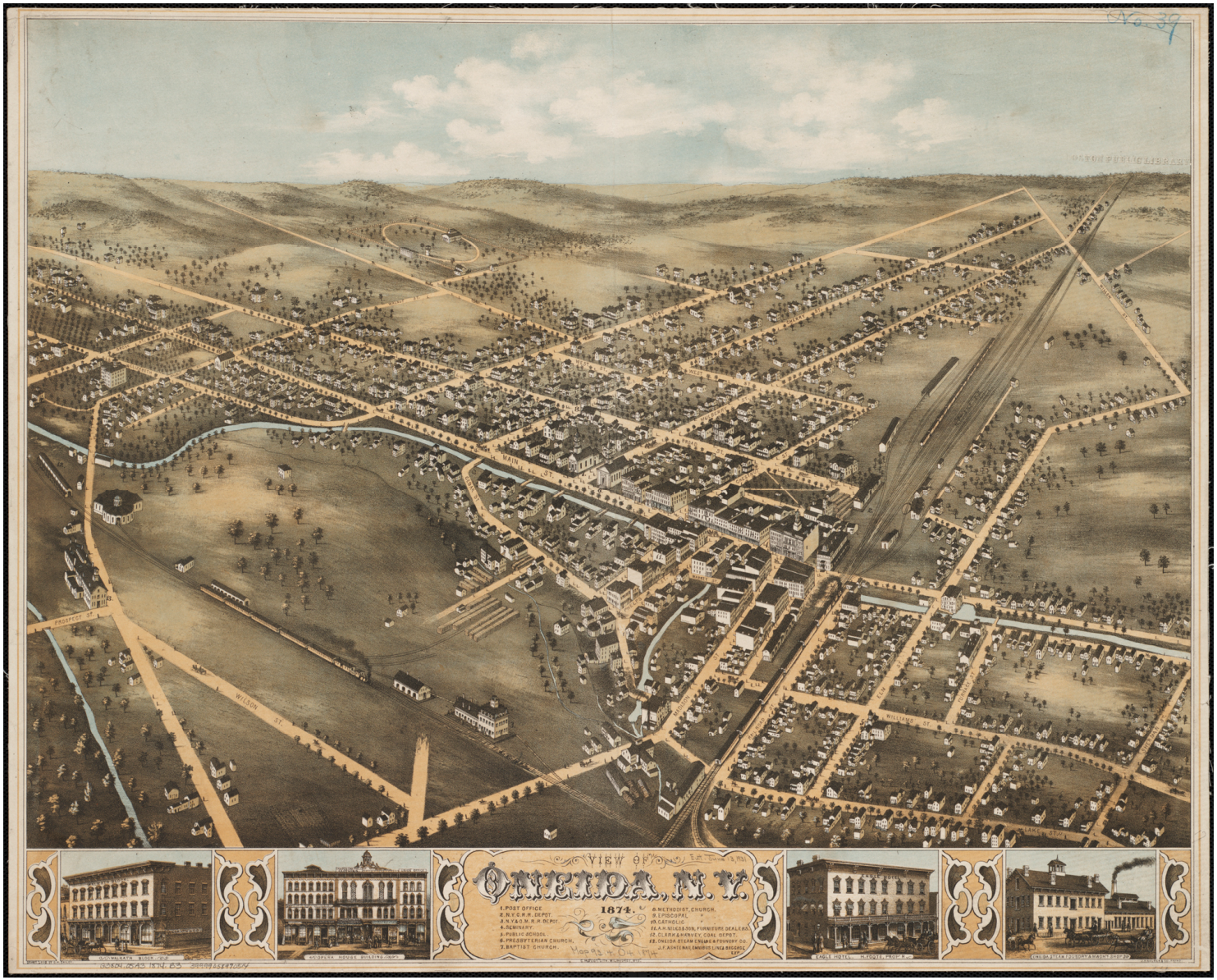
Navitas
CONSERVING RESOURCES • RENEWING FACILITIES

3 Customers and a Consent Order

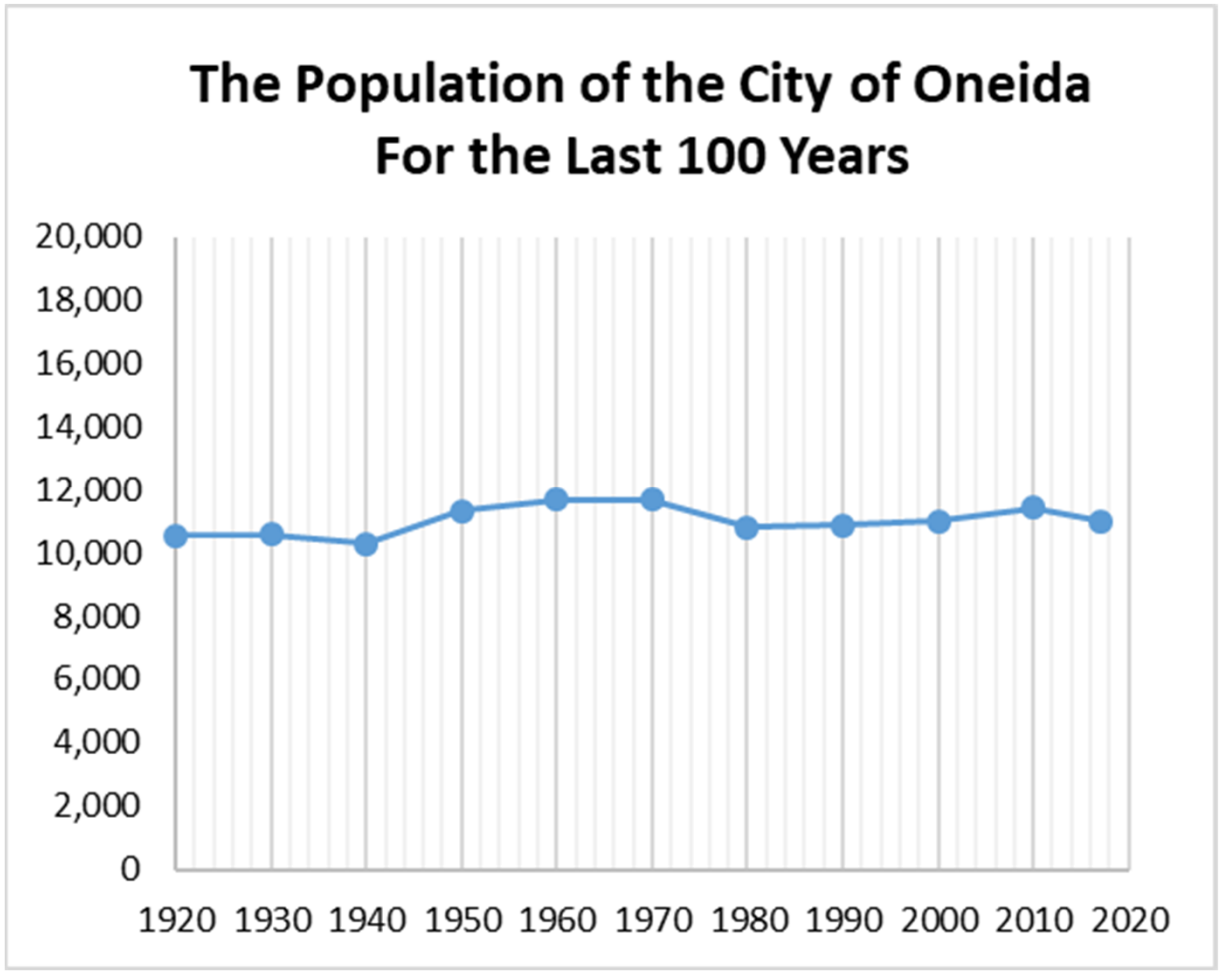
Dennis Clough, DBIA
Managing Director, Infrastructure Solutions
June 10, 2021


VIEW OF
ONEIDA, N. Y.
1874.
1. POST OFFICE
2. N.Y.C.R.R. DEPOT.
3. N.Y.& O.M.R.R. DEPOT.
4. SEMINARY.
5. PUBLIC SCHOOL.
6. PRESBYTERIAN CHURCH.
7. BAPTIST CHURCH.
8. METHODIST CHURCH.
9. EPISCOPAL.
10. CATHOLIC.
11. A.H. WILCOX & SON, FURNITURE DEALERS.
12. CLARK & KENYEY, COAL DEPOT.
13. ONEIDA STEAM ENGINE & FOUNDRY CO.
14. J.F. ADSIT AND OTHERS LINEN FACTORY.
MAIN ST.
PROSPECT ST.
WILSON ST.
WILLIAMS ST.
EAGLE HOTEL. M. FOOTE, PROP'R.

Madison Street during a Celebration, Oneida, N. Y.

Leave Oneida 5 2 9 oclock. Mrs Landers.

Main Street, Oneida, N. Y.


The Population of the City of Oneida
For the Last 100 Years
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1920 1930 1940 1950 1960 1970 1980 1990 2000 2010 2020

The Three Customers

- The Rate Payers (3,050 accounts)
- The Town of Verona, NY (including Turning Stone Casino)
- A large dairy products producer and City's largest industrial user.

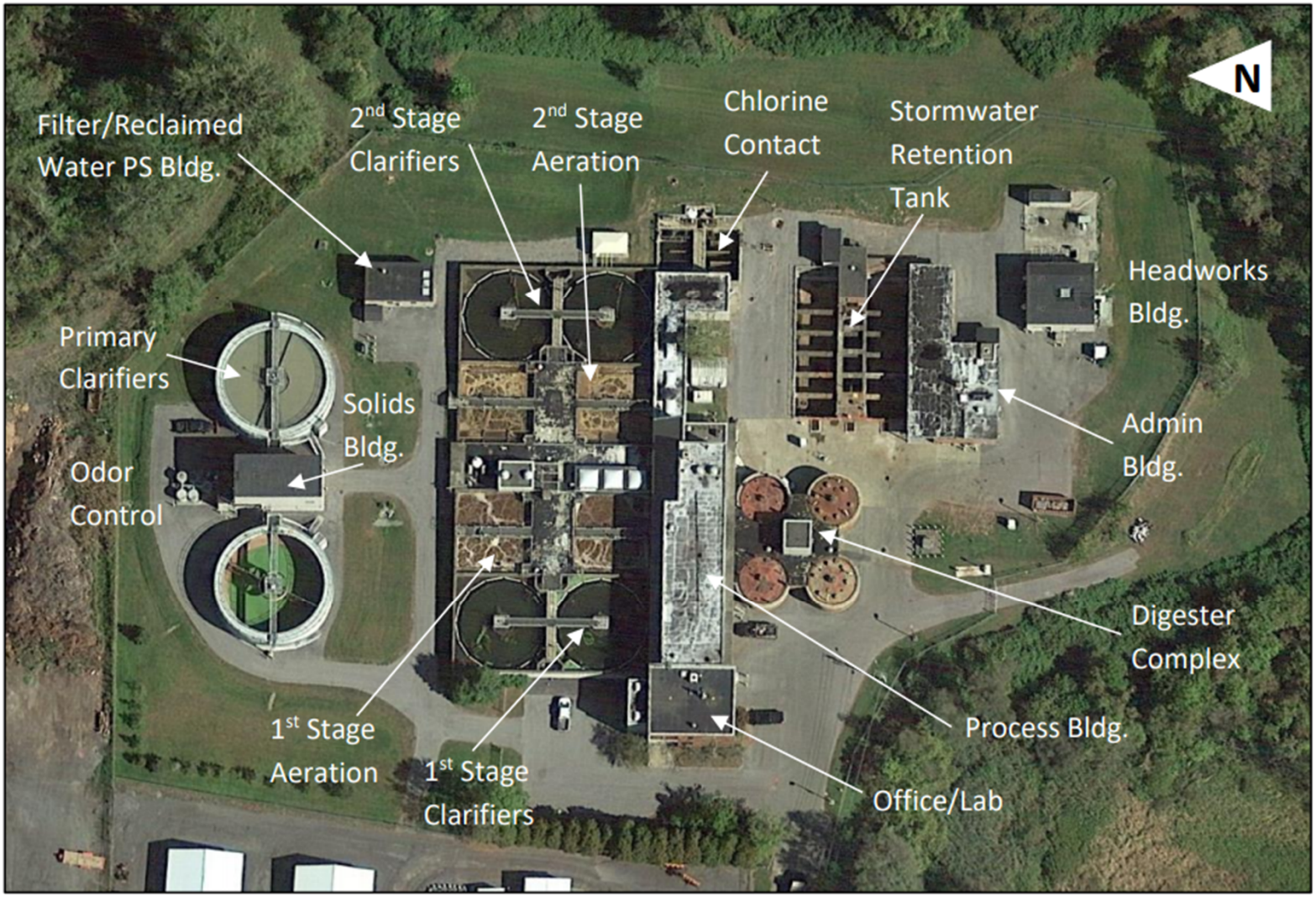
- In 2017, Sewer Revenues were $2.36M
  - Dairy Products Producer was $998,000 or 40% of total revenues.
- Sewer expenses exceeded revenue annually, quickly depleting reserve funds.

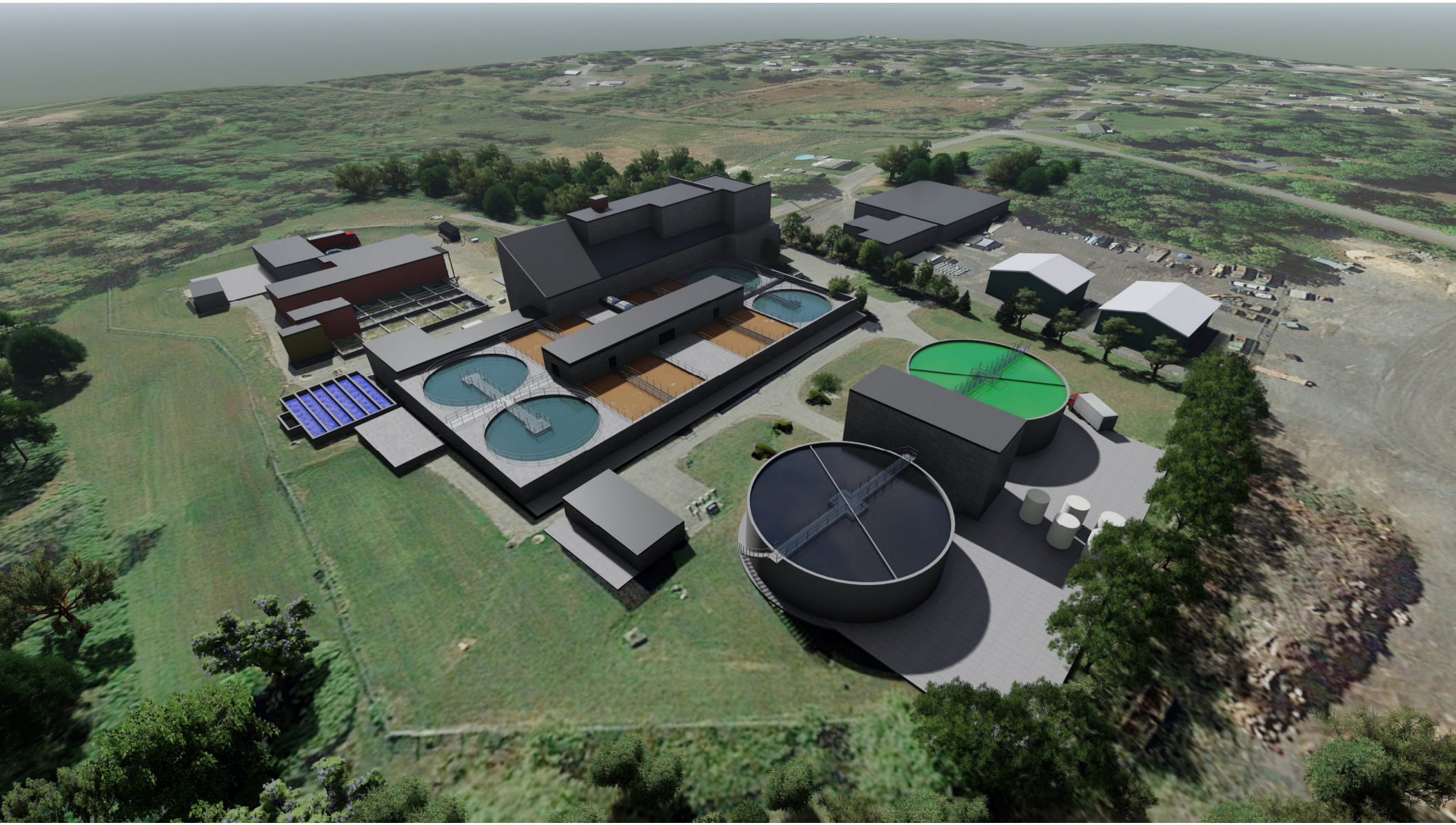
The Consent Order

- Violations
  - A total of 59 Exceedances of SPDES permit limit for Total Residual Chlorine, Fecal Coliform, Ultimate Oxygen Demand, Total Suspended Solids, Settleable Solids, Total Suspended Solids – Percent Removal, Ammonia between July 1, 2014 and December 31, 2015.

- Compliance
  - Short term improvements – replace fouled diffusers in secondary treatment aeration system *(PREVIOUSLY COMPLETED)*

  - A plan that outlines long term improvements to be completed at the Oneida WWTP that will allow the WWTP to treat current and future loadings and consistently meet SPDES Permit effluent limitations.


N
Filter/Reclaimed Water PS Bldg.
2nd Stage Clarifiers
2nd Stage Aeration
Chlorine Contact
Stormwater Retention Tank
Headworks Bldg.
Primary Clarifiers
Solids Bldg.
Odor Control
Admin Bldg.
Digester Complex
Process Bldg.
1st Stage Aeration
1st Stage Clarifiers
Office/Lab



Challenges

- Technical - List of “Primary Deficiencies” from City
  - Digester Complex
  - Secondary Aeration Tanks/Settling
  - DAF Units
  - Belt Press
  - SCADA
  - RAS Pumps/WAS Pumps
  - Grit System
  - Plant Waste Pump Station
  - Primary Odor Control System
  - VFD’s for Blowers
  - HVAC
  - Code Compliance
- Financial
  - No history of rate increases
  - Need greater revenue diversity
  - Funding typically requires bond vote by public
- Business
  - Need for more economic development
- People
  - Limited city staffing
  - City engineer and assistant
  - Chief plant operator nearing retirement
- Time
  - Consent Order schedule obligations

Collaborative Project Delivery

- Enabled by *New York State Energy Law Article 9: Energy Performance Contracts in Connection with Public Buildings and Facilities*
  - Originally enabled in 1985, it is one of the oldest pieces of performance contracting legislation in the United States.
- Only collaborative project delivery method available to municipal government in NY.
- A few key features of the legislation are:
  - Section 135 of the New York State Finance Law for Multiple Prime Contracts, commonly known as the "Wicks Law," does not apply.
  - Project savings and new revenue do not have to fully cover the cost of the project.
  - Selecting the responsible lowest bidder is not required.

- Purpose is to select partner team for project, not lowest cost responsible bidder. Similar to professional services
- May be qualifications based or quals plus some project technical/cost evaluation
- Owner determines requested information and evaluation criteria, 30 to 45-day proposal response time typical

- Single contract for all necessary activities from concept to negotiated scope of work and price for construction
- Includes technical evaluation, engineering design, financial modeling, construction pricing, permitting, savings/revenue guarantee
- Can be structured in two phases: scope alternatives & detailed design and pricing
- Final deliverable is a negotiated energy performance contract, proposed for Owner approval
- PDA does not commit Owner to construction contract

- Single contract for all remaining design and permitting, construction, and start-up.
- Engineer of record, key trades, equipment suppliers, and others are all subs to the Energy Service Company
- Design error change order risk to Owner eliminated. Risk limited to differing site conditions, force majeure and owner - initiated changes
- Contract is typically fixed price
- Savings/revenue guarantee verification included

Table 7-1: Summary of Feasible Alternatives

	Alternative 1	Alternative 2	Alternative 3
Dairy Pretreatment	Dairy EQ DAF & USAB	Dairy EQ CAST	Dairy EQ CAST
Secondary Treatment	Retrofit Existing with Ballasted via Magnetite	Expand Aeration New Final Clarifiers	SBR Decant EQ
HSOW & Digestion	Digester for DAF float & HP Hood HSOW	HSOW Receiving HSOW EQ Digestion Complex	HSOW Receiving HSOW EQ Digestion Complex

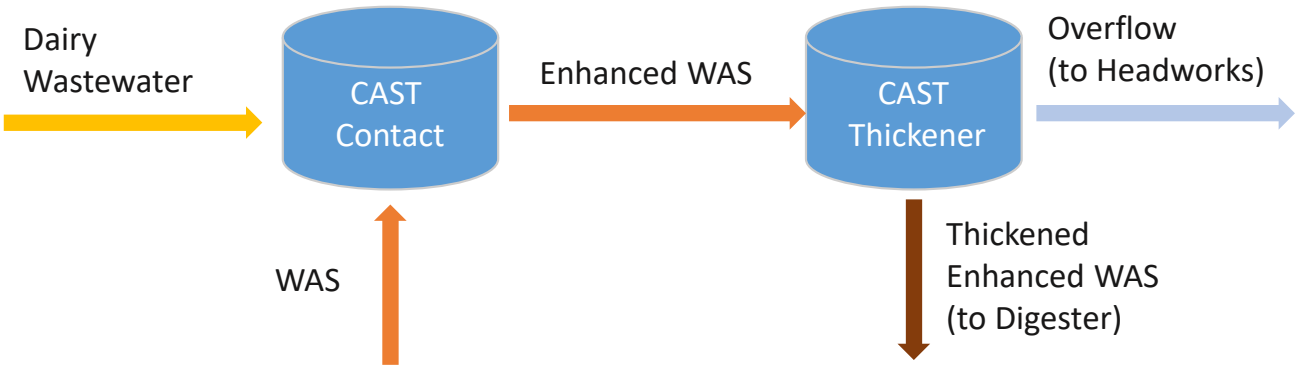
Table 7-2: Summary of Alternatives Net Present Value Costs

	Alternative 1	Alternative 2	Alternative 3
Estimated Project Cost	$49,984,000	$44,055,000	$48,684,000
30-year O&M NPV Cost	$18,345,000	$7,245,000	$7,065,000
Total NPV Cost	**$68,329,000**	**$51,300,000**	**$55,749,000**

Options Considered

CAST Process - Overview

- Contact Adsorption Settling Thickening (CAST)
- Uses WAS to adsorb influent organic load from dairy wash water
  - Reduces organic loading to liquid process
  - Increases feed to digesters & biogas production increases



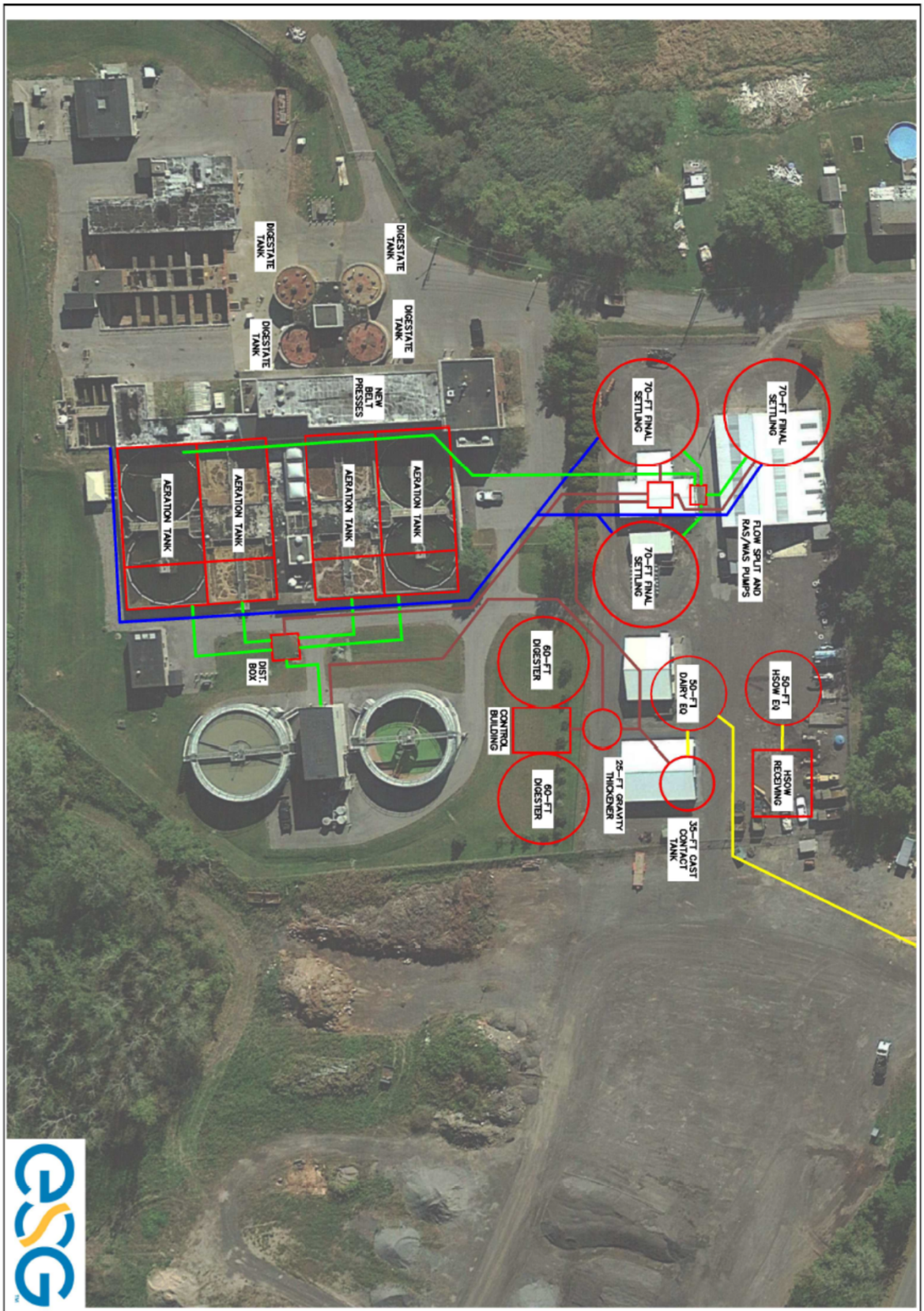
Recommended Approach – Alternative 2

- CAST Pretreatment
- Expanded Aeration
- HSOW Acceptance

Table 8-1: Recommended Alternative Basis of Design Summary

Area	Item	Design
Dairy Acceptance	Dairy Influent Pumps	416 gpm
	Dairy Influent Forcemain	6-in diameter 15,350 feet
	Dairy Equalization Tank	50-ft diameter
	CAST Contact Tank	35-ft diameter
Biologic Treatment	Aeration Tank Modifications	
	Aeration Equipment Modifications	
	Final Clarifiers	Qty: 3 70-ft diameter
Anaerobic Digestion	HSOW Receiving Station	
	HSOW Equalization Tank	50-ft diameter
	Gravity Thickener	25-ft diameter
	Primary Digesters	Qty: 2 60-ft diameter
	Digester Control Building	

Plotted: Apr 29, 2019 – 8:14AM SYR By: jds
Z:\BL-Vault\D2\18217AD2-1C71-4823-8927-99D5C4054147\0\1738000-1738999\1738725\L\L\1808.006 (C) Oneida WWTP Improvement Concept Figures (ID 1738725).dwg



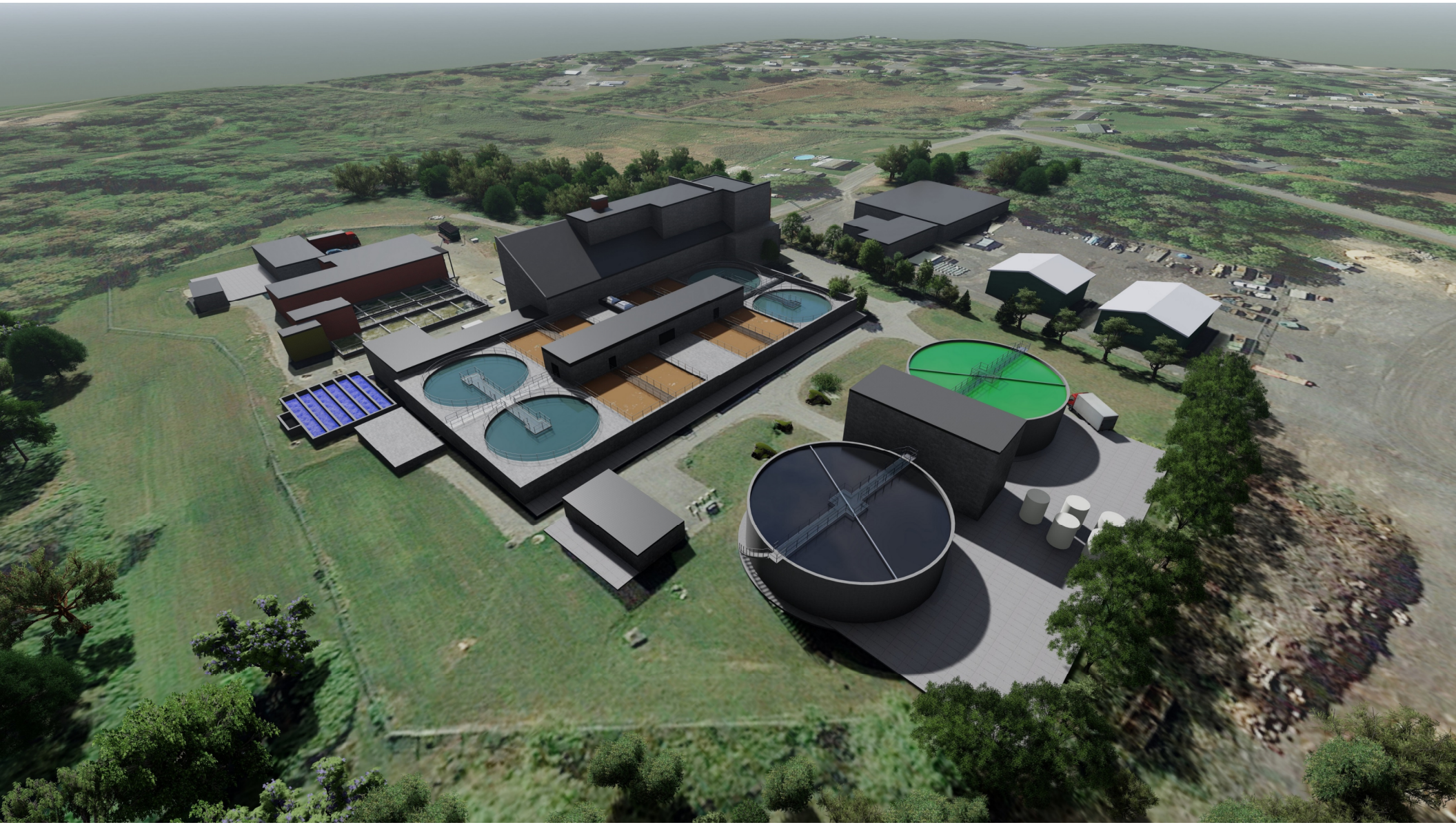
Project Number	P702.3198
Figure Number	FIG-X
Scale	AS SHOWN
Date	JANUARY, 2019

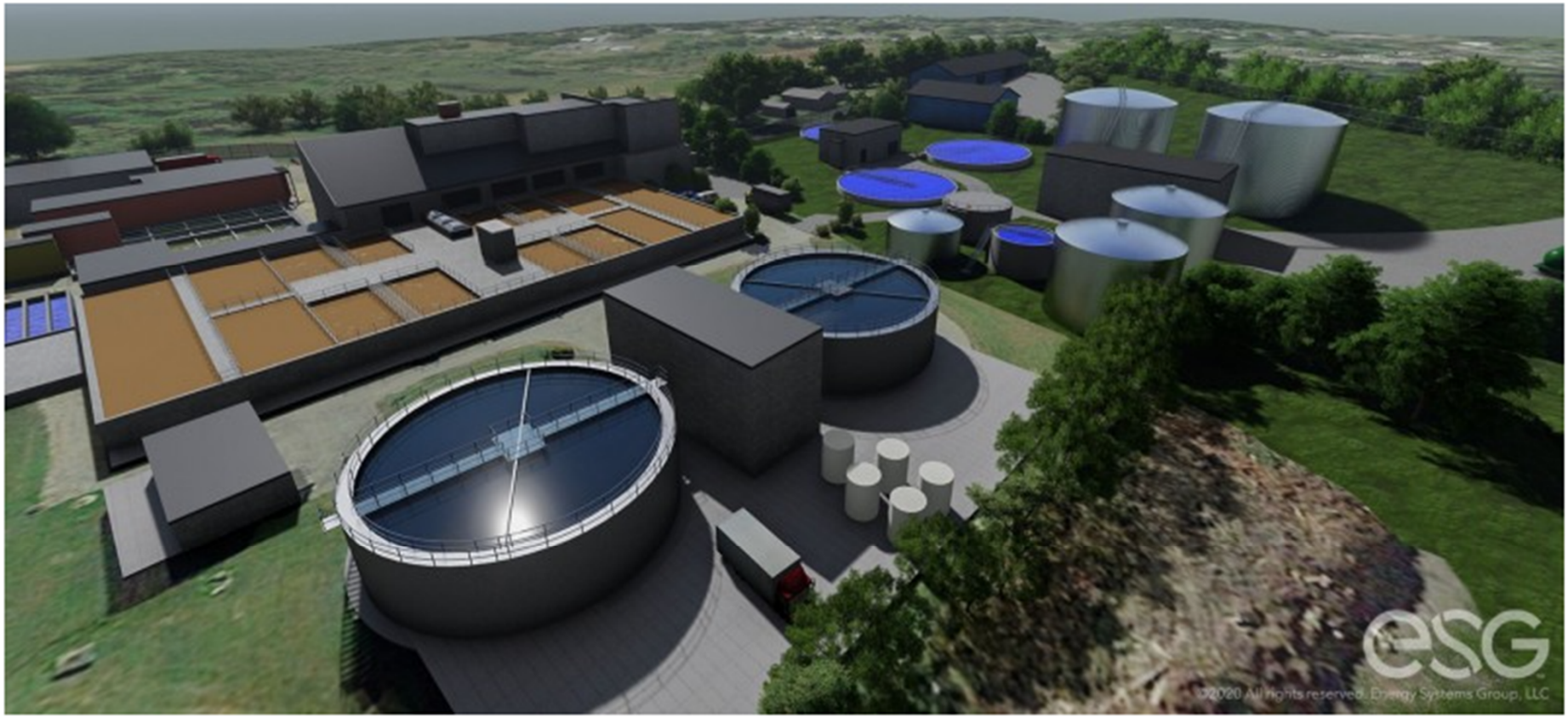
Barton & Loguidice

CITY OF ONEIDA
WASTEWATER TREATMENT FACILITIES
LONG TERM IMPROVEMENT PROJECT

ALTERNATIVE 2 – AERATION, CLARIFIERS HSOW PROCESSING AND NEW DIGESTER

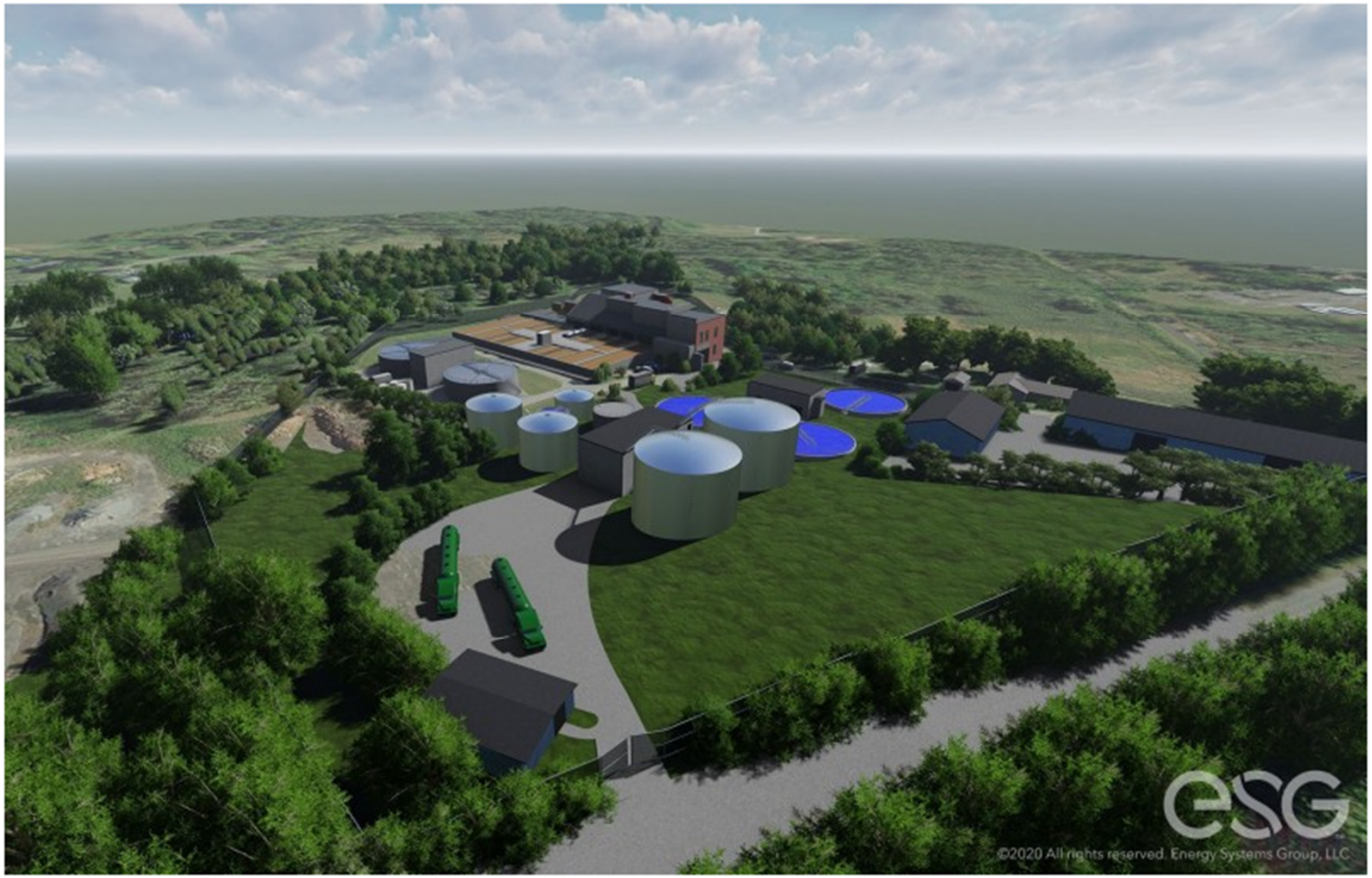
CITY OF ONEIDA MADISON COUNTY, NEW YORK





ESG City of Oneida Organics and Water Resource Recovery Center Project 2

ESG City of Oneida Organics and Water Resource Recovery Center Project Rendering 1



ESG City of Oneida Organics and Water Resource Recovery Center Project 3

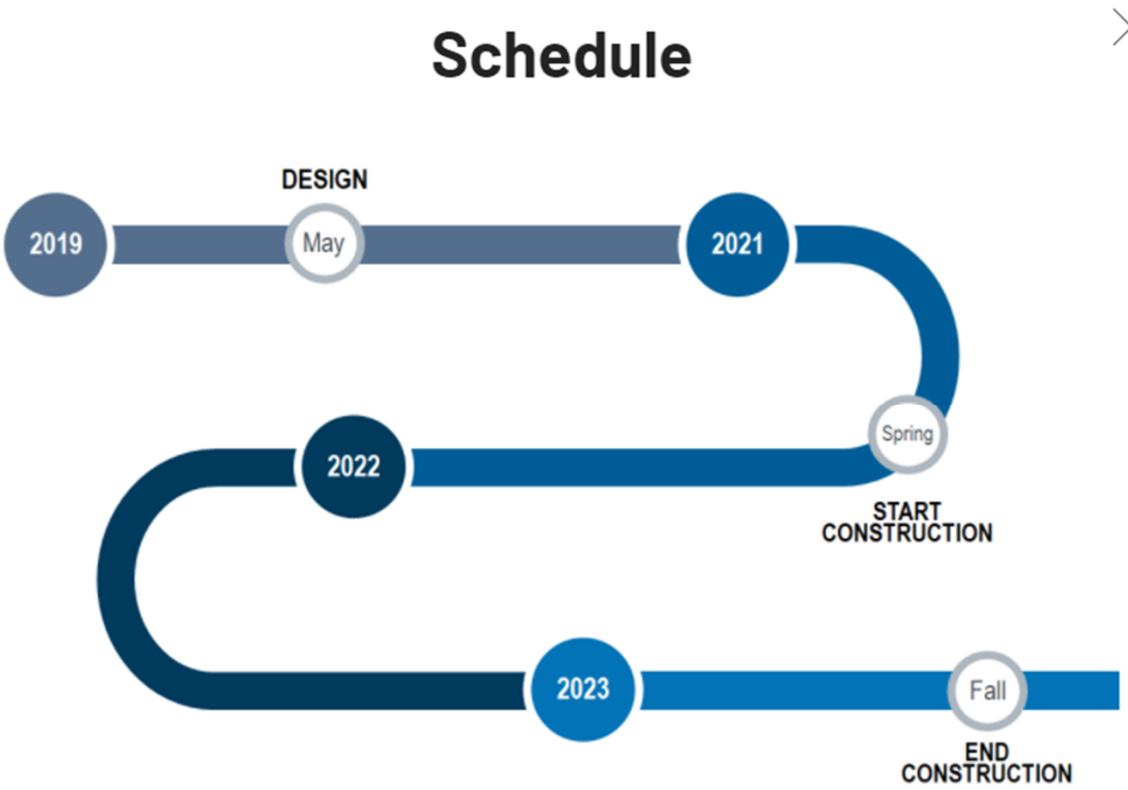
Long Term Improvements

- New 2 ½ mile Dairy Products Producer dedicated pipeline
- New CAST dairy pretreatment system
- Aeration tanks expansion and improvements
- (3) new 70 foot diameter secondary clarifiers
- New activated sludge control building
- (2) new 600,000 gallon anaerobic digesters
- New digester control building
- New biogas flare
- (2) new gravity thickeners
- (2) new 3 meter belt filter presses
- New biosolids conveyance & truck loading system
- New organic waste receiving and processing system
- New plant-wide primary electric service
- New 1,000 kilowatt backup power generator
- New DPW storage facility
- New Police storage facility
- New site fencing and security system
- New plant-wide WIFI system
- New SCADA plant control system
- Upgraded electrical and mechanical systems for code compliance

Project Team and Schedule

- Energy System Group – Prime Contractor
- Barton & Loguidice – Engineer of Record
- WM Schultz – Process Mechanical & Structural
- Amaha – Electrical
- Aqualogics – I&C/Integration
- Critical Path Engineering Solutions – Industrial Pretreatment
- DN Tanks - Digesters

- Project Website
  - www.energysystemsgroup.com/oneida/



Results for the City of Oneida

- Environmental Protection and Beneficial Reuse of Natural Resources
- Business Retention and Future Economic Development
- Expansion of Traditional Customer Base and Improved Revenue Diversity
- Smart Operation and Capital Cost Management

Questions?

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