1.790 million

3. <u>Potential Annual Financing Costs for remaining $1.06 million Project</u>:

			Cost/$1,000 assessed value/year with <u>$19.8 million total</u>
30-year term @ 4%* interest (.0578)	$61,268	=	$ 3.10

4. <u>Other Optional Costs</u>:

Water Use – $4.23/100 cubic feet of water (2017 rate) (approximately $420/year for typical residential use, and $1,050/year for typical commercial use)

Private Hook-up Cost – $1,000 and up (estimated to be $2,000 for typical residential property, and $9,000 for typical commercial property with backflow prevention)

****Estimated EFC market rate financing for 2018/2019, at the time of loan closing.***

NOTE: ***Project costs will be refined following detailed evaluation and design.***

APPENDIX F

Participating Properties

TOWN OF CAZENOVIA

ROUTE 20 WATER DISTRICT

October 28, 2016
Revised December 12, 2017

Parcel #	Name	Address	Assessment	Type	Approximate Range of Individual Annual Financing Costs for $1.06 Million 30-yrs @ 4% ($3.10/$1,000)
95.-1-9	Cazenovia Restoration Corp.	Route 20 East	$ 165,000	Vacant Land	$ 515
95.-1-9.1	Love-Frazee Associates, LLC	Route 20 East	$ 725,000	Farm Equipment Sales/Repair	$2,250
95.-1-9.2	Ten Albany, LLC	1 Remington Park Drive	$3,200,000	Offices	$9,920
95.3-2-23	Cochrane, Terence	2500 Route 20 East	$ 105,000	Single-family Home	$ 330
95.3-2-29	Romagnoli, Mary Beth	2527 Route 20 East	$ 560,000	Single-family Home/Event Center	$1,740
95.3-2-29.1	Romagnoli, Mary Beth	Route 20 East	$ 175,900	Vacant Land	$ 550
95.3-2-30	Moore, Timothy A	2537 Route 20 East	$ 250,000	Single-family Home	$ 775
95.3-2-31	Liberatore, Joseph A	2543 Route 20 East	$ 141,000	Single-family Home	$ 440
95.3-2-32	Romagnoli, Mary Beth	Route 20 East	$ 2,600	Vacant Land	$ 10
95.3-2-33	Cazenovia Commons, LLC	2567 Route 20 East	$ 55,000	Vacant Land	$ 175
107.-3-29.2	PT Holdings of Cazenovia, LLC	Stone Quarry Road	$ 144,000	Vacant Land	$ 450
107.-3-40	PT Holdings of Cazenovia, LLC	Route 20 East	$ 111,200	Vacant Land	$ 345
107.-3-40.3	Macheda, Richard J	2628 Route 20 East	$ 295,000	Single-family Home	$ 915
107.-3-41.1	Travis, Stephen H	2560 Route 20 East	$ 165,000	Single-family Home	$ 515
107.-3-41.2	Yoder, Sandra D	2570 Route 20 East	$ 160,000	Single-family Home	$ 500
107.-3-41.3	PT Holdings of Cazenovia, LLC	Route 20 East	$ 31,600	Vacant Land	$ 100
107.-3-42	Cazenovia 2652, LLC	2652 Route 20 East	$ 185,000	Commercial/Office	$ 575
107.-3-43	Cherry Valley Development Inc.	2662 Route 20 East	$ 295,000	Commercial/Office	$ 915
107.-3-44.11	Skanda Farms, LLC	Route 20 East	$ 41,100	Vacant Land	$ 130
			$6,807,400		

19 Properties at: ***8 Vacant*** ***6 Residential*** ***5 Commercial***

TOWN OF NELSON

ROUTE 20 WATER DISTRICT

October 28, 2016
Revised December 12, 2017

Parcel #	Name	Address	Assessment	Type	Approximate Range of Individual Annual Financing Costs for $1.06 Million 30-yrs @ 4% ($3.10/$1,000)
95.-3-4.1	Trush Inc.	Route 20	$ 74,900	Vacant Land	$ 235
95.-3-4.4	Marquardt Switches, Inc.	2711 Route 20	$3,996,000	Manufacturing	$12,390
95.-3-4.5	Dielectric Labs Inc	2777 Route 20	$3,300,000	Manufacturing	$10,230
95.-3-4.6	Trim Tronics Inc.	3066 Route 20	$ 539,200	Manufacturing	$ 1,675
95.-3-4.312	Community Memorial Hospital	3045 John A Trush Jr. Blvd	$1,033,000	Medical Facility	$ 3,205
95.-3-4.32	Cazenovia Children's	2757 Route 20	$ 606,200	Daycare Center	$ 1,880
95.-3-5.1	Trush Inc.	3018 John A Trush Jr. Blvd	$ 11,000	Vacant Land	$ 35
95.-3-5.2	Pelco Properties Inc.	2747 Trush Boulevard	$ 147,500	Manufacturing	$ 460
96.-1-3	Lamb, Michael & Steven	2827 Route 20	$ 207,700	Single-family Home	$ 645
107.-2-1.1	Walking Partners, LLC	2684 Route 20	$ 535,500	Self-Storage Facility	$ 1,660
107.-2-1.3	Markol Real Estate Partnership	Moseley Road	$ 60,000	Vacant Land	$ 190
107.-2-1.5	New Venture Assets LLC	2708 Route 20	$ 240,000	Auto Parts Store	$ 745
107.8-2-1	Holmes, Koennecke	2750 Route 20	$ 396,500	Veterinarian	$ 1,330
107.8-2-2	Markol Real Estate Partnership	Route 20 East	$ 131,500	Single-family Home	$ 410
107.8-2-3	Cazenovia Central School	2760 Route 20	$ 283,600	Bus Garage	$ 880
107.8-2-4	Marion, John E.	2762 Route 20 East	$ 170,000	Single-family Home	$ 530
107.8-2-5	Hughes, Parnell J. & Sandra	4157 Midstate Lane	$ 274,100	Storage & Retail	$ 850
107.8-2-7	Bergman, Jody P.	2776 Route 20 East	$ 79,900	Single-family Home	$ 250
107.8-2-8	LaFever, Howard B.	2778 Route 20	$ 125,000	Single-family Home	$ 390
107.8-2-9	Moss, Jeffrey R. & Sterling, Elizabeth	Nelson Heights	$ 4,700	Vacant Land	$ 15
107.8-2-19	Windstream New York, Inc.	Midstate Lane	$ 26,200	Vacant Land	$ 85
107.8-2-31	Automatic Utilities	2830 Route 20 East	$ 195,100	Service Facility	$ 605
107.8-2-32	Cazenovia Universal Truth	2836 Route 20	$ 170,000	Meeting Space	$ 530
107.8-2-39	Automatic Utilities	Route 20	$ 24,000	Vacant Land	$ 75
107.8-2-44	Irwin, James E.	Route 20	$ 33,500	Vacant Land	$ 105
107.8-2-46	Nelson Recamp Realty Inc.	2808 Route 20 East	$ 357,800	Auto Repair/3 Efficiency Apts.	$ 1,110
			$13,022,900		

26 properties at*: *7 Vacant* *5 Residential* *14 Commercial

APPENDIX G

Village of Cazenovia
Letter

VILLAGE OF CAZENOVIA

August 24, 2016

John Dunkle, P.E.
Dunn & Sgromo Engineers
5800 Heritage Landing Drive
East Syracuse, NY 13057

Re: Cazenovia/Nelson Route 20 Water District

Dear John:

Please be advised that the Village of Cazenovia's water supply system has sufficient capacity and volume to meet the anticipated water demand from the proposed Route 20 Water District in the Towns of Nelson and Cazenovia.

Currently, the Village's wells supply more than 500 gallons per minute (gpm) of flow, while Village water usage averages 200 gpm. The projected demand for the Route 20 Water District is not expected to exceed 75 gpm.

Very truly yours,

William Carr, Administrator
Village of Cazenovia Public Works

cc: Mayor Kurt Wheeler, Village of Cazenovia
Trustee David Porter, Village of Cazenovia
Supervisor William Zupan, Town of Cazenovia
Supervisor Roger Bradstreet, Town of Nelson

APPENDIX H

Madison County Health Department Letter

MADISON COUNTY
DEPARTMENT *of* HEALTH

Eric Faisst, Director of Public Health *Dr. John B. Endres, President of Board of Health*

August 30, 2016

Mr. William Zupan, Town Supervisor
Town of Cazenovia
7 Albany Street
Cazenovia, New York 13035

Mr. Roger Bradstreet, Town Supervisor
Town of Nelson
4085 Nelson Road
Cazenovia, New York 13035

Re: Proposed Cazenovia / Nelson Water District – Support for extension of Village of Cazenovia PWS

Dear Sirs,

The Madison County Department of Health (MCDOH) is providing this correspondence in support of the proposed development of the Cazenovia / Nelson Water District, and extending public water from the Village of Cazenovia Public Water System to serve the various businesses and residential properties located along the NYS Route 20 corridor. The proposed water district extends east of the Village and will also serve those businesses located in Thrush Park that currently secure water from individual non-community public water systems.

The extension of the Villages municipal water system to serve Thrush Park would effectively consolidate the non-community water systems (NCWS) serving the Cazenovia Children's House (a daycare facility), the engineering services firm GHD, the Cazenovia Senior Services (an adult care facility), and manufacturing businesses Knowles Inc. (formerly Dielectric), Marquardt Switches and Pelco Inc. Securing water service from the Village of Cazenovia would eliminate these large employers and care facilities from relying on the on-site water systems they currently utilize and from the operational requirements associated with meeting the provisions of Part 5-1 of the NYS Sanitary Code for NCWS. The Village of Cazenovia public water system serves a population of >3,300 persons through 900 service connections, and retain a qualified staff of certified water operators and administrative personnel. The consolidation of these NCWS's with the Village PWS would effectively and more efficiently provide the technical, managerial and financial capacity necessary to insure compliance with the Sanitary Code requirements for public water systems.

In addition to the regulated NCWS's serving Thrush Park, this Health Department has identified a number of public and private facilities along Route 20 and located within the proposed water district which have been determined as likely meeting the definition of a public water system as defined in 10 NYCRR Part 5-1.1(ay). This includes the Cazenovia School District Transportation facility, which employs >25 persons and operates five or more days per week for 26 or more weeks per year. Two other properties are commercial plaza developments with on-site water systems that provide water to five or more service connections, also meeting the PWS definition established in Part 5-1. These facilities will likely be required to meet PWS requirements, including provisions for disinfection treatment and source water contaminant testing, following administrative proceedings by this Health Department.

Enacting the proposed water district would enable these facilities to be served by the Village PWS and avoid having to install treatment equipment and being regulated as non-community water systems by this Health Department, and further ensure a more effective and efficient compliance with drinking water standards.

The proposed water district would be capable of serving a number of properties known to be served by inadequately protected and contaminated well sources, including the site of a proposed bakery business found by this Health Department in 2015 to be served by a dug well containing dead and decaying rodents. (see attached photo) This system tested positive for E Coli, deemed a violation of drinking water standards.

The regulated NCWS's that serve the Cazenovia Senior Services and the Cazenovia Children's Center and expected to be included in the proposed water district provide disinfection treatment prompted by the repeated detection of total coliform within their respective well sources. The presence of total coliform at these two separate sources suggests similar microbiological contamination is likely to be present in the groundwater that serves other properties within Thrush Park and along the proposed Rt 20 water district. Replacing the sources now serving these properties with public water from the Village of Cazenovia ensure the patrons of these facilities and the residential properties to be included in the water district be provided safe, reliable potable water.

Arsenic, an inorganic contaminate, has been detected at elevated levels in all of the NCWS well water sources serving the businesses located at Thrush Park and noted herein. Arsenic levels were found to range from an average high of 7.6 ppb to a maximum contaminant level (MCL) exceedance of 16.0 ppb in testing for these inorganic compounds at these facilities. The exceedance of the MCL of 10.0 ppb prompted the installation of an arsenic removal system at one of these NCWS's in 2011. Eliminating these sources and providing Village water to the proposed water district would effectively eliminate the risk presented by high arsenic levels, which has not been detected in the Village source water per testing for inorganic chemicals completed in 2015.

Source water testing of the Thrush Park NCWS's has detected various inorganic and principal organic compounds present in the various water sources, but not above MCL limits.

The proposed water storage tank would provide the Village of Cazenovia with additional water storage volume and a vital redundant component in the event one of the existing Village storage facilities must be taken out of service. This new storage facility will further provide important fire protection to the benefitting water district properties, including the Thrush Park businesses that lack sufficient water storage and pressures to sustain firefighting capabilities.

The proposed project, consisting of the installation of 16,500 feet of water transmission main, hydrants and appurtenances, pump station and storage tank, would further provide for extending public water service to the hamlets of Nelson and Nelson Heights in the future, communities that would greatly benefit from the reliable and safe delivery of municipal water and enhanced fire protection.

The Village of Cazenovia PWS is currently served by two artesian wells located in a common aquifer adjacent to their treatment facilities. In accordance with the Recommended Standards for Water Works as referenced in the New York State Code of Rules and Regulations (NYCRR) Subpart 5-1.22, a minimum of two groundwater sources is needed to serve a community water system, with preference given to locating the second or redundant source in a different aquifer. This project offers the potential for the development of an alternative water source located in a different aquifer that would provide the Village PWS with a redundant source supply should the current well field ever be adversely affected from contamination. The project would similarly address the lack of a second water source that poses a risk to a number of those NCWS's now operating in the proposed water district.

Proposed Cazenovia / Nelson Water District 08/30/2016

The proper treatment and delivery of drinking water is of vital importance to this and any community. Based on the information provided above and records on file, the Madison County Department of Health strongly supports the Town's efforts to secure the funding necessary to ensure the delivery of safe, reliable drinking water to its residents and businesses. We believe the proposed water district and water infrastructure project would improve the viability of the businesses here that are important to the economy of the region, and will eliminate the risk's posed to residents within the NYS Route 20 corridor who now rely on individual water systems. Please feel free to contact this office with any questions you may have or for any further assistance in regards to this matter.

Sincerely yours,

Geoffrey Snyder
Director of Environmental Health

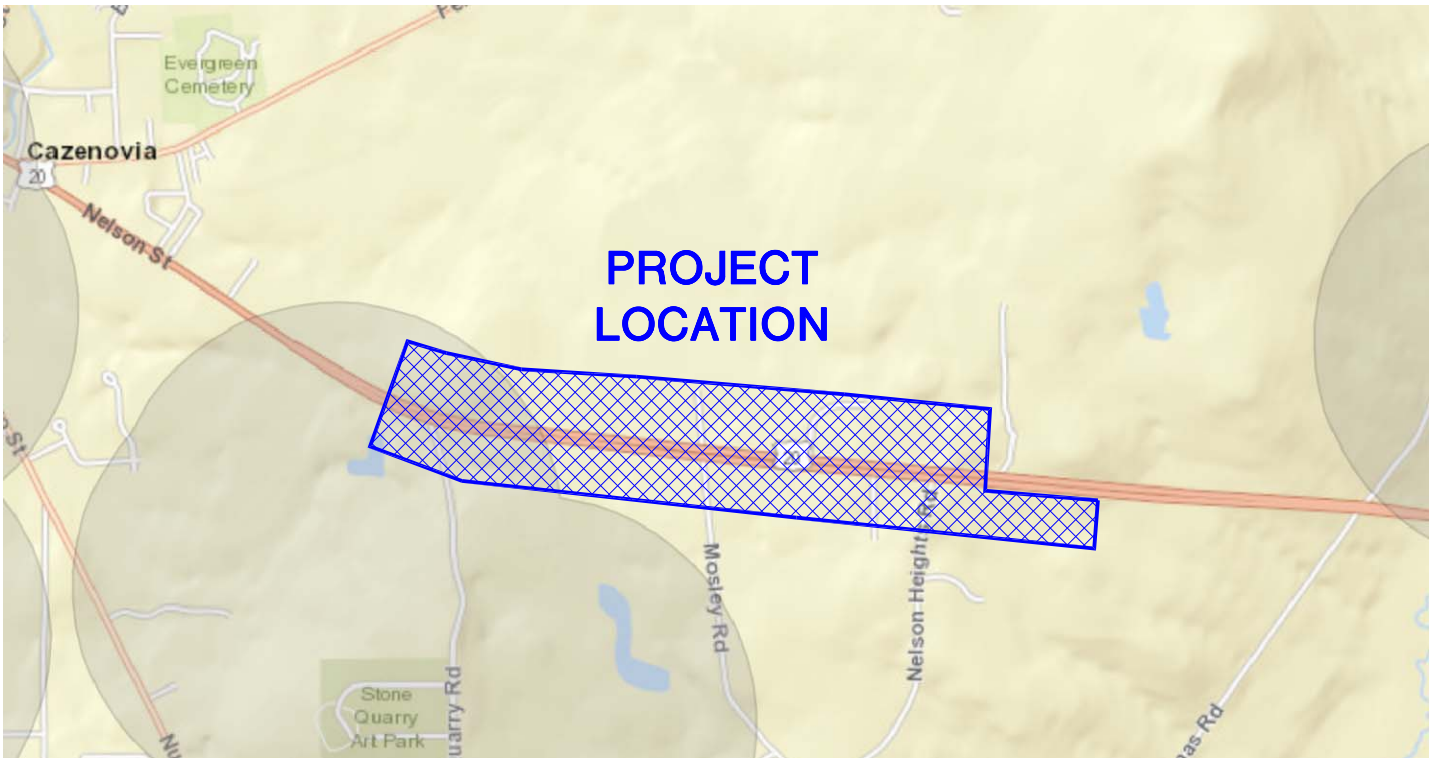
w/ encl; IWS Photo

Cc: Mr. John Dunkle, Dunn and Sgromo Engineers
Mr. John Strepelis PE, Regional Office NYSDOH
Mrs. Erin Ingles PE, Regional Office NYSDOH
Mr. William Carr, V/ Cazenovia PWS

APPENDIX I

Archeological Sensitive Areas Map

APPENDIX I



NORTH

DUNN AND SGROMO ENGINEERS
E. SYRACUSE, NEW YORK
5800 HERITAGE LANDING DRIVE (315)449-4940 (315)449-4941 FAX

TOWN OF CAZENOVIA/NELSON
MADISON CO., NY

CAZENOVIA/NELSON ROUTE 20 WATER DISTRICT

ARCHEOLOGICAL SENSITIVE AREAS MAP
NOT TO SCALE

APPENDIX J

Well Contamination Records

MADISON COUNTY BOARD OF SUPERVISORS

JOHN M. BECKER
Chairman
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County Administrator
CINDY URTZ
Clerk

138 N. Court St., PO Box 635
Wampsville, NY 13163
Phone: 315/366-2201
Fax: 315/366-2502

June 6, 2016

John Dunkle
Dunn & Sgromo Engineers
5800 Heritage Landing Drive
E Syracuse, NY 13057
jdunkle@dunnandsgromo.com

Sent via Email

Re: FOIL Request

Dear Mr. Dunkle:

In response to your request received on June 1, 2016 under the New York State Freedom of Information Law (FOIL) for a copy of documents pertaining to detections and/or water related issues at regulated facilities located on Rte. 20 East from Thrush Park to Erieville Road in the Town of Nelson, including any water quality data on individual homes or non-regulated businesses, please find enclosed the records requested.

If you have any questions, please contact me.

Sincerely,

Mark Scimone
Records Access Officer

MS/cjc

Enc.

Regulated Water Systems in Rt 20 WD

6/6/16

Name	Type	Treatment	Detections	Arsenic Range
[redacted]	transient non-community	chlorination	2000 Chloroform, 1,2 Dichloropropane	2000-2016 1.89-6.2 ppb
			2004 Total Coliform Positive, E.coli negative	
			2007 Total Coliform Positive, E.coli negative	
[redacted]	non-transient, non-community	UV Light	2005 Aldicarb sulfone	2001-2016 5.0-8.25 ppb
			2005 Methomyl	
			2006 Total Coliform Positive, E.coli negative	
			2006 Total Coliform Positive, E.coli negative (surveillance)	
[redacted]	non-transient, non-community	UV Light	2008 Cyanide	2002-2015* 1.75-16.0 ppb
[redacted]	non-transient, non-community	UV Light	2001 Bromomethane	2001-2016 4.71-6.3 ppb
			2007 Chloromethane	
			2010 (Di) ethylhexylpthalate	
[redacted]	non-transient, non-community	Disinfection Waiver	2012 Total Coliform Positive, E.coli negative	2001-2016 4.71-6.3 ppb
			Elevated Hardness	
[redacted]	non-transient, non-community	Disinfection Waiver	2010 Methyl Chloride	2004-2010 2.0-2.3 ppb

[redacted]-Potential regulated system. At first glance facility may have more than five service connections.

* Arsenic removal system installed 2011

1-16-03-1

APPENDIX K

O'Brien & Gere Study

DRAFT REPORT

Village of Cazenovia
Water System Capacity Evaluation

Metropolitan Development Association
of Syracuse and Central New York, Inc.

July 2000

2628/25848

DRAFT REPORT

Village of Cazenovia
Water System Capacity Evaluation

Metropolitan Development Association of Syracuse and Central New York, Inc.

Michael S. Kolceski, P.E.
Vice President

July 2000

O'BRIEN & GERE
ENGINEERS, INC.

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1. Introduction

1.1. Background

Trush Park is a 258-acre office and industrial complex located on State Route 20 approximately 1-1/2 miles east of the Village of Cazenovia, in the Towns of Cazenovia and Nelson in Madison County, New York. The Park is presently developed to approximately 25% of its ultimate capacity. Current water consumption at the Park is approximately 15,000 - 18,000 gallons per day, and is achieved using multiple on-site wells each of relatively small capacity. The future water requirements for a fully developed Park have been estimated by Trush to be up to approximately 100,000 gallons per day. A primary factor limiting further development of the Park is the lack of available potable water. Trush, Inc. has been evaluating alternatives for additional water supply including: (1) further development of on-site ground water supply, (2) ground water supply and transmission from the Hamlet of Nelson, and (3) connection to the Village of Cazenovia municipal water system. Based on evaluations conducted to date, connection to the Village system appears to be the preferred alternative, if sufficient capacity is available and pending negotiations between Trush, Inc. and the Village.

1.2. Purpose and scope

The purpose of this evaluation is to assess the capacity of the Village water system (source, treatment and transmission/distribution) to supply water to Trush Park, in an amount up to 100,000 gallons per day. It is anticipated that the Village will utilize the findings of this report in connection with its evaluation of a request to provide water to Trush Park.

This report is prepared in connection with a Letter of Authorization dated February 18, 2000, issued by O'Brien & Gere and accepted by the Metropolitan Development Association of Syracuse and Central New York. Funding assistance for this evaluation is being provided by the Metropolitan Development Association.

1.3. Overview of existing Village water facilities

The Village utilizes ground water as its municipal water supply. Ground water is pumped from three wells located in a well field east of Chenango Street in the south side of the Village, through an existing water treatment plant, and into the Village water distribution system. The water treatment plant is located at the site of the well field, and provides softening, chlorination, and chemical addition for corrosion control.

The water distribution system consists of pipelines between 4" and 12" in diameter; existing storage consists of a 300,000 gallon elevated tank located off Pine Lane on the north side of the Village, and a 500,000 gallon ground level storage tank located off Stone Quarry Road east of the Village. These tanks provide storage for normal, emergency and fire demands, and serve to maintain a hydraulic gradient of approximately 1388 feet (USGS).

Additional details of these facilities will be provided in a subsequent section of this report. A location plan, denoting primary Village water facilities, is included in Figure 1.

2. Population and water requirements

2.1. Population

O'Brien & Gere compiled historical population data for the Village of Cazenovia for the years 1960, 1970, 1980 and 1990, as published by the U.S. Bureau of the Census[10,11]. O'Brien & Gere also obtained an updated "intercensal population estimate" from the Madison County Planning Department, as of July 1, 1998, which is the most recent data available. Historical and projected population are summarized as follows:

Table 2.1 *Historical and projected service population*

Year	Population	Source
1960	2,584	U.S. Bureau of the Census
1970	3,031	U.S. Bureau of the Census
1980	2,599	U.S. Bureau of the Census
1990	3,007	U.S. Bureau of the Census
1998	2,982	Madison County Planning Department
2000	3,000	Estimated by O'Brien & Gere
2010	3,150	Estimated by O'Brien & Gere
2020	3,300	Estimated by O'Brien & Gere

Future service population is estimated based on 10% growth (*i.e.*, 300 persons) in the next 20 years, which appears reasonably conservative based on comparison with historical population patterns. This increase in service population may be the result of an increase in enrollment at Cazenovia College, annexation by the Village of areas surrounding the present corporation limits, service to new water district(s) located outside the Village, or a combination of these or similar occurrences. This increase in population does not specifically consider additional service population attributable to a decision by the Village to provide water service to Trush Park.

2.2. Village water requirements

Monthly water production and consumption data was provided by the Village for calendar years 1990 through 1999, and was obtained from previous reports[2,3] for calendar years 1970 and 1980. This data is tabulated in Appendix A, and is graphically presented in Figure 2. Annual average daily per capita water production varies between approximately 96 and 104 gallons per day during this period, based on service population data presented above. For the ten-year period encompassing calendar years 1990 through 1999, the following summarizes water production:

Table 2.2 *Current Village water production, 1990-1999*

	gal/day	peaking factor
Minimum month	200,200	0.65
Average day	310,100	1.00
Maximum month	389,400	1.26
Peak day (7/31/99)	497,000	1.60

This ten-year period was considered in its entirety because service population was generally stable during this period. The peaking factor represents the ratio between a given production rate and the annual average rate.

Based on billing records provided by the Village, unaccounted for water (*i.e.*, water not billed due to system leakage, flushing, fire fighting, or other unmetered uses) during this period ranged from approximately 16% to 26% of production. This percentage of unaccounted for water would be considered typical for similar communities, but could be reduced with focused attention.

Based on the projected increase in service population discussed above, and assuming average per capita production of 100 gallons per day (including unaccounted for water) and the historical peaking factors experienced during the period 1990-1999, projected future water requirements are as follows:

Table 2.3 *Projected Village water production, year 2020*

	gal/day
Minimum month	213,000
Average day	330,000
Maximum month	414,000
Peak day	529,000

These projections do not include additional water requirements associated with Trush Park.

2.3. Trush Park water requirements

The following table presents estimated additional water demands associated with a fully developed Trush Park, and establishes total Village water production requirements which will be serve as the basis for this evaluation.

Table 2.4 *Additional Trush Park water demands*

	gal/day		
	Village projected	Trush Park	Total Village requirements
Minimum month	213,000	40,000	253,000
Average day	330,000	60,000	390,000
Maximum month	414,000	80,000	494,000
Peak day	529,000	100,000	629,000

Additional water requirements attributable to Trush Park are equivalent to approximately 20% of otherwise projected future Village water requirements.

The capacity of existing water supply, treatment and transmission/distribution facilities will be compared with the "total Village requirements" presented in Table 2.4, to establish requirements for any Village upgrades which may be necessary to service Trush Park.

3. Capacity evaluation

3.1. Source

The aquifer underlying the Village well field consists of approximately 30 - 60 feet of sand and gravel. The top of the aquifer lies between 25 and 50 feet below grade. Glacial till overlies the sand and gravel aquifer, and serves as a confining layer such that potentiometric heads are typically within a few feet of the ground surface. Ground water is characterized as very hard, contains high iron levels, and occasionally has high turbidity. Key parameters associated with the three supply wells are as follows:

Table 3.1 *Existing well data*

Parameter	Well No. 1	Well No. 2	Well No. 3
Year installed	1945	1945	1988
Diameter, inches	6	10	12
Depth, feet	79.21	77.37	80
Screen diameter, slot size	6", #100	10", #80	12", telescoping
Screen length, feet	10	10	28
Specific capacity, gal/min/ft	11[3]	12[3]	35 (see below)
Screen capacity at 0.1 ft/sec, gal/min	+/-400	+/-500	+/-850

Well Nos. 1 and 2 are located within the existing treatment building and within approximately 10 feet of each other. Well No. 3 typically serves as the primary source of supply for the Village, and is used to fill distribution storage during a typical day shift. Well No. 1 is utilized to top off the system in the nighttime hours. Well No. 2 is rarely used.

Aquifer testing conducted in 1988[5] identified the maximum safe drawdown of Well No. 3 to be 38 feet. The drawdown versus yield data, based on aquifer characteristics, from the 1988 test indicated that a yield of approximately 1,400 gal/min (equivalent to 2,000,000 gal/day) would be required to achieve 38 ft of drawdown. Prior to termination of the aquifer test, ground water samples were collected and analyzed for herbicides, pesticides, metals, nitrate, sulfate, iron, chloride, sulfide, odor, turbidity, and conductivity. The analytical data indicated that detectable concentrations of metals included iron (312 µg/L) and sodium (8 mg/L). Chloride was detected at 17 mg/L, sulfate at 34.6 mg/L, and sulfide at 0.8 mg/L. Pesticides and herbicides were not detected.

3.2. Well No. 3 yield test

A step drawdown test was conducted on May 18, 2000 to evaluate the performance and yield of existing Well No. 3 by monitoring drawdown in the well at increasingly higher pumping rates. Well No. 3 was shut down 24 hours prior to initiation of the test in order to collect static water level readings. A total of three pumping steps were utilized during the test. The step drawdown test was initiated at a pumping rate of approximately 600 gal/min. Subsequent to water level stabilization, the pumping rate was increased to approximately 735 gal/min, then to approximately 780 gal/min. Each pumping rate was maintained until the drawdown in the well stabilized prior to increasing to the next higher rate. Pumping at a rate higher than 780 gal/min could not be achieved due to hydraulic constraints of the piping system.

During the test, water levels were monitored in Well No. 3 and an observation well located approximately 110 feet to the north. Water levels in Well No. 3 were recorded from a pre-existing water level gauge that was connected to a drop tube installed inside the well casing. This gauge was divided into 1-foot increments. The accuracy of the subsequent water level measurements was +/- 0.5 feet. Water levels were measured in the observation well using an electronic water level probe. Approximate flow rates were calculated by monitoring an existing flow totalizing meter over time.

Prior to initiation of the step drawdown test, flowing artesian conditions were observed in both Well No. 3 and the observation well. The water level gauge at Well No. 3 was reading approximately –2 feet. This reading was considered the static reading from which subsequent water levels were used to obtain drawdown. A static level could not be obtained from the observation well. Water level measurements were initiated subsequent to the lowering of the water level inside the casing. This occurred approximately 14 minutes after start-up of the test.

During the duration of the test, discharge water was directed to a swale located approximately 100 feet west of Well No. 3.

Step 1 of the step drawdown test was run for a total of approximately 120 minutes at an average flow rate of approximately 607 gal/min. The observed drawdown in Well No. 3 at the end of Step 1 was approximately 16 feet. The calculated specific capacity of Well No. 3 during this step equaled approximately 38 gal/min/ft of drawdown.

Step 2 was run for approximately 150 minutes at an average flow rate of approximately 735 gal/min. The observed drawdown in Well No. 3 at the end of Step 2 was approximately 22 feet. The calculated specific capacity of Well No. 3 during this step equaled approximately 33 gal/min/ft of drawdown.

Step 3 was run for approximately 180 minutes at an average flow rate of approximately 780 gal/min. This flow rate was the maximum achievable rate that could be obtained with the gate valve wide open. The observed drawdown in Well No. 3 at the end of Step 3 was approximately 22 feet. The calculated specific capacity of Well No. 3 during this step equaled approximately 35 gal/min/ft of drawdown.

The specific capacities calculated for each step ranged between 33 gal/min/ft of drawdown and 38 gal/min/ft of drawdown. These specific capacities are similar to specific capacities of 39.4 gal/min/ft of drawdown and 35.9 gal/min/ft of drawdown reported based on testing conducted in 1988[5]. On June 21, 1994, HydroGroup performed an annual well and pump maintenance inspection on Well No. 3. During this inspection a drawdown of 8.5 feet was reported at a pumping rate of 500 gal/min, resulting in a specific capacity of 59 gal/min/ft. This increase in specific capacity indicated that Well No. 3 was further developed following installation as a result of its use. The yield test conducted by O'Brien & Gere on May 18, 2000 indicates a reduction in specific capacity at Well No. 3 from 59 gal/min/ft to 38 gal/min/ft. The reduction in specific capacity indicates that Well No. 3 may require redevelopment in the near future.

Testing conducted in 1988[5] identified the maximum safe drawdown at Well No. 3 to be 38 feet. The maximum drawdown observed at Well No. 3 during the yield test was 22 feet, with a calculated specific capacity of 35 gal/min/ft. The results of this yield test indicate that 16 feet of additional drawdown is available at Well No. 3. At a specific capacity of 35 gal/min/ft of drawdown, an additional 560 gal/min is theoretically available, resulting in a maximum theoretical yield for Well No. 3 of approximately 1,340 gal/min. However, the well screen for Well No. 3 was designed to provide a capacity of 850 gal/min at an entrance velocity of 0.1 ft/sec.

Based on this yield test, it appears that the capacity of Well No. 3 is approximately 850 gal/min, which is limited by the capacity of the existing well screen. As indicated on Table 2.4, the total projected peak daily production for the Village, including a fully developed Trush Park, is 629,000 gal/day (equivalent to approximately 440 gal/min). The design capacity of 850 gal/min for Well No. 3 is sufficient to meet the demands of both the Village and a fully developed Trush Park.

3.3. Pumping and treatment

The following summarizes pertinent data for each of the three well pumps:

Table 3.2 *Existing well pump data*

Parameter	Well No. 1	Well No. 2	Well No. 3
Type	Vertical turbine	Vertical turbine	Vertical tubine
Manufacturer	Jacuzzi	Crane-Deming	Crane-Deming
Rated capacity, gal/min (gal/day)	270[3,8] (388,000)	230[3,8] (331,000)	600 (863,000)
Rated head, feet	240	240	280
No. of stages	6[8]	3[8]	8
Horsepower	40	30	50
Speed, rpm	3,600	3,600	1,800
Year installed	1979[8]	1980[8]	1988

Well pumps pump through the existing treatment facilities (see below), and are controlled to maintain level in the distribution system storage tanks. As discussed above, Well No. 3 serves as the Village's primary source of supply, while Well No. 2 is rarely placed into service.

Current treatment consists of ion exchange softening, disinfection using sodium hypochlorite, and corrosion control chemical addition. The water treatment plant was originally constructed in 1958, and upgraded in 1991. A basis of design for these facilities is as follows:

Table 3.3 *Water treatment basis of design*

Softening	
No. of units	4
Configuration	Vertical
Diameter, each	3'-11¼" (inside)
Nominal depth, each	7'-3"
Nominal volume, each	680 gallons
Media type	Polystyrene, cation exchange resin
Media volume, each	40 cubic feet
Plan area, each	12.2 square feet
Hydraulic capacity, each	85 gal/min @ 7.0 gal/min/sf[1]
Capacity per cycle, each	60,000 gallons (per Village)
Waste volume per cycle	2,655 gallons (per Village), 4.4%
Regeneration time per cycle	90 minutes (per Village)
Net daily production capacity (24 hour/day operation)	
3 units in service	326,000 gal/day
4 units in service	435,000 gal/day
Disinfection	
Chemical	Liquid sodium hypochlorite (NaOCl), 12.5% solution
Storage	55-gallon drum
Feed equipment	Metering pumps (2)
Feed capacity	Assume non-limiting
Corrosion control	
Chemical	Liquid polyphosphate corrosion inhibitor (Virchem 532)
Storage	55-gallon drum
Feed equipment	Metering pump
Feed capacity	Assume non-limiting

A water treatment process schematic diagram is presented in Figure 3. Softeners are regenerated using a brine solution, which is stored on-site in underground tanks.

Based on the above, current *treatment* capacity is limited by the existing softening units, which have a net capacity of approximately 435,000 gal/day.

3.4. Transmission/distribution

Water service to Trush Park would be achieved by constructing new facilities to pump water from the Village's existing 500,000 gallon storage tank located on Stone Quarry Road. This tank is connected to the Village distribution system by parallel 8-inch (relatively old) and 12-inch (1991) pipelines. These pipelines should be designed to convey fire flows in excess of 500 gal/min from the storage tank into the Village. Consequently, the ability of these pipelines to convey up to 100,000 gal/day (equivalent to 70 gal/min), and thus maintain level in the 500,000 gallon tank, should not be a concern.

4. Conclusions and recommendations

4.1. Conclusions

Based on our evaluation, the following summarizes conclusions pertinent to the project objective:

1. Current and projected Village water requirements are summarized as follows:

Table 4.1 *Summary of Village water requirements*

	gal/day			
Total	*Current*	*Projected*	*Trush*	*Total*
Minimum month	200,200	213,000	40,000	253,000
Average day	310,100	330,000	60,000	390,000
Maximum month	389,400	414,000	80,000	494,000
Peak day	497,000	529,000	100,000	629,000

Projected water requirements are based on approximately 10% growth in the Village service population through the year 2020, and assume average daily per capita water requirements of 100 gal/day. Estimated Trush Park water requirements have been provided by Trush.

2. Based on the yield test conducted on Well No. 3, the capacity of Well No. 3 is approximately 850 gal/min (equivalent to 1,200,000 gal/day), which is limited by the well screen characteristics rather than the aquifer capacity. This yield is sufficient to meet the demands of both the Village and a fully developed Trush Park. It should be noted, however, that confirmation of the long-term safe yield of the aquifer was not included in the scope of this evaluation.

3. Current *supply* capacity is limited by the existing well pumps, the capacity of which is less than the capacity of the associated well in each case. Rated capacity of the existing pumps is equivalent to daily production of approximately 388,000 gal/day, 331,000 gal/day and 863,000 gal/day, for Well Nos. 1, 2 and 3 respectively. Field testing to confirm pumping capacity of Well Pump Nos. 1 and 2 was not included in the scope of this evaluation, however, testing conducted in 1994[8] achieved pumping rates which met or exceeded rated capacity for all three pumps. Supply capacity is significantly impacted at times when Well No. 3 must be removed from service (*i.e.*, pump maintenance, well redevelopment, or similar event).

Hydraulic Study Performed by Dietz Elliott

4. Current *treatment* capacity is limited by the existing softener units, which have an estimated net production capacity of 435,000 gal/day. This capacity is insufficient to meet projected peak daily water requirements of the Village (529,000 gal/day). This capacity is also insufficient to meet projected maximum month daily water requirements of the Village plus 80,000 gal/day to Trush Park (494,000 gal/day total). A fifth softener, similar to the existing four units, would increase net production capacity to approximately 543,000 gal/day, and a sixth unit would increase capacity to approximately 653,000 gal/day.

5. The existing water *distribution* system should have capacity to convey peak daily flows of 100,000 gal/day to the existing 500,000 gallon water storage tank on Stone Quarry Road. Dedicated pumping facilities and a transmission pipeline would be required to convey water from this tank east to Trush Park. New facilities should include a dedicated flow meter for billing purposes.

4.2. Recommendations

The following upgrades to the Village water system are required to enable the Village to meet its projected water requirements, as well as supply water to Trush Park:

- Provide a fifth softener, similar to the existing four units, along with associated piping, valves and accessories. This equipment will require an addition to the existing treatment building, of approximately 200 square feet.

- Verify that sufficient storage and feed capacity exists for sodium hypochlorite and corrosion inhibitor, to meet approximately 20% additional requirements.

Estimated costs for these upgrades are provided in Table 4.2, below. These recommendations should be reviewed with the Village.

Table 4.2 *Estimated project costs.*

Expand treatment building (approx. 200 sf)	$20,000
New softener unit (1)	$45,000
Modify existing piping	$15,000
Electrical work	$5,000
Engineering, legal and miscellaneous fees	$20,000
Subtotal	$105,000
Contingency allowance	$20,000
Total estimated project cost	$125,000

Water Plant only = 234 in 2015 ?

w/ 4% annual ?

The cost of water pumping and transmission facilities between the Village distribution system and Trush Park would be in addition to the above estimated costs.

In addition to these upgrades, the Village should consider taking the following additional actions, to improve the reliability and efficiency of its water system:

- Upgrade or replace existing Well Nos. 1 and 2, to increase capacity and reduce dependence on Well No. 3.
- Add a sixth softener, similar to the existing units, along with associated piping, valves and accessories.
- Perform an evaluation of the treatment system's ability to comply with current and anticipated future water quality regulations, primarily the USEPA's proposed "Ground Water Rule".

Note that the costs associated with these additional recommendations are not included in the costs presented in Table 4.2 above.

References

1. "Recommended Standards for Water Facilities", Great Lakes Upper Mississippi River Board of State Public Health & Environmental Managers, 1997.

2. "Comprehensive Water Supply Study, Madison County, New York", Stearns & Wheler Engineers and Scientists, 1971.

3. "Water Supply and Storage Study, Village of Cazenovia, New York", Stearns & Wheler Engineers and Scientists, August 1986.

4. "Report of Pumping Test [Well No. 3]", Ehmke Well Drillers, Inc., April 18-21, 1988.

5. "Soil Borings, Well Installation and Pumping Test Analysis, Village of Cazenovia, New York", Stearns & Wheler Engineers and Scientists, June 1988.

6. "Engineer's Report for Village of Cazenovia Water Supply & Treatment System Improvements", Dunn & Associates Environmental Engineering, August 1989.

7. "Water Supply Permit No. 7-2522-00029/00001-0", issued by New York State Department of Environmental Conservation, effective November 6, 1989.

8. Letter from Hydro Group, Inc. to Joe Barilla, Village of Cazenovia, re: "Annual Well & Pump Maintenance", July 27, 1994.

9. Letter from PLS Engineering to Mayor Ryan and Village Board, Village of Cazenovia, re inspection of softener equipment repairs, May 13, 1997.

10. "1980 Census of Population", U.S. Department of Commerce, Bureau of the Census, issued February 1982.

11. "1990 Census of Population and Housing", U.S. Department of Commerce, Bureau of the Census, issued August 1991.

HISTORICAL WATER PRODUCTION, 1970-2000

VILLAGE OF CAZENOVIA

Month	# Days	1970	1980	1990		1991		1992		1993		1994		1995	
				Gallons	Gal/day	Gallons	Gal/day	Gallons	Gal/day	Gallons	Gal/day	Gallons	Gal/day	Gallons	Gal/day
Jan	31	n/a	n/a	9,748,000	314,500	7,973,000	257,200	9,189,000	296,400	11,995,000	386,900	9,579,000	309,000	10,947,000	353,100
Feb(1)	28	n/a	n/a	8,502,000	303,600	6,779,000	242,100	8,422,000	290,400	9,232,000	329,700	9,064,000	323,700	9,701,000	346,500
Mar	31	n/a	n/a	10,379,000	334,800	6,205,000	200,200	9,047,000	291,800	9,553,000	308,200	10,550,000	340,300	10,749,000	346,700
Apr	30	n/a	n/a	9,073,000	302,400	10,192,000	339,700	10,774,000	359,100	9,255,000	308,500	9,136,000	304,500	10,308,000	343,600
May	31	n/a	n/a	9,554,000	308,200	12,070,000	389,400	10,304,000	332,400	10,269,000	331,300	10,158,000	327,700	10,364,000	334,300
Jun	30	n/a	n/a	8,849,000	295,000	11,532,000	384,400	9,261,000	308,700	8,512,000	283,700	9,247,000	308,200	11,005,000	366,800
Jul	31	n/a	n/a	9,672,000	312,000	11,025,000	355,600	9,785,000	315,600	9,920,000	320,000	9,511,000	306,800	9,488,000	306,100
Aug	31	n/a	n/a	9,641,000	311,000	9,262,000	298,800	9,751,000	314,500	8,727,000	281,500	9,395,000	303,100	9,296,000	299,900
Sep	30	n/a	n/a	10,376,000	345,900	9,193,000	306,400	10,504,000	350,100	9,211,000	307,000	9,283,000	309,400	8,643,000	288,100
Oct	31	n/a	n/a	8,430,000	271,900	10,247,000	330,500	11,275,000	363,700	9,479,000	305,800	9,679,000	312,200	9,161,000	295,500
Nov	30	n/a	n/a	7,507,000	250,200	10,026,000	334,200	11,241,000	374,700	9,301,000	310,000	9,213,000	307,100	8,630,000	287,700
Dec	31	n/a	n/a	7,633,000	246,200	9,531,000	307,500	11,638,000	375,400	9,185,000	296,300	8,638,000	278,600	8,531,000	275,200
Totals	365			109,364,000		114,035,000		121,181,000		114,639,000		113,453,000		116,821,000	
Gallons billed		n/a	n/a	n/a		n/a		90,946,425		94,140,135		92,994,218		91,893,000	
% billed		n/a	n/a	n/a		n/a		75.04%		82.12%		81.97%		78.66%	
Average gal/day		309,000	250,000	(ratio)	299,600	(ratio)	312,200	(ratio)	331,100	(ratio)	314,100	(ratio)	310,900	(ratio)	320,300
Max month gal/day				1.16	345,900	1.25	389,400	1.13	375,400	1.23	386,900	1.09	340,300	1.15	368,800
Min month gal/day				0.82	246,200	0.64	200,200	0.88	290,400	0.90	281,500	0.90	278,600	0.86	275,200
Village population (2)		3,031	2,599		3,007										
Max day gal/day					n/a	1.46	456,000		n/a		n/a		n/a		n/a
Average gal/cap/day		102	96		100										

Notes:

1. Gal/day for leap years (1988, 1992, 1996, 2000) based on 29 days per month.
2. Per U.S. Census, U.S. Department of Commerce.

HISTORICAL WATE

VILLAGE OF CAZEN

Month	# Days	1996 Gallons	1996 Gal/day	1997 Gallons	1997 Gal/day	1998 Gallons	1998 Gal/day	1999 Gallons	1999 Gal/day	2000. Gallons	2000. Gal/day
Jan	31	9,076,000	292,700	8,032,000	259,100	9,047,000	291,800	8,917,000	287,600	8,518,000	274,800
Feb(1)	28	8,458,000	291,700	7,835,000	279,800	8,058,000	287,800	8,972,000	320,400	8,815,000	304,000
Mar	31	9,326,000	300,800	8,871,000	286,200	9,577,000	308,900	10,081,000	325,200	9,213,000	297,200
Apr	30	8,610,000	287,000	8,898,000	296,600	9,117,000	303,900	9,123,000	304,100		0
May	31	9,516,000	307,000	9,543,000	307,800	9,991,000	322,300	9,647,000	311,200		0
Jun	30	8,988,000	299,600	9,625,000	320,800	9,359,000	312,000	9,789,000	326,300		0
Jul	31	9,369,000	302,200	10,488,000	338,300	11,025,000	355,600	10,763,000	347,200		0
Aug	31	9,631,000	310,700	10,054,000	324,300	10,833,000	349,500	9,389,000	302,900		0
Sep	30	9,260,000	308,700	9,482,000	316,100	10,224,000	340,800	9,221,000	307,400		0
Oct	31	9,255,000	298,500	9,681,000	312,300	9,144,000	295,000	8,698,000	280,600		0
Nov	30	8,491,000	283,000	8,965,000	298,800	8,318,000	277,300	7,898,000	263,300		0
Dec	31	8,525,000	275,000	9,154,000	295,300	8,144,000	262,700	8,539,000	275,500		0
Totals	365	108,504,000		110,628,000		112,837,000		111,037,000		26,546,000	
Gallons billed		89,470,718		92,448,015		83,922,200		85,297,490		n/a	
% billed		82.46%		83.57%		74.37%		76.82%		n/a	
Average gal/day		(ratio)	296,400	(ratio)	303,000	(ratio)	309,000	(ratio)	304,300	(ratio)	292,000
Max month gal/day		1.05	310,700	1.12	338,300	1.15	355,600	1.14	347,200	1.04	304,000
Min month gal/day		0.93	275,000	0.86	259,100	0.85	262,700	0.87	263,300	0.00	0
Village population (2)							2,982				
Max day gal/day			n/a	1.33	403,000	1.31	405,000	1.63	497,000		n/a
Average gal/cap/day							104				

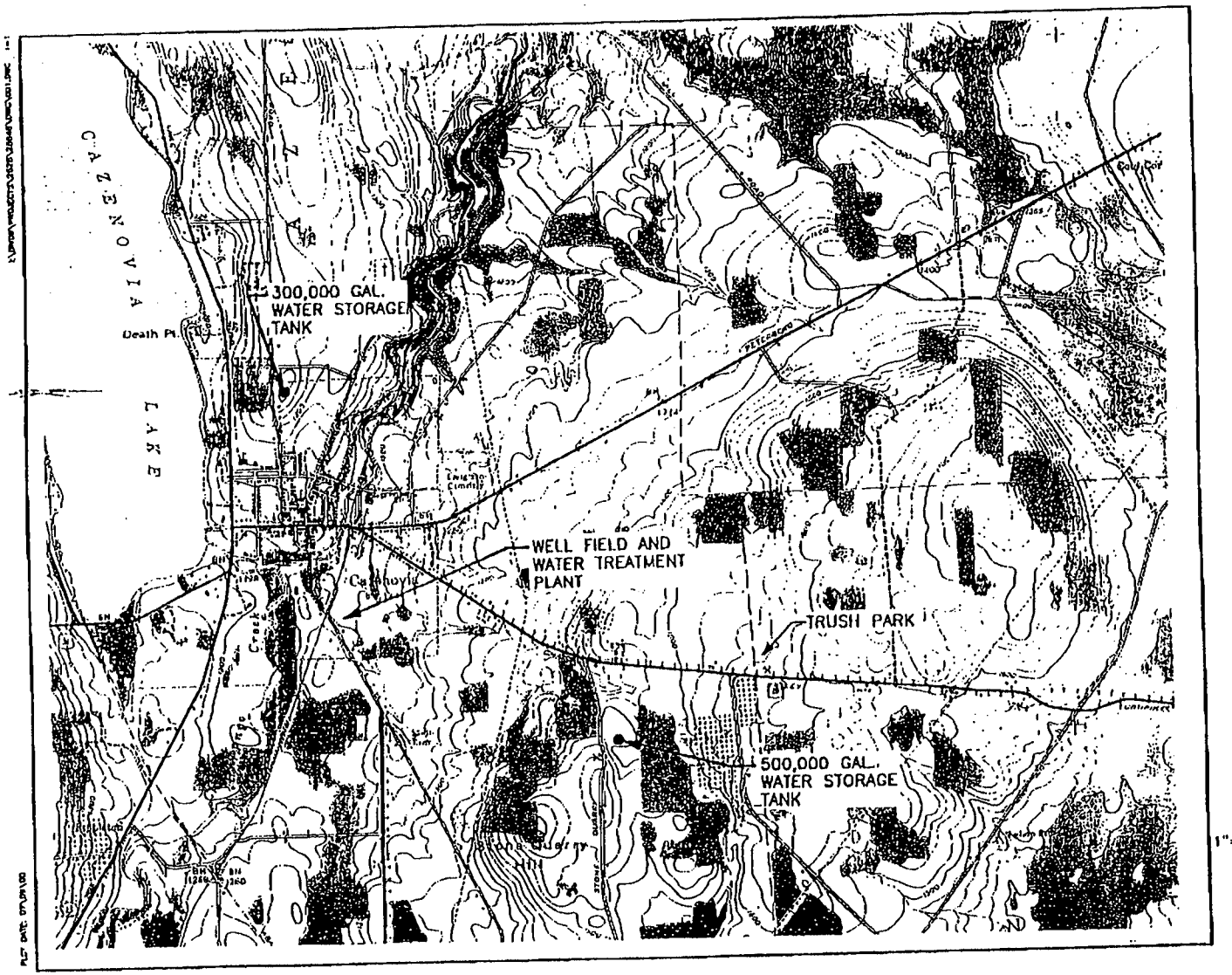
Notes:

1. Gal/day for leap ye
2. Per U.S. Census,

Well No. 3 Step Test Data, 5/18/00
Village of Cazenovia, New York

0	-2		854233550			
0.5	2	4	854234300			
2	8	10	854235050	500		
4.5	8	10				
8	8	10	854237900			
7	8	10	854238600	700		
10	8	10	854240500	633		
12	8.5	10.5				
14	8.5	10.5	854243100			
16	9	11	854244380	640		
18	10	12	854245650	635		
20	10	12	854247940			
25	10	12	854250150	442		
30	10.5	12.5	854253320	634		
35	11	13	854256480	632		
40	11	13	854259640	585		
45	11.5	13.5	854262800	632		
50	11.5	13.5	854265310	502		
55	12	14	854268050	748		
60	12	14	854272200	628		
70	12.5	14.5	854278440	624		
80	13	15	854284620	621		
90	13	15	854290780	616		
100	13.5	15.5	854297940	666		
110	13.5	15.5	854303900	536		
120	14	16	854309240	565	607	38
125	16	18	854313200	792		
130	16	18				
135	16.5	18.5	854319850			
140	17	19	854323540	715		
145	17	19	854327200	732		
155	17	19	854335500	830		
165	17.5	19.5	854341800	630		
175	17.5	19.5	854349200	740		
180	17.5	19.5	854352850	730		
190	17.5	19.5	854359810	696		
200	18	20	854367510	770		
210	18	20	854374850	734		
220	18	20	854382260	741		
230	18.5	20.5	854389100	684		
240	18.5	20.5	854396580	748		
250	18.5	20.5	854404010	743		
260	18.5	20.5	854411320	731		
270	20	22	854418730	741	735	33
275	23	25				
285	22	24	854430300			
295	21	23	854438920	862		
305	20	22	854446420	750		
315	20	22	854453370	695		
325	20	22	854461120	775		
330	20	22				
340	20	22	854472770			
350	23	25	854480530	776		
360	20	22	854488260	773		
370	20	22	854496010	775		
380	21	23	854504540	853		
390	20	22	854511490	695		
400	20	22	854519210	772		
410	20	22	854527940	873		
420	20	22	854534680	674		
430	20	22	854542430	775		
440	20	22	854550150	772		
450	20	22	854558880	873	780	35

FIGURE 1



VILLAGE OF CAZENOVIA
MADISON COUNTY, N.Y.
WATER SYSTEM CAPACITY EVALUATION

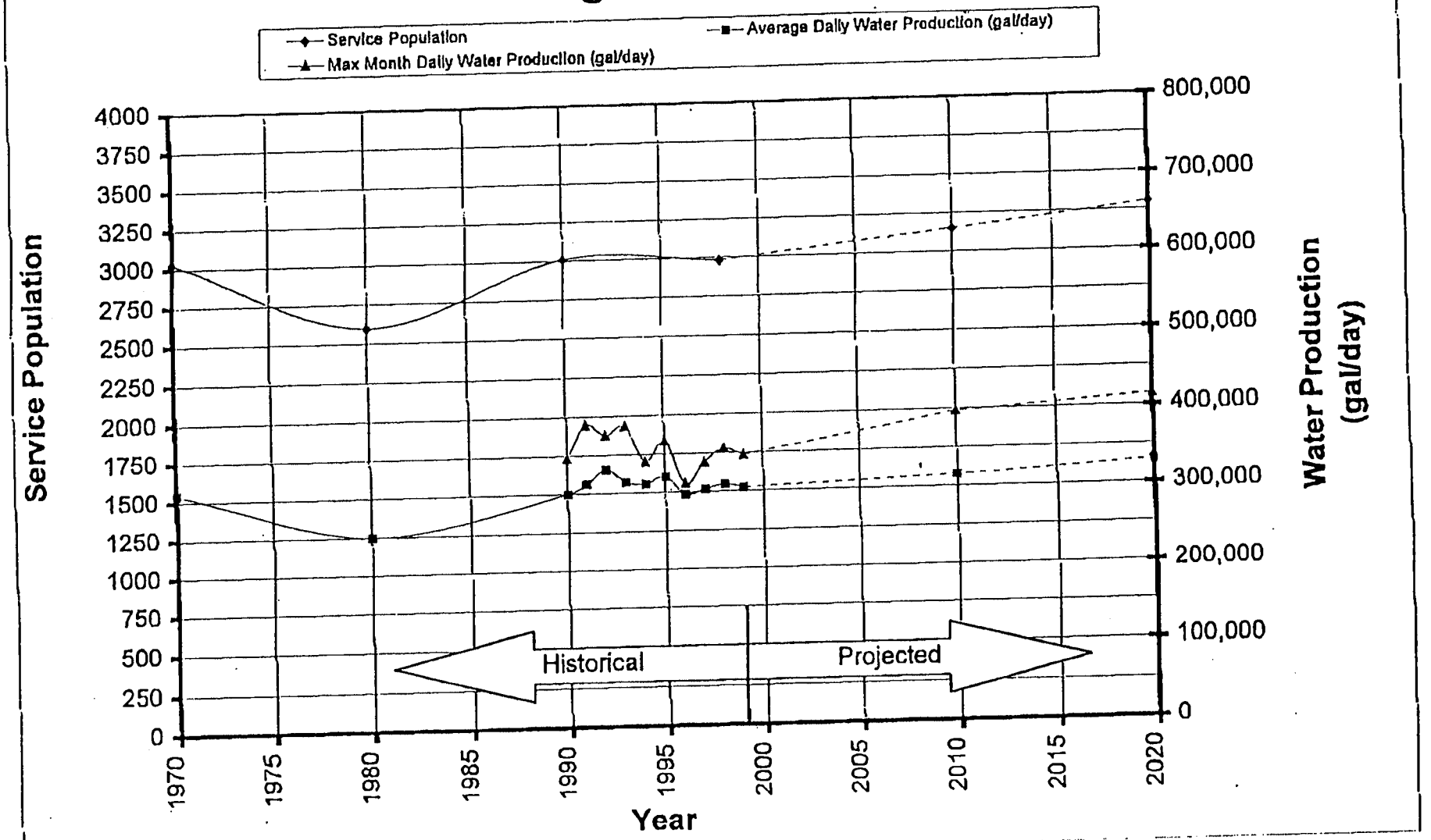
LOCATION PLAN

2000 0 2000
1"=2000'

FILE NO. 2628.25848.001
JULY 2000

O'BRIEN & GERE ENGINEERS INC.

Service Population and Water Production
Village of Cazenovia



7/11/00

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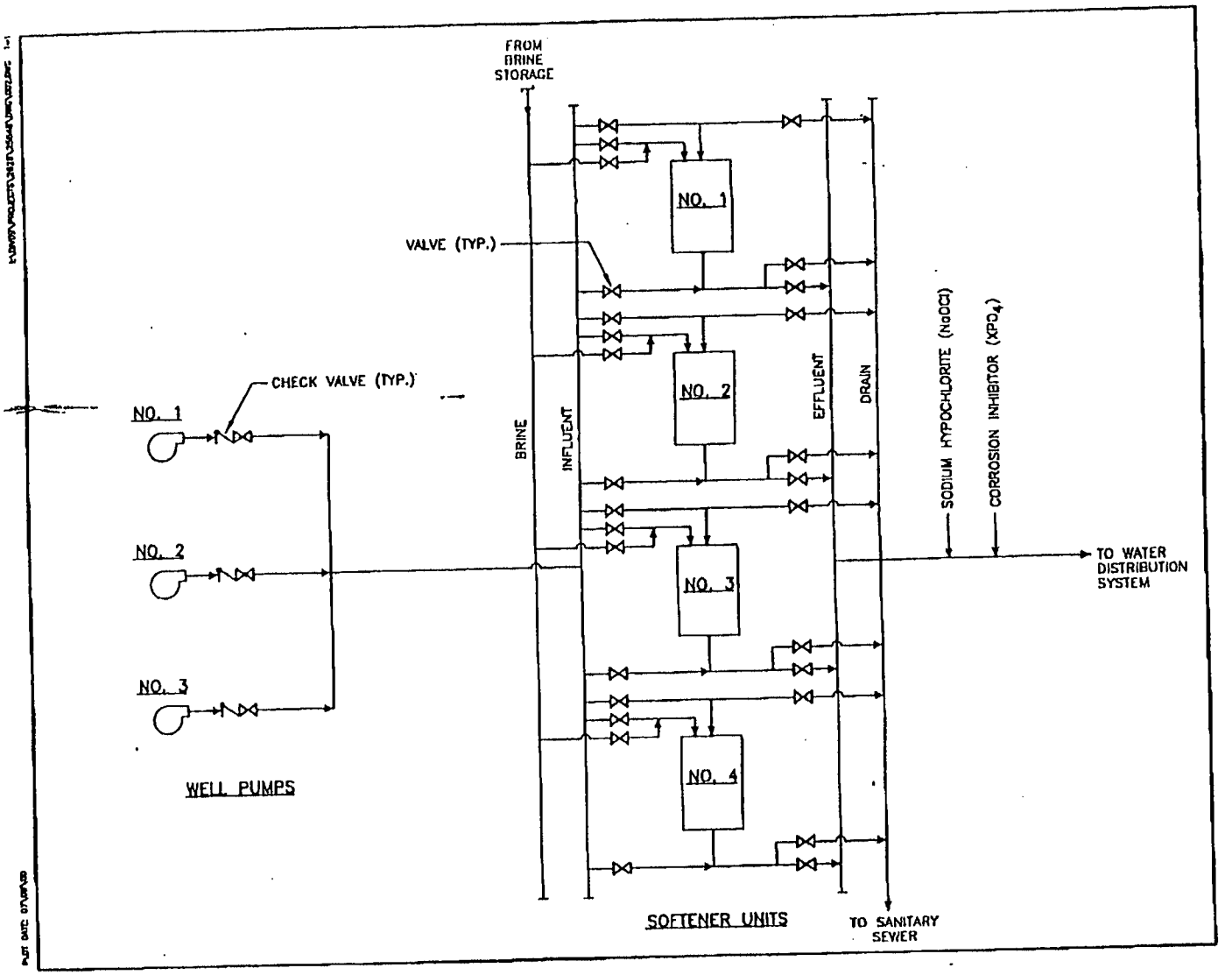
FIGURE 3



VILLAGE OF CAZENOVIA
MADISON COUNTY, N.Y.
WATER SYSTEM CAPACITY EVALUATION

WATER TREATMENT SCHEMATIC DIAGRAM

NOT TO SCALE

FILE NO. 2626.25848.002
JULY 2000

O'BRIEN & GERE ENGINEERS INC.

APPENDIX L

PLS Engineering Study

PLS ENGINEERING, P.C.
CIVIL & ENVIRONMENTAL ENGINEERING
1635 NORTH ROAD ✦ TULLY, NEW YORK 13159
TELEPHONE (315) 696-5252 ✦ FAX (315) 696-6643

Mayor Gregg and Village Board
Village of Cazenovia
90 Albany Street
Cazenovia, New York 13035

October 20, 2000

RE: WATER SUPPLY TO TRUSH PARK

Gentlemen;

This is to review the Draft report submitted by O'Brien & Gere Engineers regarding the capacity of the Village's water system and projected demands for water and also to review and summarize recent discussions on the Villages water system.

Water Requirements

O'Brien & Gere's Draft report titled "*Village of Cazenovia Water System Capacity Evaluation*" (the Report) dated July 2000 provides the following water usage figures (in gallons per day).

	Current 1990-1999	Projected through 2020 (Village only)	Trush Park Requirements	Projected Total Requirements
Minimum Month	200,200	213,000	40,000	253,000
Average Day	310,100	330,000	60,000	390,000
Maximum Month	389,400	414,000	80,000	494,000
Peak Day	497,000	529,000	100,000	629,000

Discussions with the Village Board members indicate that there are several projects being considered in proximity to the Village including the Muracco, Ambrose and Lucas properties which could add up to 45,000 GPD to the average daily water demand. Allowing an additional 5% for growth within the existing service area would indicate the potential need for another 15,000 GPD average daily water demand. If this growth scenario and O'Brien & Gere's peaking factors are used, the water usage picture could be as follows:

	Current 1990-1999	Projected Village Increase through 2020	Trush Park Requirements	Projected Total Requirements
Minimum Month	200,200	39,000	40,000	279,200
Average Day	310,100	60,000	60,000	430,000
Maximum Month	389,400	75,600	80,000	545,000
Peak Day	497,000	96,000	100,000	693,000

Capacity of Village Wells

Well yields and pumping capacities are the next topic of discussion in the Report.

There does appear to be some confusion about the numbering system used to identify the 3 wells at the Village's Well Field. As I understand it the following system is currently used to identify these wells.

Parameter	WELL #1	WELL #2	WELL #3
Year Installed	1945	1945	1988
Diameter	6" inside 10" drive pipe	10" inside 18" drive pipe	12" inside (no drive pipe)
Depth	79' ±	77' ±	80'
Pump	30 HP, 3600 RPM *Crane Deming Vertical Turbine* with rated pump capacity =230 GPM Installed in 1979	40 HP, 3600 RPM *Jacuzzi Vertical Turbine* with rated pump capacity = 350 GPM Installed 1982	50 HP 1800 RPM *Crane-Deming Vertical Turbine* with rated pump capacity = 600 GPM Installed 1988
Current Production Capability	Negligible	340 GPM	600 GPM

As stated in the O'Brien & Gere's Report the Village primarily uses Well #3 to meet the current demand for water. Assuming that the above description of the Village's wells is correct, Well #2 is used overnight to supplement the water supply and Well #1 is not currently used.

The available yield from Well #3, based on the Report, is currently limited by the well screen design to 850 GPM and by the pumping capacity to 780 gallons per minute. It should be noted that the discharge rate of 780 GPM was obtained through an open valve at the well field, that Well #3 is designed to deliver 600 GPM to the water system under typical operating conditions and that Well #3 is currently throttled to about 540 GPM to more closely match softener capacity.

As noted above, Well #2 is currently producing 340 GPM.

Operation of Well #3 at a flow rate of 600 GPM for 12-hours per day would produce 432,000 gallons of water per day, meeting the expected 2020 average water requirement.

Meeting the estimated peak demand and of 693,000 GPD could be accomplished by running Well #3 for approximately 20-hours at 600 GPM or by operating Well #3 for approximately 14-hours at 600 GPM and Well #2 for approximately 10-hours at 340 GPM.

If it became necessary to shutdown Well #3 for cleaning, equipment repair or other reason, the Village could currently produce up to 489,000 GPD by running Well #2 at 340 GPM for 24-hours. Under current demands, the Village system could continue to supply adequate quantities of water for a short period of time with Well #3 out of service. With projected Village increases through 2020 Well #2 alone appears to be adequate for meeting peak month demands for a short period of time but not for meeting peak day demands. With Trush Park requirements added to projected Village increases through 2020 Well #2 alone would remain adequate for meeting average daily demands for short periods of time but would not be adequate for peak month demands.

In summary, existing Wells #2 and 3 can adequately supply the projected water requirements through 2020. However, with well #3 out of service for repairs, it would not be possible to meet peak monthly demands. Construction of a fourth well with a capability of at least 600 GPM will be necessary for continued reliable operation of the system.

Water Treatment Capacity

The Report identifies the need for at least one more water softener to provide sufficient treatment capacity to meet operating conditions.

Under typical operating conditions each softener can be expected to treat about 108,000 gallons per day. To meet projected peak month demands will require a minimum of five (5) softeners. To provide adequate quantities of treated water with one unit down for service or repairs, the Village should consider adding two (2) additional softeners and associated piping, valves and controls.

Distribution System

The Village's existing distribution system does appear adequate to transmit sufficient flow to the 500,000 gallon tank on Stone Quarry Road. To improve system reliability, the existing 4" piping on Chenango Street should be considered for replacement (probably with 10" pipe). To properly evaluate and prioritize improvements to the water system it would be a good idea to develop and calibrate a computer model of the distribution system.

One additional consideration with respect to the pumping of water from the 500,00 gallon tank to Trush Park is the timing of this operation. The pumping and storage facilities for Trush Park should be designed to provide sufficient capacity to allow for this pumping operation to take place primarily during off-peak usage hours (overnight e.g.).

Aquifer Size and Long Term Capacity

The question of how much water can be extracted from the Village's aquifer over a long period of time has been raised for discussion.

To my knowledge, no specific studies have been conducted to accurately identify the size of the area contributing water to the aquifer or to estimate the total volume of water stored in the aquifer.

In a 1986 study, Stearns & Wheler estimated that a safe yield of the Chenango Street groundwater supply of 720,000 gallons per day (500 GPM). This report provides some information on the geology of the area around the well field and on the probable size and extent of the recharge area but does not present the basis for the 720,000 GPD safe yield estimate.

From Stearns & Wheler's estimated safe yield and from other observations including the rapid recovery of water levels following various pump tests in the aquifer, it appears that the existing well field could provide sustained water yields to meet any of the projected demands discussed in this letter.

The Village should realize that over a long period of time, the yield of water from this (or any) aquifer is dependant on climatic factors which are beyond any control or ability to predict. A protracted drought, for example, could adversely affect the aquifer's safe yield.

As we have discussed, the Village should consider conditioning the supply of water to additional customers on its continued ability to supply existing customers.

Summary

To adequately serve the anticipated future water demands including those for Trush Park the following improvements to the Village's Water System should be considered:

1) Install and develop a fourth well, pumping facilities, and piping similar to Well #3, capable of producing at least 600 GPM. The Village may wish to explore areas to the north of the softener building, which have not been investigated to date, for a location for this well.

2) Add two (2) more softeners.

3) Upgrade chlorination and corrosion chemical feed equipment.

4) Develop and calibrate a computer model of the water system to evaluate the need for water distribution system improvements.

Please feel free to contact me if you have any questions.

Very truly yours,

Paul Sheneman, P.E.
PLS/mls
enclosure
cc: Mr. Steve Mclaughlin
File (g:\wpdoc\CAZ-TrushPark-water.wpd)

APPENDIX M

Potential Expanded District

Town of Cazenovia/Town of Nelson

Route 20 Water District

POTENTIAL PROJECT EXPANSION

1. Extension to Nelson Heights

5,000 feet of water line @ $75/foot	=	$ 375,000
Contingency – 20%	=	$ 75,000
Soft Costs – 20%	=	$ 75,000
		$ 525,000
		USE $ 550,000

2. Extension to Nelson Hamlet:

12,000 feet of water line @ $75/foot	=	$ 900,000
Contingency – 20%	=	$ 180,000
Soft Costs – 20%	=	$ 180,000
		$1,260,000
		USE $1.3 million

3. Add Nelson Well and Treatment:

New Well	=	$ 75,000
Treatment Facility	=	$ 200,000
Contingency – 20%	=	$ 60,000
Soft Costs – 20%	=	$ 60,000
		$ 395,000
		USE $ 400,000

FENNER

NELSON

CAZENOVIA

NELSON

PROPOSED ROUTE 20 DISTRICT

4,100 FOOT NEW WATERLINE

NELSON HEIGHTS SERVICE AREA

POSSIBLE NEW WELL & TREATMENT

12,000 FOOT NEW WATERLINE

X 1440

NELSON HAMLET SERVICE AREA

NORTH

0 400 800 1,600 2,400 Feet

GRAPHIC SCALE 1"=800'

DUNN AND SGROMO ENGINEERS

E. SYRACUSE, NEW YORK

CAZENOVIA / NELSON
ROUTE 20 WATER DISTRICT

DATE: 08.30.2016

FILE NO: 403.005

POTENTIAL EXPANDED DISTRICT

APPX. M

J:\Jason\Arcmap\Cazenovia-Nelson Waterline\Fig1.mxd

APPENDIX N

Long-Form EAF

Full Environmental Assessment Form
Part 1 - Project and Setting

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 project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Sponsor Information.

Name of Action or Project: Town of Cazenovia/Town of Nelson Route 20 Water District			
Project Location (describe, and attach a general location map): US Route 20, east of the Village of Cazenovia from Stone Quarry Road to 1,500 feet east of Nelson Heights Road in the Towns of Cazenovia and Nelson.			
Brief Description of Proposed Action (include purpose or need): The project is the installation of approximately 16,500 feet of public water mains and appurtenances on US Route 20 and Trush Boulevard to serve 47 properties currently without access to public water.			
Name of Applicant/Sponsor: Town of Cazenovia / Town of Nelson		Telephone:	
		E-Mail:	
Address: 7 Albany Street / 4085 Nelson Road			
City/PO: Cazenovia / Cazenovia		State: New York	Zip Code: 13035
Project Contact (if not same as sponsor; give name and title/role): Bill Zupan, Supervisor / Roger Bradstreet, Supervisor		Telephone: (315) 655-9213 (Caz.) (315) 655-8582 (Nel.)	
		E-Mail:	
Address: SAME AS ABOVE			
City/PO:		State:	Zip Code:
Property Owner (if not same as sponsor):		Telephone:	
		E-Mail:	
Address: SAME AS ABOVE			
City/PO:		State:	Zip Code:

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 Council, Town Board, or Village Board of Trustees ☑Yes ☐No	District Formation/Bonding	January 2017 (projected)
b. City, Town or Village Planning Board or Commission ☐Yes ☐No		
c. City Council, Town or Village Zoning Board of Appeals ☐Yes ☐No		
d. Other local agencies ☐Yes ☐No		
e. County agencies ☑Yes ☐No	Madison County H D - Engineering approval	December 2016
f. Regional agencies ☐Yes ☐No		
g. State agencies ☑Yes ☐No	NYSHD-Eng.; NYSDOT-Hwy.;NYSOPRHP-Arch.; NYSEFC-Fin.;	December 2016 (projected) November 2016 (projected)
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.

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

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

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):

_____

_____

_____

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?
Town of Cazenovia - RB
Town of Nelson - Business Commercial, and Rural

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? _____

C.4. Existing community services.

a. In what school district is the project site located? Cazenovia Central School

b. What police or other public protection forces serve the project site?
Madison County Sheriffs Department

c. Which fire protection and emergency medical services serve the project site?
Village of Cazenovia

d. What parks serve the project site?
None

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)?
Commercial, manufacturing, healthcare, daycare, and residential.

b. a. Total acreage of the site of the proposed action? 40 acres
b. Total acreage to be physically disturbed? 2 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 3 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: 3-mile exp. of pub. water

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 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				
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: 100,000-gallon steel water storage tank

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

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

iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ 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):

D.2. Project Operations

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

If Yes:

i .What is the purpose of the excavation or dredging? Installation of underground water lines.

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

- Volume (specify tons or cubic yards): 0
- 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.

Excavated native soil materials will be backfilled into trench following pipe installation.

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? 2 acres

vi. What is the maximum area to be worked at any one time? 1 acres

vii. What would be the maximum depth of excavation or dredging? 8 feet

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

ix. Summarize site reclamation goals and plan:

Site will be restored to pre-disturbance conditions.

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): _____

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 proposed action cause or result in disturbance to bottom sediments? ☐ Yes ☐ No

If Yes, describe: _____

iv. Will 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: 50,000 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: Village of Cazenovia
- 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: Town of Cazenovia and Town of Nelson
- Date application submitted or anticipated: January 2017
- Proposed source(s) of supply for new district: Village of Cazenovia

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), maximum pumping capacity: >500 gallons/minute.

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

If Yes:

i. Total anticipated liquid waste generation per day: _____ 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): _____

_____

_____

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

If Yes:

- Name of wastewater treatment plant to be used: _____
- Name of district: _____
- 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 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 _____ acres (impervious surface)

_____ Square feet or _____ acres (parcel size)

ii. Describe types of new point sources. _____

_____

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)?

_____

_____

- If to surface waters, identify receiving water bodies or wetlands: _____

_____

_____

- Will stormwater runoff flow to adjacent properties? ☐Yes ☐No

iv. Does 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? ☐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 semi-trailer truck trips/day: _____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

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:

_____

_____

_____

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: 7:00 AM to 7:00 PM
- Saturday: _____
- Sunday: _____
- Holidays: _____

ii. During Operations:

- Monday - Friday: N/A
- Saturday: _____
- Sunday: _____
- Holidays: _____

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:

Temporary construction noise during work hours.

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

Describe: _____

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:

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

Describe: _____

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 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 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:

Commercial, manufacturing, healthcare, daycare, and residential.

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	20	20	
• Forested			
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)			
• 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: road shoulder, meadow, lawns/landscaping	20	20	

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:

_____

_____

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): _____

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures:_____

_____

_____

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): _____

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? >10 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____%

c. Predominant soil type(s) present on project site:

Silt and gravel loams	100 %
	%
	%

d. What is the average depth to the water table on the project site? Average: >5 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%:	80 % of site
☑	10-15%:	20 % of site
☐	15% or greater:	% 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

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 _____ 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? ☐ Yes ☑ No

k. Is the project site in the 500 year Floodplain? ☐ 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: _____

m. Identify the predominant wildlife species that occupy or use the project site: _____
None-developed highway right-of-way

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

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

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, or has been nominated by the NYS Board of Historic Preservation for inclusion on, the State or National Register of Historic Places? ☐ Yes ☑ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based:

_____

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): _____

ii. Basis for identification: _____

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: Route 20 Scenic By-Way

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): _____

iii. Distance between project and resource: _____ 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

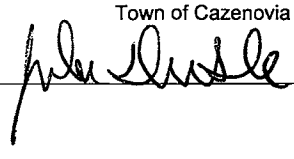
Attach any additional information which may be needed to clarify your project.

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 John Dunkle, P.E. for the Town of Cazenovia and Town of Nelson Date September 1, 2016

Signature  Title Project Engineer

PRINT FORM

APPENDIX O

District

Legal Description

LEGAL DESCRIPTION

for the

Town of Cazenovia/Town of Nelson

Route 20 Water District

May 15, 2017

Revised December 7, 2017

The Town of Cazenovia/Town of Nelson Route 20 Water District, situated in the Towns of Cazenovia and Nelson, Madison County and State of New York, being more particularly described as follows:

Commencing at a Point of Beginning said Point being on the southwestern corner of Parcel 95.3-2-29, in the Town of Cazenovia; said point also being on the northerly highway boundary of U.S. Route 20;

1. Thence northerly along the western boundary of Parcel 95.3-2-29 to the northwestern property corner of said Parcel;

2. Thence northeasterly along the northwestern boundary of Parcel 95.3-2-29 to the northern property corner of said Parcel;

3. Thence easterly along the northern boundary of Parcel 95.3-2-29 to the northeastern property corner of said Parcel;

4. Thence southerly along the eastern boundary of Parcel 95.3-2-29 to the northwestern property corner of Parcel 95.3-2-30;

5. Thence easterly along the northern boundary of Parcel 95.3-2-30 to the northeastern property corner of said Parcel;

6. Thence southerly along the eastern boundary of Parcel 95.3-2-30 to the northeastern property corner of Parcel 95.3-2-31;

7. Thence southerly along the eastern boundary of Parcel 95.3-2-31 to a point where the offset is 300 feet North of the northern boundary of U.S. Route 20;

8. Thence easterly across Parcel 95.3-2-29.1 to the northwestern property corner of Parcel 95.3-2-32;

9. Thence easterly along the northern boundary of Parcel 95.3-2-32 to the intersection with the western boundary of Parcel 95.3-2-33;

10. Thence easterly across Parcel 95.3-2-33 to the intersection with the western boundary of Parcel 95.-1-9, said point being 300 feet north of the northern boundary of U.S. Route 20;

11. Thence easterly across Parcel 95.-1-9 along the offset 300 feet North of the northern boundary of U.S. Route 20 to the intersection with the western boundary of Parcel 95.-1-9.1;

12. Thence northerly along the western boundary of Parcel 95.-1-9.1 to a point where the offset is 730 feet North of the northern boundary of U.S. Route 20;

13. Thence easterly across Parcel 95.-1-9.1 to the northwestern property corner of Parcel 95.-1-9.2;

14. Thence easterly along the northern boundary of Parcel 95.-1-9.2 to the northeast property corner of said Parcel and the intersection with the western boundary of Parcel 95.-3-4.4, said boundary also being the municipal boundary between the Town of Cazenovia and the Town of Nelson;

15. Thence northerly along the western boundary of Parcel 95.-3-4.4 to the northwestern property corner of said parcel;

16. Thence easterly across Parcel 95.-3-4.4 to the northeastern property corner of said parcel;

17. Thence southeasterly along the northeast boundary of Parcel 95.-3-4.4 to the western property corner of Parcel 95.-3-5.1;

18. Thence easterly across Parcel 95.-3-5.1 to the northwestern property corner of Parcel 95.-3-4.312;

19. Thence easterly along the northern boundary of Parcel 95.-3-4.312 to the northeastern property corner of said Parcel;

20. Thence southerly along the eastern boundary of Parcel 95.-3-4.312 to a northwestern property corner of Parcel 95.-3-4.5;

21. Thence easterly along the northern boundary of Parcel 95.-3-4.5 to the northeast property corner of said Parcel;

22. Thence southerly along the eastern boundary of Parcel 95.-3-4.5 to a point 300 feet North of the northern highway boundary of U.S. Route 20;

23. Thence easterly along the offset 300 feet North of the boundary of U. S. Route 20 to the intersection with the eastern boundary of Parcel 95.-3-4.1;

24. Thence southerly along the easterly boundary of Parcel 95.-3-4.1 to the northwest corner of Parcel 96.-1-3;

25. Thence easterly along the northern boundary of Parcel 96.-1-3 to the northeast property corner of said Parcel;

26. Thence southerly along the eastern boundary of Parcel 96.-1-3 to the northern highway boundary of U.S. Route 20;

27. Thence southerly across the U. S. Route 20 right-of-way to the southerly highway boundary and the northwest property corner of Parcel 107.-08-2-32;

28. Thence easterly along the southern highway to the northeast property corner of Parcel 107.-08-2-44;

29. Thence southerly along the eastern boundary of Parcel 107.-08-2-44 to a point 300 feet south of the southern highway boundary of U.S. Route 20;

30. Thence westerly across Parcel 107.08-2-44 to the east property boundary of Parcel 107.-2-32;

31. Thence southerly along the eastern boundary of Parcel 107.08-2-32 to the south corner of Parcel 107.08-2-32;

32. Thence westerly along the southern boundaries of Parcel 107.08-2-32 to the southeast property corner of Parcel 107.08-2-39;

33. Thence westerly along the southern boundary of Parcel 107.08-2-39 to the southwest property corner of said Parcel;

34. Thence northerly along the western boundary of Parcel 107.08-2-39 to the southeast property corner of Parcel 107.08-2-46;

35. Thence westerly along the southern boundary of Parcel 107.08-2-46 to the eastern highway boundary of Nelson Heights Road;

36. Thence westerly across the Nelson Heights Road right-of-way to the western highway boundary and the southeast property corner of Parcel 107.08-2-9;

37. Thence westerly across the southern boundaries of Parcels 107.08-2-9, 107.08-2-19, 107.08-2-8, and 107.08-2-7 to the eastern highway boundary of Midstate Lane;

38. Thence westerly across the right-of-way of Midstate Lane to the western highway boundary and the northeast corner of Parcel 107.08-2-6;

39. Thence southerly along the Midstate Lane highway boundary and the eastern boundary of Parcel 107.08-2-6 to a point 370 feet south of the southern highway boundary of U.S. Route 20;

40. Thence westerly across Parcels 107.08-2-6 and 107.08-2-3 to the southeast property corner of Parcel 107.08-2-2;

41. Thence westerly along the southern boundaries of Parcels 107.08-2-2 and 107.08-2-1, to the southwest corner of Parcel 107.08-2-1;

42. Thence westerly across Parcel 107.2-1.3 to the southeast property corner of Parcel 107.-2-1.5;

43. Thence westerly along the southern boundaries of Parcel 107.-2-1.5 and 107.-2-1.1 to the southeast property corner of Parcel 107.-3-44.11, said point also being the municipal boundary between the Town of Nelson and the Town of Cazenovia;

44. Thence westerly along the southern boundary of Parcel 107.-3-44.11 to the eastern highway boundary of Mosley Road;

45. Thence northerly along the eastern highway boundary of Mosley Road to point 420 feet south of the southern highway boundary of U.S. Route 20;

46. Thence westerly across the Mosley Road right-of-way to the western highway boundary and the southeast property corner of Parcel 107.-3-43;

47. Thence westerly along the southern boundaries of Parcels 107.-3-43 and 107.-3-42 to the southwest property corner of Parcel 107.-3-42;

48. Thence westerly across Parcel 107.-3-40.3 to the eastern boundary of Parcel 107.-3-40, said point being 430 feet south of the southerly highway boundary of U.S. Route 20;

49. Thence northerly along the eastern boundary of Parcel 107.-3-40 to a point 300 feet south of the southern highway boundary of U.S. Route 20;

50. Thence westerly across Parcels 107.-3-40 and 107.-3-29.2 parallel to U.S. Route 20 to the eastern highway boundary of Stone Quarry Road;

51. Thence northerly along the eastern highway boundary of Stone Quarry Road, to the southern highway boundary of U.S. Route 20;

52. Thence northerly across the U.S. Route 20 right-of-way to the northern highway boundary of U.S. Route 20;

53. Thence easterly along the northern highway boundary of U.S. Route 20 to the northwest property corner of Parcel 95.3-2-29, said point also being the Point of Beginning.

54. Including part or all of the following Parcels on the north and south sides of U.S. Route 20 in the Town of Cazenovia:

North side:	95.3-2-29	South side:	95.3-2-23
	95.3-2-29.1		107.-3-29.2
	95.3-2-30		107.-3-40
	95.3-2-31		107.-3-40.3
	95.3-2-32		107.-3-41.1
	95.3-2-33		107.-3-41.2
	95-1-9		107.-3-41.3
	95-1-9.1		107.-3-42
	95-1-9.2		107.-3-43
			107.-3-44.11

And including all or part of the following parcels on the north and south sides of U.S. Route 20 in the Town of Nelson:

North side:	95.-3-4.1	South side:	107.-2-1.1
	95.-3-4.4		107.-2-1.3
	95.-3-4.5		107.-2-1.5
	95.-3-4.6		107.-08-2-1
	95.-3-4.32		107.-08-2.2
	95.-3-4.312		107.-08-2.3
	95.-3-5.1		107.-08-2.4
	95.-3-5.2		107.-08-2.5
	96.-1-3		107.-08-2.7
			107.-08-2.8
			107.-08-2.9
			107.-08-2.19
			107.-08-2.31
			107.-08-2.32
			107.-08-2.39
			107.-08-2.44
			107.-08-2.46

APPENDIX P

Grant Award Letters

Northern Border
Regional Commission

Grant Agreement
Between
Northern Border Regional Commission (NBRC)

And
Town of Nelson, NY and Town of Cazenovia, NY

Date: August 4, 2017

NBRC Agreement Number: NBRC17GNY06

Project Title: Town of Nelson/Town of Cazenovia Route 20 Water Extension

Grantee/Recipient:	**Grantor:**
Town of Nelson, NY	Northern Border Regional Commission
Contact: Roger Bradstreet	Contact: Christine Frost
4085 Nelson Road, Cazenovia, NY 13035	53 Pleasant Street, Suite 1201, Concord, NH 03301
315-655-8582	603-369-3001
rogerbradstreet@gmail.com	admin@nbrc.gov
	www.nbrc.gov
Co Grantee/Recipient:	Town of Cazenovia, NY
William M Lyon	
	DUNS: 053021820
State Program Manager: Kyle Wilber	Department of State
99 Washington Avenue, 10th Floor Albany, NY 12231	kyle.Wilber@dos.ny.gov
518-473-3355	http://www.dos.ny.gov
Grantee's Employer Identification Number (EIN):	15-6001057
Grantee's DUNs Number:	54456793
Date of Award:	August 4, 2017
Date of Amendments	N/A

NEW YORK
STATE OF
OPPORTUNITY.

Environmental
Facilities Corporation

ANDREW M. CUOMO
Governor

SABRINA M. TY
President and CEO

October 5, 2017

The Honorable Roger Bradstreet
Supervisor
Town of Nelson
4085 Nelson Road
Cazenovia, NY 13035

Re: DWSRF Project No. 18350
Cazenovia-Nelson Rt. 20 WD
Town of Nelson
Madison County

Dear Supervisor Bradstreet:

On behalf of Governor Andrew M. Cuomo, I am pleased to inform you that your community has been awarded a NYS Water Infrastructure Improvement Act (WIIA) grant for the above referenced project.

Your WIIA grant has been awarded in an amount not to exceed $1,710,000, based on information provided in your application, including total estimated eligible project costs. The Environmental Facilities Corporation (EFC) will determine the actual amount of your grant when the project is complete and EFC confirms the final project costs. Your grant may be reduced if total project costs are less than anticipated or if your project receives grant from another source.

Please confirm your acceptance of the grant award and intent to proceed with this project by completing and signing the enclosed form and e-mailing it to nyswatergrants@efc.ny.gov no later than **October 27, 2017**. Without your confirmation, we may bypass your project and award these grant funds to another community. If you choose to proceed with entering into a Clean Water State Revolving Fund (CWSRF) project finance agreement with EFC, unless otherwise notified by the Corporation, the Town must execute an agreement with EFC no later than April 15, 2019 or the grant award may be forfeited.

Upon receipt of the confirmation, members of our EFC and DOH team will contact you to guide you through the program requirements and financing process and to answer any of your questions.

We appreciate your interest in the WIIA program. We look forward to working with you on your water quality improvement project.

Sincerely,

Sabrina M. Ty
President and CEO

Enclosure

cc.: Dunn & Sgromo Engineers, PLLC – Mr. John C. Dunkle
Town of Nelson – Ms. Debbie Costello

APPENDIX Q

Median Property Values

TOWNS OF CAZENOVIA and NELSON

ROUTE 20 WATER DISTRICT

IN ORDER OF ASSESSMENTS - RESIDENTIAL

December 11, 2017

Parcel #	Name	Address	Assessment	Type	Approximate Range of Individual Annual Financing Costs for $1.06 Million 30-yrs @ 4% ($3.10/$1,000)
107.-3-40.3	Macheda, Richard J	2628 Route 20 East	$ 295,000	Single-family Home	$ 915
95.3-2-30	Moore, Timothy A	2537 Route 20 East	$ 250,000	Single-family Home	$ 775
96.-1-3	Lamb, Michael & Steven	2827 Route 20	$ 207,700	Single-family Home	$ 645
107.8-2-4	Marion, John E.	2762 Route 20 East	$ 170,000	Single-family Home	$ 530
107.-3-41.1	Travis, Stephen H	2560 Route 20 East	$ 165,000	Single-family Home	$ 515
107.-3-41.2	Yoder, Sandra D	2570 Route 20 East	$ 160,000	Single-family Home	$ 500
95.3-2-31	Liberatore, Joseph A	2543 Route 20 East	$ 141,000	Single-family Home	$ 440
107.8-2-2	Markol Real Estate Partnership	Route 20 East	$ 131,500	Single-family Home	$ 410
107.8-2-8	LaFever, Howard B.	2778 Route 20	$ 125,000	Single-family Home	$ 390
95.3-2-23	Cochrane, Terence	2500 Route 20 East	$ 105,000	Single-family Home	$ 330
107.8-2-7	Bergman, Jody P.	2776 Route 20 East	$ 79,900	Single-family Home	$ 250
			$1,830,100.00		

Median

Mean = $1,830,100/11 = $166,372

TOWNS OF CAZENOVIA and NELSON

ROUTE 20 WATER DISTRICT

IN ORDER OF ASSESSMENTS

December 14, 2017

Parcel #	Name	Address	Assessment	Type	Approximate Range of Individual Annual Financing Costs for $1.06 Million 30-yrs @ 4% ($3.10/$1,000)
95.-3-4.4	Marquardt Switches, Inc.	2711 Route 20	$3,996,000	Manufacturing	$12,390
95.-3-4.5	Dielectric Labs Inc	2777 Route 20	$3,300,000	Manufacturing	$10,230
95.-1-9.2	Ten Albany, LLC	1 Remington Park Drive	$3,200,000	Offices	$ 9,920
95.-3-4.312	Community Memorial Hospital	3045 John A Trush Jr. Blvd	$1,033,000	Medical Facility	$ 3,205
95.-1-9.1	Love-Frazee Associates, LLC	Route 20 East	$ 725,000	Farm Equipment Sales/Repair	$ 2,250
95.-3-4.32	Cazenovia Children's	2757 Route 20	$ 606,200	Daycare Center	$ 1,880
95.3-2-29	Romagnoli, Mary Beth	2527 Route 20 East	$ 560,000	Single-family Home/Event Center	$ 1,740
95.-3-4.6	Trim Tronics Inc.	3066 Route 20	$ 539,200	Manufacturing	$ 1,675
107.-2-1.1	Walking Partners, LLC	2684 Route 20	$ 535,500	Self-Storage Facility	$ 1,660
107.8-2-1	Holmes, Koennecke	2750 Route 20	$ 396,500	Veterinarian	$ 1,330
107.8-2-46	Nelson Recamp Realty Inc.	2808 Route 20 East	$ 357,800	Auto Repair/3 Efficiency Apts.	$ 1,110
107.-3-40.3	Macheda, Richard J	2628 Route 20 East	$ 295,000	Single-family Home	$ 915
107.-3-43	Cherry Valley Development Inc.	2662 Route 20 East	$ 295,000	Commercial/Office	$ 915
107.8-2-3	Cazenovia Central School	2760 Route 20	$ 283,600	Bus Garage	$ 880
107.8-2-5	Hughes, Parnell J. & Sandra	4157 Midstate Lane	$ 274,100	Storage & Retail	$ 850
95.3-2-30	Moore, Timothy A	2537 Route 20 East	$ 250,000	Single-family Home	$ 775
107.-2-1.5	New Venture Assets LLC	2708 Route 20	$ 240,000	Auto Parts Store	$ 745
96.-1-3	Lamb, Michael & Steven	2827 Route 20	$ 207,700	Single-family Home	$ 645
107.8-2-31	Automatic Utilities	2830 Route 20 East	$ 195,100	Service Facility	$ 605
107.-3-42	Cazenovia 2652, LLC	2652 Route 20 East	$ 185,000	Commercial/Office	$ 575
95.3-2-29.1	Romagnoli, Mary Beth	Route 20 East	$ 175,900	Vacant Land	$ 550
107.8-2-32	Cazenovia Universal Truth	2836 Route 20	$ 170,000	Meeting Space	$ 530
107.8-2-4	Marion, John E.	2762 Route 20 East	$ 170,000	Single-family Home	$ 530
95.-1-9	Cazenovia Restoration Corp.	Route 20 East	$ 165,000	Vacant Land	$ 515
107.-3-41.1	Travis, Stephen H	2560 Route 20 East	$ 165,000	Single-family Home	$ 515
107.-3-41.2	Yoder, Sandra D	2570 Route 20 East	$ 160,000	Single-family Home	$ 500

Median

December 14, 2017

Parcel #	Name	Address	Assessment	Type	Approximate Range of Individual Annual Financing Costs for $1.06 Million 30-yrs @ 4% ($3.10/$1,000)
95.-3-5.2	Pelco Properties Inc.	2747 Trush Boulevard	$ 147,500	Manufacturing	$ 460
107.-3-29.2	PT Holdings of Cazenovia, LLC	Stone Quarry Road	$ 144,000	Vacant Land	$ 450
95.3-2-31	Liberatore, Joseph A	2543 Route 20 East	$ 141,000	Single-family Home	$ 440
107.8-2-2	Markol Real Estate Partnership	Route 20 East	$ 131,500	Single-family Home	$ 410
107.8-2-8	LaFever, Howard B.	2778 Route 20	$ 125,000	Single-family Home	$ 390
107.-3-40	PT Holdings of Cazenovia, LLC	Route 20 East	$ 111,200	Vacant Land	$ 345
95.3-2-23	Cochrane, Terence	2500 Route 20 East	$ 105,000	Single-family Home	$ 330
107.8-2-7	Bergman, Jody P.	2776 Route 20 East	$ 79,900	Single-family Home	$ 250
95.-3-4.1	Trush Inc.	Route 20	$ 74,900	Vacant Land	$ 235
107.-2-1.3	Markol Real Estate Partnership	Moseley Road	$ 60,000	Vacant Land	$ 190
95.3-2-33	Cazenovia Commons, LLC	2567 Route 20 East	$ 55,000	Vacant Land	$ 175
107.-3-44.11	Skanda Farms, LLC	Route 20 East	$ 41,100	Vacant Land	$ 130
107.8-2-44	Irwin, James E.	Route 20	$ 33,500	Vacant Land	$ 105
107.-3-41.3	PT Holdings of Cazenovia, LLC	Route 20 East	$ 31,600	Vacant Land	$ 100
107.8-2-19	Windstream New York, Inc.	Midstate Lane	$ 26,200	Vacant Land	$ 85
107.8-2-39	Automatic Utilities	Route 20	$ 24,000	Vacant Land	$ 75
95.-3-5.1	Trush Inc.	3018 John A Trush Jr. Blvd	$ 11,000	Vacant Land	$ 35
107.8-2-9	Moss, Jeffrey R. & Sterling, Elizabeth	Nelson Heights	$ 4,700	Vacant Land	$ 15
95.3-2-32	Romagnoli, Mary Beth	Route 20 East	$ 2,600	Vacant Land	$ 10
			$19,830,300.00		

Mean = $19,830,300/45 = $440,673