Wastewater Treatment Plant
Long-Term Capital Plan
(Contract #CK-EDSP-2014-002)

PREPARED FOR

City of Kingston, New York

June 6, 2014
June 6, 2014

Gregg Swanzey, Director
Office of Economic Development & Strategic Partnerships
City of Kingston
420 Broadway
Kingston, NY 12401

Re: Wastewater Treatment Plant Long-Term Capital Plan, Contract # CK - EDSP - 2014 - 002

File: 702.2478

Dear Mr. Swanzey:

Since 2009 there have been 11 major disaster declarations in New York State. With the increase in extreme weather events, the State and the Federal Government have started to make funding available for projects that improve infrastructure resiliency and hardening. Resiliency refers to the ability of a system to recover quickly or continue working despite damage, while hardening refers to a physical change to make a component less susceptible to damage.

Like many other Hudson Valley communities, the City of Kingston has been hard hit by flooding in extreme weather. To improve resiliency and hardening of its wastewater treatment system, the City’s Waterfront Tidal Flooding Task Force has developed a long-term plan. The ultimate goal of your long-term capital plan will be to optimize funding opportunities and provide a plan that is financially feasible. Barton & Loguidice (B&L) is well-suited to help you achieve that goal. As you will find in the attachment section of this proposal, we have completed several regional, multi-community water and wastewater studies that evaluated the most cost-effective approach to improve resiliency and hardening and to foster smart growth.

This project also offers an opportunity to incorporate energy efficient design elements and green infrastructure into the City’s Wastewater Treatment System. As a NYSERDA FlexTech consultant, B&L has done this in many of our wastewater treatment system designs.

We look forward to speaking with you further about how B&L can help you achieve your goals. Please contact me if you require additional information.

Regards,

BARTON & LOGUIDICE, D.P.C.

[Signature]

Donald H. Fletcher, P.E.
Vice President
Project Proposal

Wastewater Treatment Plant Long-Term Capital Plan
for the City of Kingston

Contract #CK-EDSP-2014-002
Barton & Loguidice (B&L) has been engaged in the practice of professional engineering since 1961. As a multi-disciplined firm with more than 200 staff members, B&L will provide the City of Kingston with the complete range of services requested for the Wastewater Treatment Plant Long Term Capital Plan, while still being small enough to provide the personal, locally based attention that the City needs.

B&L is well-suited to assist the City of Kingston with the Wastewater Treatment Plant Long Term Capital Plan. Our team is in the process of completing or has completed several regional, multi community water and/or wastewater studies in order to evaluate the most cost effective approach for communities to foster smart growth. These include:

- Identifying improvement options for the Saratoga County Sewer District and their currently proposed North Plant;
- Identifying areas of additional sewerage for the Adirondack Gateway Council (8 communities in total) and impacts to the City of Glens Falls and Washington County Sewer District #2 treatment plants;
- Developing a plan for the Regionalization of the wastewater treatment facilities for the Village of Watkins Glenn.

We have extensive experience working with communities large and small, as well as urban, suburban and rural communities.

Understanding of the Work to be Done

Like many treatment plants along the Lower Hudson Valley, the City of Kingston’s wastewater treatment plant was inundated with the storm surge and high tides associated with Superstorm Sandy. In addition, flooding along the Rondout impacted the treatment plant during Tropical Storm Lee and Hurricane Irene. Following this, the City created a Kingston Waterfront Tidal Flooding Task Force which developed a comprehensive final report and Long Term Resiliency Plan identifying that the wastewater treatment plant required hardening or possibly relocation. This plan identified up to 20 structures that could be removed from the Rondout floodplain and out of the 500-foot flood zone. This would ensure resiliency and effectively climate harden one of the City’s most vital assets. In addition, the plan identified several recommendations for the Strand neighborhood near the plant. Relocation out of the floodplain would achieve several other short- and long-term goals identified in the Plan in concert with the Mid Hudson Region Sustainability Plan, such as increasing access to open green space and waterfronts, reducing energy usage and decreasing dependency on fossil fuels with more energy efficient equipment, and improving overall reliability of the Wastewater Treatment and Collection System.

A consensus building approach will enable the City of Kingston to arrive at an effective flood mitigation and sea level rise protection and regionalization study. The success of the project will be supported by B&L’s strong professional capabilities and experience, as well as our proactive communication philosophy. Increased stakeholder involvement throughout the decision making process will facilitate development of the best solutions for the City’s unique needs.

Scope of Services

B&L proposes the following Scope of Services to assist the City of Kingston with the preparation of an Engineering Planning Report for alternatives to mitigate against future and increasing hazards from flooding and sea level rise in the Strand Neighborhood, and particularly the wastewater treatment plant (WWTP) currently serving the City.

1.0 Engineering Planning Report (EPR)

Under this scope of services, B&L will complete the engineering services necessary to develop an Engineering Planning Report (EPR) for the WWTP. The EPR will be prepared in compliance with NYS Environmental Facilities Corporation’s requirements for Engineering Reports necessary for inclusion of the project on the 2013/2014 CWSRF Intended Use Plan’s Annual List, including approval from the NYS Department of Environmental Conservation, Ten States Standards (10-States) and Guides for the Design of Wastewater Treatment Works (TR-16).

1.1 Historical Data Review

B&L will obtain available historical data, reports, mapping, etc., from the City, contracted operator, and applicable regulatory agencies (NYSDEC, NYSDOH, etc.) with respect to existing service areas design, operational record/reports, and maintenance budget, and performance data for the existing WWTP (most recent three (3) years); etc., to gain a thorough understanding of
the needs and goals of project. We will review this information in preparation for the Kick-off Workshop. To the greatest extent practical, information previously prepared will be used to reduce the evaluation effort.

1.2 Kick-Off Meeting - Workshop No. 1
B&L will schedule and attend Kick-Off Workshop No. 1 to be held with the City, Contracted Operator and other Project Stakeholders (if agreeable to the City). The purpose of Workshop No. 1 will be to:

- Introduce the B&L Project Team and Project Stakeholders.
- Establish lines of communication.
- Discuss the City’ current and future needs for wastewater treatment capacity as it relates to development trends and plans.
- Discuss available funding options and strategy/schedule for approaching other funding agencies.
- Identify the current service areas; identify the potential service area for a 20-year planning period; review available planning documentation (e.g. master plan or comprehensive plan) for the current and proposed service area.
- Identify WWTP location selections.
- Discussion of WWTP treatment technology and short listing of viable treatment technologies and energy conservation measures for the various unit processes

The Workshop is intended to be an open discussion meeting between B&L and all project stakeholders to gain an understanding of their project needs and goals.

1.3 Proposed Sewer Service Area and WPCF Site Visit
After the Kickoff Meeting, B&L will conduct a site visit to the existing WWTP with the contracted operators (and any interested stakeholders) to gain an understanding of current operations/processes, plant/equipment condition, deficiencies, etc., and to discuss potential alternatives and constructability issues. Existing WWTP unit process equipment and facilities will be inspected to assess condition and potential for rehabilitation versus replacement or relocation. Potential improvements will be discussed conceptually to determine constructability, access and maintenance concerns.

1.4 Establish Current and Future Design Flows and Loads
B&L will review and summarize the Discharge Monitoring Reports (DMRs) for latest three (3) years for the WWTP estimate current daily, maximum daily/monthly, peak hourly, and dry weather flows for the WWTP. We will summarize existing conditions and available treatment capacity (through desktop inventories) and project growth-needs assessment to serve existing sewer needs and evaluate infrastructure requirements to serve future services within the City and surrounding area for the next 20-25 years (25 year growth projection assumed) (with local, State and federal data and information; assistance from region, NYS, federal officials and agencies; and utilization of GIS mapping); B&L to prepare a summary memo of needed existing information and the City Economic Development Office to gather and provide this information to B&L in hard copy (electronic form if available). No field work is included in the inventory services.

1.5 WPCF Effluent Parameters
In a letter to the NYSDEC, B&L will request a preliminary determination of effluent discharge parameters for the WWTP given the likely improvements, we will also ask for preliminary effluent discharge parameters for up to one (1) relocation site. These parameters, which would be the SPDES permit limits, will dictate what alternative unit processes are evaluated.

1.6 Alternative Process Evaluations
To meet the requirements of NYSEFC, and as generally good practice, B&L will complete alternative analysis of several major process components. The evaluations will be coupled with an overall identification of needs and deficiencies throughout the WWTP. Additionally, the recommendations from the process evaluations will be incorporated into the recommended alternative for the overall Long Term Capital Improvement Plan.

The evaluations will generally identify conceptual improvements for each alternative (up to three alternatives are included: 1) rehabilitate existing facilities, 2) reconstruct facilities within the existing plant site and 3) relocation to a new site identified by the City. The analysis will discuss constructability, identify life cycle costs (including energy costs), compare the benefits of the compared alternatives, evaluate performance and reliability of the evaluated alternatives and recommend an alternative based on all factors. Provide recommendations for technical and economic feasibility of taking a regional approach to wastewater, including treatment options/alternatives for:
1. Availability of land for expansion at current wastewater treatment site in the Strand Neighborhood

2. Examination of the feasibility of expanding current facilities to handle the flood mitigation measures and sea level rise as well as the impact of full build out for existing service areas within City boundaries, including collection of sewage and identify impediments.

3. Outline conveyance options and connectivity of adjacent hamlets to the existing facilities and/or the proposed regional site.

4. Incorporate with study proposed cost for preventing sanitary sewer overflows within the City of Kingston, addressing storm water runoff, new station locations and controlling combined sewer overflows within the service region. B&L will review the City of Kingston Long Term Control Plan (LTCP) and include recommended improvements and associated costs as appropriate.

B&L will solicit technical data, preliminary design and equipment selection and obtain budgetary estimates from the various manufacturers’ representatives. Alternatives will be evaluated in consideration of proposed design flows and loads and preliminary effluent discharge limits provided by the NYSDEC. The following major processes would be evaluated:

1. **Influent Pump Station** – The Plant Influent Pump Station will be evaluated for potential upgrades to submersible pumps or self-priming centrifugal pumps, along with standby power and/or bypass pumping facilities.

2. **Headworks Facility** - Evaluate master meter technologies and configurations, screening technologies and alternative grit removal facilities.

3. **Primary Settling, Biological Treatment and Secondary Settling, UV Disinfection** - Evaluate three (3) alternative WWTP treatment technologies (e.g. conventional activated sludge, sequencing batch reactors (SBR), integrated fixed film activated sludge (IFAS), etc.).

4. **Sludge Stabilization through Anaerobic Digestion, Sludge Press, Sludge Dryer**– Evaluate the current method for efficiency. The facility will be evaluated to estimate potential methane production necessary to support a combined heat and power facility to offset the plant’s energy use.

1.7 **WWTP Building Evaluations**

We understand the City recently completed an Energy Study and entered into a Performance Contract with Wendel Energy Services for improvements as they relate to energy conservation and efficiency, and to identify opportunities to save energy and lower operational costs. The information compiled in our review would be summarized to determine components of the WWTP that are in need of replacement. Our evaluation will include summarizing those efforts already completed.

B&L is a NYSERDA Flex Tech Consultant and through this program has assisted many water and wastewater clients with reduction of energy intensive equipment and unit processes. A listing of several of our relevant Flex Tech studies is included in the Attachment. New facilities are proposed to include, to the greatest extent practical, “green” system components. B&L has 17 LEED Accredited professionals on staff across all disciplines. We propose to review and summarize potential innovative technologies for cost effectiveness, including green infrastructure technologies and energy efficiency at the treatment plant location. Alternative energy considerations will identify estimates of energy generation, structural mounting requirements, capital cost estimates, sub metering recommendations and preliminary equipment sizing. Alternative energy considerations to be considered are:

- Photovoltaic/Solar Thermal
- Geothermal (heating and cooling) for both ground loop and waste stream heat recovery systems
- Digester Gas to Energy (combined heat and power)

1.8 **Project Workshop No. 2**

B&L will schedule and attend Workshop No. 2 to be held with the City, contracted operator, and project stakeholders to review the materials prepared under Scope of Service Tasks 1.4 through 1.7. The alternative scenarios will be reviewed and discussed with the City and project stakeholders. A recommended alternative would be identified based on input from the City and stakeholders in advance of preparing the draft EPR.

1.9 **Preliminary Estimates of Probable Project Capital, O&M Costs**

B&L will prepare preliminary estimates of probable project cost for each alternative process / WWTP technology to be evaluated for comparison of initial capital costs. Estimates will be based on competitively bidding the project in accordance with General
Municipal Law. Estimates will be developed using current Means Construction Cost Data, manufacturer’s equipment budget quotes, and B&L’s experience on recent projects of this nature. B&L will prepare estimates of annual (first year) O&M costs including chemicals, electricity, labor, contractual services, sludge disposal, insurance, etc., for each alternative considered.

1.10 Recommended Wastewater System
B&L will develop a recommended wastewater system plan in consideration of feedback from the project workshops, payback estimates, initial capital costs, annual operation and maintenance costs, and staffing/operator needs.

1.11 Financial Analysis
Using the preliminary Opinions of Cost prepared by B&L, a preliminary financial analysis to estimate annual debt service cost and associated user charge will need to be completed by the City or their Fiscal Advisor. B&L can assist these efforts once a determination on financing has been provided to B&L. The numbers arrived at from these services not completed by B&L will be relied on and included in the Final Report. Similarly, the estimated annual operation and maintenance charge will be calculated for connected users.

1.12 Draft Engineering Planning Report
B&L will summarize the results of Scope of Service Tasks 1.3 through 1.11 in a Draft Engineering Planning Report to be submitted to the City for review and comment. The report will include the components as required for compliance with NYSEFC for the CWSRF Planning Grant. The preliminary Table of Contents, as presented with the RFP will generally be used to develop the report.

1.13 Final Wastewater Preliminary Engineering Report
Following the City’s and stakeholders’ input on the draft report, B&L will finalize the report and submit three hard copies and a digital copy for the City’s use and distribution to regulatory and funding agencies. B&L will then address appropriate regulatory review comments on the Final Report, which will then serve as the basis for pursuing funding and project design.

2.0 Funding Program Requirements
We are very familiar with NYSEFC’s funding requirements. We have worked with NYSEFC as well as many other funding agencies and have assisted many of our clients with obtaining funding for their projects. A partial listing of our “aided” municipal wastewater projects is included in the attachment. NYSEFC requires service providers to provide opportunities for meaningful participation of minority and women-owned business enterprises (MWBE) for all contracts over $25,000. As our proposal does not exceed this threshold, B&L anticipates it will be exempt from provide these opportunities throughout the development of the project. The “NY State Revolving Fund Bid Packet for Non-Construction Contracts and Service Providers” will be included in our agreement and we will be required to meet the reporting requirements including preparation of an EEO Staffing Plan.
Organizational and Financial Responsibility

Since our founding in 1961, B&L has grown at a steady, measured pace to our current staffing level of more than 200 employees, with several offices across New York State and Pennsylvania and annual billings exceeding $28 million. B&L’s growth has earned it a place on Engineering News-Record’s prestigious ENR Top 500 for the past three years. Our firm prides itself on its fiscal responsibility and a solid track record of performance. B&L’s management is fiscally conservative by nature, allowing for yearly re-investment in the company’s infrastructure and staff development. Banking and accounting references can be provided upon request.

Logistical and Familiarity with the Project Area

Since our founding in Syracuse, New York, the firm has opened six additional offices in Albany, Ellenville, Rochester, Newburgh, Watertown, and Camp Hill (Pennsylvania). Our offices in Ellenville, Newburgh and Albany are easily within reach of the project. The proximity of our project manager and design staff to the City offices and project site will ensure immediate and personal attention and communication. We have visited the site, and are familiar with the objectives of the project and its background.

B&L is in the beginning stages of a project for the City of Kingston that will result in design upgrades to several municipal parking lots. We have technical staff in Ulster County on a daily basis as we have current projects in the Towns of Rosendale, Marlborough, and Lloyd, the Village of Ellenville, and the Mohonk Preserve Inc. Open Space Institute.

Familiarity with NY Clean Water State Revolving Fund Requirements

Our engineers are versed in the most current regulatory requirements as well as the latest technological innovations for solving complicated wastewater issues. B&L’s wastewater personnel interact with regulatory and funding personnel on a continuing basis, fostering open and efficient communication.

B&L has extensive experience administering projects through the New York State Environmental Facilities Corporation (NYSEFC) Clean Water State Revolving Fund (CWSRF) and is familiar with the required program requirements. We have assisted many of our clients in securing grants and low interest loans for projects. Our engineers are extremely familiar with New York State revolving fund programs for wastewater projects (NYSEFC’s Clean Water State Revolving Fund [CWSRF] program), its scoring system, and timelines for submissions. Subsidized or hardship loans often serve as the “core” funding source for larger projects. Once the loan is secured, we shift our focus to grant co-funding (such as Green Innovation Grant Program, Local Government Efficiency) to further reduce user costs. Our team is experienced in assisting with program funding administration during project development, construction, and close-out.

Identification and Resumes of Key Personnel

The firm’s professional staff consists of engineers, environmental scientists and specialists, planners, landscape architects, hydrogeologists, architectural designers, designers/drafters, inspectors, and technicians.

Our multi-disciplined staff includes a team of professionals with the expertise necessary to complete all aspects of this project for the City of Kingston. B&L proposes to use the following team of professionals, each of which have completed projects with wastewater treatment plants. The roles of key team members are outlined below, and resumes follow in the attachment packet.

Anthony T. Eagan, P.E., Managing Engineer, will serve as your Project Manager/Primary Point of Contact. Anthony has more than 14 years of experience with performing technical work in the design of wastewater treatment processes. His work experience includes the design of water and wastewater treatment plants, collection and distribution systems.

Richard A. Straut, P.E., Principal, will serve as Officer in Charge. He will work closely with Anthony Eagan to review the technical aspects of the project, provide overall QA/QC for all deliverables, and will oversee staffing assignments, inter-discipline coordination, schedules, and budget. Rich has more than 28 years of extensive experience working with municipalities and their wastewater needs.

Jesse D. Semanchik, P.E., Senior Project Engineer, will serve as project engineer for the wastewater treatment plant capital plan. He will analyze the existing treatment plant and assess required plant improvements under Anthony’s direction. Jesse is experienced with wastewater systems and treatment plant facilities engineering.
Thomas A. McDonald, P.E., Project Engineer, will also serve as project engineer for the wastewater treatment plant capital plan. He will assist Jesse in planning as well as report writing. Tom has extensive experience with preparation of wastewater treatment facility plans, funding applications, and design of wastewater systems.

Donald A. Davis, Senior Engineer and Wastewater Operations Consultant, is a licensed Grade 4A wastewater treatment plant operator and would assist with the technical support during alternatives analysis. Don has more than 44 years of experience in the operation of municipal and industrial wastewater treatment plants (Grade 4A). He has served as chief operator for wastewater plants ranging in size from 10,000 gpd to 4 mgd, and has worked side-by-side with municipal and private plant operators for troubleshooting and teaching of process control. As a Grade 4A operator, he has process control experience in the operation of several different fixed-film and activated sludge processes, in addition to phosphorus removal, tertiary filtration, and nitrification-denitrification.

Timothy P. Taber, P.E., BCEE, Associate will provide asset management planning. Tim has more than 17 years experience in the planning, design, and construction of infrastructure and information management projects. He has been involved in civil engineering projects, and now focuses on planning, developing, and implementing asset management programs and systems.

Thomas C. Baird, P.E. CPESC, Senior Management Engineer will provide green infrastructure services. Tom has extensive experience in preliminary and final design and environmental design for various state agencies, municipalities and private industry. His experience also includes the design of urban, rural, and suburban highway project water quality treatment and water quantity control systems for NYS Department of Transportation, county, and other municipal projects. The designs incorporate the requirements of Regulated MS-4s, the Federal Clean Water Act, and the NYS Stormwater Management Design Manual.

Availability of Key Personnel

The personnel proposed for this project have ample availability to perform the work required in a timely and efficient manner. In addition, B&L has a multi-disciplined staff of engineers, environmental scientists, planners, landscape architects, and construction specialists who are available for any special needs that may arise.

Experience with Similar Kinds of Work

B&L has been planning, designing and upgrading wastewater treatment plants in New York State since the mid 1960s. B&L employs a multi-disciplined, fully-coordinated approach to your unique wastewater management challenge to achieve a customized solution. Firm engineers are versed in the most current regulatory requirements as well as the latest technological innovations for solving complicated wastewater issues. Located in the Attachments section, we have included the following documents to fulfill requirements in the RFP and to further highlight our extensive wastewater engineering planning experience:

- Fully Executed Required Forms
- Organizational Chart and Resumes
- Wastewater Engineering Qualifications
- Detailed Project Descriptions, with References
- Experience Matrices
  - Representative Municipal Wastewater Treatment Experience
  - NYSERDA Funded Projects
  - Partial Listing of NYS EFC, CWSRF, and DWSRF Aided Public Works Projects

Estimated Project Cost

The following cost proposal section contains a detailed task hour estimate table for proposed services to complete the City of Kingston Wastewater Treatment Plant Long Term Capital Plan. The maximum payment for services is estimated to be $24,800.
Estimated Cost Proposal

Wastewater Treatment Plant Long-Term Capital Plan for the City of Kingston

Contract #CK-EDSP-2014-002
# City of Kingston
## Wastewater Treatment Plant
### Long-Term Capital Plan
#### CWSRF Planning Grant

**DATE:** June 2014  
**ATE APP'D BY:**

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**1.0 PRELIMINARY ENGINEERING REPORT (PER)**

| 1.1 Historical Data Review | 1 | 2 | 4 | 685 | 50 | 0 | 735 |
| 1.2 Kick-Off Meeting & Site Visit - Workshop No. 1 | 6 | 4 | 4 | 6 | 2174 | 250 | 0 | 2424 |
| 1.3 Establish Flows and Loads | 1 | 2 | 4 | 685 | 685 |
| 1.4 WPCF Effluent Parameters | 1 | 1 | 190 | 190 |
| 1.5 Alternative Evaluations | 1 | 2 | 6 | 8 | 40 | 6 | 8 | 7580 | 60 | 7640 |
| 1.6 Project Workshop No. 2 | 4 | 6 | 1346 | 250 | 0 | 1596 |
| 1.7 Cost Estimates | 1 | 4 | 4 | 4 | 3066 | 0 | 3066 |
| 1.8 Financial Analysis (Provided by Others) | 1 | 1 | 3 | 4 | 8 | 2 | 4 | 2167 | 20 | 2187 |
| 1.9 Draft Preliminary Engineering Report | 1 | 4 | 8 | 8 | 140 | 4 | 4 | 6230 | 40 | 6270 |
| 1.10 Final PER | 1 | 1 | 3 | 4 | 8 | 2 | 4 | 2167 | 20 | 2187 |

**HOURS TOTAL**

| 2 | 5 | 29 | 39 | 24 | 0 | 111 | 12 | 0 | 16 | 11 |

**DOLLARS/HOUR**

| 164 | 150 | 137 | 106 | 106 | 0 | 84 | 65 | 0 | 106 | 54 |

**SUB-TOTAL**

| 328 | 759 | 3973 | 4134 | 2544 | 0 | 3224 | 780 | 0 | 1699 | 594 |

**LABOR TOTAL**

| 24123 |

**SUBCONTRACTS/OUTSIDE SER**

| 0 |

**EQUIPMENT RENTALS & MISC**

| 0 |

**REIMBURSABLE EXPENSES/CA**

| 50 |

**MILAGE, TELEPHONE, REPRO**

| 500 |

**TRAVEL, PER DIEM**

| 120 |

**FEE ESTIMATE**

| 24793 |

**PROPOSAL FEE**

| 24,800 |
Attachments Packet

- Fully Executed Required Forms
- Organizational Chart and Resumes
- Wastewater Engineering Qualifications
- Detailed Project Descriptions, with References
- Experience Matrices
  - Representative Municipal Wastewater Treatment Experience
  - NYSERDA Funded Projects
  - Partial Listing of NYS EFC, CWSRF, and DWSRF Aided Public Works Projects
Information Sheet

NAME OF PROPOSER: Barton & Loguidice, D.P.C.

ADDRESS: 280 Broadway, Suite 12
           Newburgh, NY 12250

TYPE OF ENTITY: Corp. X Partnership Individual LLC

If a non publicly owned Corporation: NAME OF CORPORATION: Barton & Loguidice, D.P.C.

List Principal Stockholders (holding over 5% of outstanding shares)

LIST OFFICERS: See attached Stockholders list.

LIST DIRECTORS:

DATE OF ORGANIZATION: 1961

If a partnership:
PARTNERS:

NAME OF PARTNERSHIP:

DATE OF ORGANIZATION:

* If the business is conducted under an assumed name, a copy of the certificate required to be filed under the New York General Business Law must be attached.
Principal Shareholders, Officers, and Directors

2014
Barton & Loguidice, D.P.C.
290 Elwood David Road – Box 3107
Syracuse, NY 13220-3107

Principal Stockholders with 5% or more of outstanding shares

Nicholas J. Pinto, P.E.
President
12.39%

Richard A. Straut, P.E.
Executive Vice President
10.51%

Paul R. Czerwinski, P.E.
Executive Vice President
10.51%

Matthew J. Schooley, P.E.
Senior Vice President
10.51%

Kenneth M. Knutsen, P.E.
Senior Vice President
10.51%

John P. Donohue, P.E.
Senior Vice President
8.71%

Scott D. Nostrand, P.E.
Senior Vice President
8.71%

Dean G. Mason, P.E.
Vice President
6.95%
Reference Sheet

All Proposers shall be required to complete this form providing three (3) references of past performance. References should involve projects and/or service situations of similar size and scope to this RFP. References must have had dealings with the proposer within the last thirty-six (36) months. The City reserves the right to contact any or all of the references supplied for an evaluation of past performance in order to establish the responsibility of the proposer before the actual award of the RFP and/or contract. Completion of the reference form is required.

PROPOSER’S NAME: Barton & Loguidice, D.P.C.

DATE FILED: June 6, 2014

Proposer’s Address: 280 Broadway, Suite 12, Newburgh, NY 12250

Reference’s Name: Town of Fallsburg

Address: P.O. Box 2019, 5410 State Route 42, South Fallsburg, NY 12779

Telephone: (845) 434-6398 Contact Person: William Illing, PE, Town Engineer

Reference’s Name: City of Newburgh

Address: 83 Broadway, Newburgh, NY 12550

Telephone: (845) 569-7446 Contact Person: Jason Morris, PE, City Engineer

Reference’s Name: Village of Ellenville

Address: 2 Elting Court, Ellenville, NY 12428

Telephone: (845) 647-7080 Contact Person: Brian Schug, Building Inspector
Wastewater Treatment Plant Long Term Capital Plan
Request for Proposals
City of Kingston
RFP # CK-EDSP-2014-002

Affidavit of Non-Collusion

NAME OF RESPONDER: Barton & Loguidice, D.P.C.
BUSINESS ADDRESS: 280 Broadway, Suite 12, Newburgh, NY 12250

I hereby attest that I am the person responsible within my firm for the final decision as to the prices(s) and amount of this proposal or, if not, that I have written authorization, enclosed herewith, from that person to make the statements set out below on his or her behalf and on behalf of my firm.

I further attest that:

1. The price(s) and amount of this proposal have been arrived at independently, without consultation, communication or agreement for the purpose of restricting competition with any other contractor, responder or potential responder.
2. Neither the price(s), nor the amount of this proposal, have been disclosed to any other firm or person who is a responder or potential responder on this project, and will not be so disclosed prior to proposal opening.
3. No attempt has been made or will be made to solicit, cause or induce any firm or person to refrain from responding to this RFP, or to submit a proposal higher than the proposal of this firm, or any intentionally high or non-competitive proposal or other form of complementary proposal.
4. The proposal of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from any firm or person to submit a complementary proposal.
5. My firm has not offered or entered into a subcontract or agreement regarding the purchase of materials or services from any other firm or person, or offered, promised or paid cash or anything of value to any firm or person, whether in connection with this or any other project, in consideration for an agreement or promise by an firm or person to refrain from responding to this RFP or to submit a complementary proposal on this project.
6. My firm has not accepted or been promised any subcontract or agreement regarding the sale of materials or services to any firm or person, and has not been promised or paid cash or anything of value by any firm or person, whether in connection with this or any project, in consideration for my firm’s submitting a complementary proposal, or agreeing to do so, on this project.
7. I have made a diligent inquiry of all members, officers, employees, and agents of my firm with responsibilities relating to the preparation, approval or submission of my firm’s proposal on this project and have been advised by each of them that he or she has not participated in any communication, consultation, discussion, agreement, collusion, act or other conduct inconsistent with any of the statements and representations made in this affidavit.
8. By submission of this proposal, I certify that I have read, am familiar with, and will comply with any and all segments of these specifications.

The person signing this proposal, under the penalties of perjury, affirms the truth thereof.

Signature & Company Position

Richard A. Straut, Principal

Print Name & Company Position

Barton & Loguidice, D.P.C.

Company Name

6-3-2014

Date Signed

16-1020368

Federal I.D. Number
**This form was intentionally left blank**
M/W/DBE Forms are not required with a project fee under $25K

Environmental Protection Agency

**EPA Form 6100-2**
Disadvantaged Business Enterprise Program
DBE Subcontractor Participation Form

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Please use the space below to report any concerns regarding the above EPA-funded project (e.g., reason for termination by prime contractor, late payment, etc.).

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<th>CONTRACT ITEM NO.</th>
<th>ITEM OF WORK OR DESCRIPTION OF SERVICES RECEIVED FROM THE PRIME CONTRACTOR</th>
<th>AMOUNT SUBCONTRACTOR WAS PAID BY PRIME CONTRACTOR</th>
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Subcontractor Signature ___________________________ Title/Date ___________________________

Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

EPA FORM 6100-2 (DBE Subcontractor Participation Form)
EPA Form 6100-3

Disadvantaged Business Enterprise Program
DBE Subcontractor Performance Form

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<th>NAME OF SUBCONTRACTOR:</th>
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Currently certified as an MBE or WBE under EPA’s DBE Program? _____ Yes _____ No
Signature of Prime Contractor Date Print Name Title
__________________________________________
Signature of Subcontractor  Date
__________________________________________
Print Name  Title

Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

EPA FORM 6100-3 (DBE Subcontractor Performance Form)
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M/W/DBE Forms are not required with a project fee under $25K

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### The following subcontractors\(^1\) will be used on this project:

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<tr>
<th>COMPANY NAME, ADDRESS, PHONE NUMBER, AND E-MAIL ADDRESS</th>
<th>TYPE OF WORK TO BE PERFORMED</th>
<th>ESTIMATE DOLLAR AMOUNT</th>
<th>CURRENTLY CERTIFIED AS AN MBE OR WBE?</th>
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I certify under penalty of perjury that the forgoing statements are true and correct. In the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302(c).

________________________                 _________________________
Signature of Prime Contractor                      Date

________________________                 _________________________
Print Name                                           Title

\(^1\)Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.
AGREEMENT TO ABIDE BY EQUAL EMPLOYMENT OPPORTUNITY
POLICY STATEMENT REQUIREMENTS
NEW YORK STATE REVENGLING FUND (SRF)

I, [Name], am the authorized representative of [Recipient Name].

I hereby certify that [Recipient Name] will abide by the equal employment opportunity (EEO) policy statement provisions outlined below.

(i) A statement that the contractor will not discriminate on the basis of race, creed, color, national origin, sex, age, disability, or marital status against any employee or applicant for employment, will undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination and will make and document its conscientious and active efforts to employ and utilize minority group members and women in its workforce on contracts relating to the Project.

(ii) An agreement that all contract's solicitations or advertisements for employees will state that, in the performance of the contract relating to this Project, all qualified applicants will be afforded equal employment opportunities without discrimination on the basis of race, creed, color, national origin, sex, age, disability or marital status.

(iii) An agreement to request each employment agency, labor union, or authorized representative of workers with which it has a collective bargaining or other agreement or understanding, to furnish a written statement that such employment agency, labor union, or representative will not discriminate on the basis of race, creed, color, national origin, sex, age, disability or marital status and that such union or representative will affirmatively cooperate in the implementation of the contractor's obligations herein.

(iv) An agreement to comply with the provisions of the Human Rights Law (Article 15 of the Executive Law), including those relating to non-discrimination on the basis of prior criminal conviction and prior arrest, and with all other State and federal statutory constitutional non-discrimination provisions.

Blank EEO Policy Statements are available at www.etc.ny.gov/mwbe, if needed.

If contractor fails to submit to Recipient an EEO policy statement consistent with the provisions set forth above in clauses (i), (ii), (iii) and (iv) and within the timeframe required thereof, Recipient may declare this contract to be null and void.

[Signature]
Contractor/Service Provider Representative

Once completed, please provide to the Prime Contractor and/or the community MBO.
CERTIFICATION
FOR
CONTRACTS, GRANTS, LOANS, AND
COOPERATIVE AGREEMENTS
40 CFR 34

SRF Project No.: ____________________________

The undersigned each certify, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, “Disclosure Form to Report Lobbying,” in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including sub-contracts, sub-grants, and contracts under grant, loans, and cooperative agreements) and that all sub- recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31 U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

By: ________________________________
Name: [Signature]
Title: Vice President
Date: June 9, 2014
Contract ID: ____________________________
Organizational Chart and Resumes
Organizational Chart

City of Kingston
Wastewater Treatment Plant Long-Term Capital Plan
Contract #CK-EDSP-2014-002

Project Manager
Anthony T. Eagan, P.E.

Officer-in-Charge
Richard A. Straut, P.E.

Physical/Chemical Processes Assessment
Jesse D. Semanchik, P.E.
- Physical/Chemical Processes Assessment
- Process Energy Assessment
- Alternatives Assessment

Process Engineering
Jesse D. Semanchik, P.E.
Thomas A. McDonald, P.E.
- Engineering Coordination
- Unit Process Evaluation
- User Base Evaluations
- Flow/Load Projections
- Cost Estimating

Operations
Donald A. Davis
- Operations Planning and Protocol
- Operations and Maintenance Cost Estimating

Permitting / Approvals
Thomas A. McDonald, P.E.
- Facilities Energy Assessment
- Regulatory Coordination

Asset Management
Timothy P. Taber, BCEE

Green Infrastructure
Thomas C. Baird, P.E.
Summary

Mr. Eagan specializes in sanitary wastewater treatment design. He performs technical work in the design of wastewater treatment processes. Mr. Eagan’s work experience includes the design of water and wastewater treatment plants, collection and distribution systems, water quality sampling stations for NPDES compliance; design for landfill methane extraction; and interior lining, cleaning and sealing of water mains for the Washington Area Suburban Authority (WASA). He has also developed bid proposals for major water and wastewater treatment upgrades. He has also worked traffic impact analysis, preliminary layout and final design for transportation projects, including roadway reconstruction and drainage, bridge replacements, bulkheads, retaining walls and traffic studies.

Relevant Project Experience

Village of Monticello Wastewater Treatment Plant
B&L is assisting the Village with overall plant improvements including new screenings and grit removal at the headworks, conversion of the draft tube oxidation ditches into continuous flow sequencing batch reactors capable of biological nutrient removal, and replacement of the failing tertiary sand filters with cloth media disc filters. The project started with facilities planning in which B&L evaluated process alternatives for the entire plant. For the headworks, the project involves replacing the existing mechanical screens with climber-type screens, and replacing the aerated grit chamber, grit removal equipment and grit classifier with a vortex grit separator and new grit dewatering classifier.

Town of Fallsburg Value Engineering Recommendations
B&L assisted the Town with an evaluation of the proposed improvements at their Loch Sheldrake Wastewater Treatment Plant. This plant requires to be upgraded to meet more stringent Nitrogen and Phosphorous Removal requirements. B&L reviewed the Engineering Report and selection of the unit processes for the Upgrade and Expansion to this facility. B&L made recommendations to keep the project eligible for CWSRF Hardship financing.

NY City Depart. of Environmental Protection Regulatory Upgrades, Various Wastewater Treatment Plants in Putnam Co., Westchester Co., and Greene Co.
As the Project Manager, Mr. Eagan was involved and oversaw the planning, preliminary design, local and regulatory approvals, bidding, construction, startup and commissioning of various NYCDEP regulatory upgrade projects. These projects included evaluation of the existing facilities and select upgrades including the installation of rapid sand filtration, microfiltration, disinfection, Standby Power, and local and remote monitoring and telemetry capability through Supervisory Control and Data Acquisition (SCADA) Systems.
Wild Oaks Wastewater Treatment Plant Upgrade, Town of Lewisboro, Westchester County, NY
As the Project Manager/Project Engineer, Mr. Eagan contributed significantly to the design of the NYCDEP Regulatory Upgrade to this permitted Extended Aeration 60,000 gpd WWTP. The project also included demolition and/or rehabilitation of the entire treatment plant, the replacement of a stream crossing and rehabilitation of another to accommodate the regulatory upgrade. The project included a significant coordination between two Towns and their respective approval boards, the ACOE, NYSDEC and NYCDEP. This project includes inline flow equalization, new extended aeration tanks, rehabilitating an existing and construction of a proposed settling tank, rapid sand filtration, microfiltration, UV disinfection and post aeration.

Washington County Sewer District #2 – Energy Performance Contract
The Washington County Sewer District No. 2 provides sewer services to the Villages of Fort Edward and Hudson Falls and parts of the Towns of Fort Edward and Kingsbury. Barton & Loguidice partnered with Wendel Energy Services to evaluate and implement select improvements at the treatment plant to reduce energy usage. B&L completed an energy efficiency study of potential energy conservation measures (ECMs) which allowed Sewer District No. 2 Officials to make informed implementation decisions based on energy, operational and maintenance savings.

Dewatering Solids Upgrade at the Back River WWTP, City of Baltimore, MD
On this 180MGD wastewater plant utilizing fine bubble, air distributed, activated sludge. Utilizing phosphorus control by chemical addition and nitrogen control by biological processes, we currently remove a majority of these nutrients. Hydraulically, the BRWWTP can handle peak flows of over 400 MGD. Duties included Installation of Preliminary Testing of Dewatering Equipment computations and field verification of preliminary testing and reporting back to the Project Manager. Made recommendations based upon field observations to for changes in the testing procedure as they related to field conditions.

Carvel Wastewater Treatment Plant, Durst Organization, Pine Plains, NY
For this project, Mr. Eagan performed an analysis of the existing wastewater treatment plant for replacement and design of a 200,000 gpd capacity plant. He assisted in the design of Sequencing Batch Reactor Tanks, and other site design amenities for this project which includes Influent Screening, Disinfection, and Post Aeration. He performed evaluations of the use of several different wastewater treatment technologies and their limitations as they relate to water Re-use. He performed calculations based on cost of facilities and Treatment Technologies over the course of their life, presented Cost Benefit and Operations Budgets, and summarized them for inclusion in Draft Environmental Impact Statements (DEIS). The sizing of these plants ranged from an average flow of 200,000 gpd to a peak flow of 680,000 gpd during full occupancy.
Summary

Mr. Straut is manager of B&L's Albany, Newburgh, and Ellenville offices. He assists municipal and industrial clients with implementation and oversight of a wide range of water supply and wastewater management challenges.

He has experience with both water and wastewater pumping stations from small neighborhood service stations to stations with capacities in excess of 25 MGD. He is experienced in the design of pump stations with state-of-the-art automation and control systems.

Wastewater planning and design projects which Mr. Straut has been involved with include municipal and industrial wastewater treatment facilities including both aerobic and anaerobic biological treatment, as well as physical/chemical treatment. He has been involved in small system projects and projects involving large systems up to 17 MGD. Mr. Straut's experience in biological treatment technologies included activated sludge, trickling filters, RBC’s, high rate and low rate anaerobic processes. Tertiary treatment systems include biological nitrification, phosphorous precipitation, constructed wetland effluent polishing, rapid infiltration, activated carbon absorption, pressure filtration, and break point chlorination. He has engineered numerous conventional wastewater collection systems, as well as alternative sewer systems including low pressure grinder pump systems.

Mr. Straut has assisted industrial clients with wastewater pretreatment facilities, including process water recovery and reuse systems, fully automated flow equalization, control and monitoring systems, odor control reuse systems, chemical treatment systems, and storage capacities up to one million gallons. He has also provided expert testimony on behalf of our clients relative to water and wastewater issues.

Relevant Project Experience

**FAGE Facility Expansion—Treatment of Additional Process Waste at Gloversville-Johnstown Joint Wastewater Treatment Facility** - B&L is providing engineering services related to the improvements to Gloversville-Johnstown Joint Wastewater Treatment Facility (GJJWTF) as necessary to treat additional wastewater that will be generated by the expanded FAGE Greek yogurt plant. B&L is examining what improvements are necessary at the GJJWTF to effectively treat the increased wastewater loading that will result from the FAGE expansion. The development and refinement of the treatment process engineering will include an in-plant pilot test of the recommended solution. GJJWTF's existing BioWin™ treatment plant process model will serve as the base mode, which will be modified to include and evaluate treatability of the new FAGE waste loading based on outcomes of the examination of alternative treatment concepts.
**Village of Monticello Wastewater Treatment Plant Facilities Planning and Design (underway), Construction Administration and Inspection (2012) Funding – ARRA Grant/Loan through USDA**

B&L is assisting the Village with overall plant improvements including new screenings and grit removal at the headworks, conversion of the draft tube oxidation ditches into continuous flow sequencing batch reactors capable of biological nutrient removal, and replacement of the failing tertiary sand filters with cloth media disc filters. Energy efficiency improvements are also being incorporated throughout the plant. The project started with facilities planning in which B&L evaluated process alternatives for the entire plant. For the headworks, the project involves replacing the existing mechanical screens with climber-type screens, and replacing the aerated grit chamber, grit removal equipment and grit classifier with a vortex grit separator and new grit dewatering classifier.

**Village of Ellenville Wastewater Treatment Plant** - The project involves upgrading the plant to 1.1 MGG, a new headworks building to replace the existing facilities, new SBR biological process, and new disinfection facilities. In addition, control building renovations and building systems improvements are being implemented. Energy efficiency improvements, partially funded with the ARRA GIGP grant, include geothermal heating system, photovoltaic system, high-efficiency aeration equipment (high speed turbo blowers) and effluent heat recovery from the treated wastewater. Preliminary treatment incorporates influent flow measurement, rotary drum fine screen with screw dewatering compactor, vortex grit separator and grit dewatering classifier, and VFD driven influent pumps with PLC-based level control. Biosolids improvements include new covered sludge drying beds. This project is currently under construction.

**Village of Altamont WWTP Improvements** - B&L completed a feasibility study and developed a design concept plan to increase treatment capacity while decreasing operation and maintenance costs. The project will feature upgraded preliminary, secondary and tertiary treatment processes. Additional upgrades to the existing underground piping systems will be made to increase the hydraulic capacity of the facility. B&L assisted the Village with securing long-term low-interest loans from the NYS Environmental Facilities Corporation.

**Village of Cobleskill Wastewater Treatment Plant**

B&L provided facilities planning, design, construction administration and inspection services for the upgrade of the Village of Cobleskill’s wastewater treatment plant that included improvements to all facets of the plant, from process improvements to building systems and emergency generator upgrade. Improvements made to the plant headworks included replacing the comminutor with an influent grinder, retrofitting the aerated grit chamber with a vortex grit separation system and grit classifier, and replacing the influent pumping system with new VFD-controlled, flow paced pumps. A USDA Rural Development application for community programs wastewater loan/grant was completed and a Federal US Rural Development loan of $2,750,000 was awarded for this project to cover this phase as well as subsequent plant upgrades.
Summary

Mr. Semanchik has extensive experience in the planning, permitting, design, construction, and operations assistance of municipal water and wastewater treatment systems and facilities. His experience includes wastewater treatment plant evaluation and process design; biological nutrient removal BNR; wastewater pumping station evaluation and design; wastewater collection and conveyance system design; and sanitary sewer evaluation studies focusing on infiltration and inflow elimination.

Relevant Project Experience

Town of Clifton Newton Falls Wastewater Collection System, Newton Falls, NY
The Town of Clifton is developing a public sewer system to serve residents of the Hamlet of Newton Falls. The project involves the installation of 2.5 miles of low-pressure sewer main, 115 grinder pump stations, and a new 100,000 gallon per day wastewater treatment plant. As part of the Facilities Planning effort, B&L prepared preliminary layouts and cost estimates for a conventional gravity collection system, in addition to a low-pressure system equipped with residential grinder pump units. B&L prepared a unit process capacity evaluation for the existing plant, and prepared a basis of design for expanding the plant to 60,000 gpd through modifications to the existing aeration tank, addition of a second aeration tank, fine bubble aeration, two new circular clarifiers, and a small control building.

CAST Process Improvements, Gloversville-Johnstown Joint Wastewater Treatment Facility, Fulton County, NY
The project included facility planning, preparation of construction documents, and bidding for improvements to the 10.5 MGD Gloversville-Johnstown Joint Wastewater Treatment Facility to treat additional wastewater generated by an expanded Greek yogurt facility. The improvements were based on an innovative Contact Adsorption Settling Thickening (CAST) process using waste activated sludge from the existing aeration process to adsorb a portion of the Greek yogurt influent organic waste load in a new process tank. Following mixing and adsorption the WAS is then thickened on existing gravity belt thickeners prior to processing in anaerobic digesters. The CAST process improvements include yard piping, retrofit of an aeration tank to an equalization tank with floating mixers, equalization pumping station, 400,000 gallon CAST reaction tank, blowers and chemical feed equipment. Additional improvements include a new ash storage facility to be used for amending dewatered sludge, new biogas scrubber, and a new 350 kW biogas generator.

Wastewater Treatment Facilities, Village of Cayuga, Town of Aurelius, NY
The project included design and permitting of a new 0.13 MGD wastewater treatment plant consisting of an automatic influent screen, two basin SBRs, a post-SBR equalization tank, UV disinfection, and a new outfall to the Seneca River. Two aerobic digester and reed beds were provided for treatment and
disposal of waste sludge. A new control building houses the process blowers, laboratory, flow meter, and chemical feed equipment.

**WWTP and Sanitary Sewer Improvements, Village of Monticello, NY**
As part of a larger USDA funded Village sewer project, B&L assisted the Village with design and construction services to complete water and sewer improvements along Nelshore Drive. During the preliminary engineering phase, the existing 8-inch clay sewer main was shown by a CCTV inspection to be severely crushed and fractured. Approximately 750 feet of the sewer main was replaced in-kind, and 500 feet were lined with a cured-in-place pipe liner to repair the damaged main. As part of the project, the existing 8-inch watermain was identified as being directly on top of the sewer main. Therefore, in order to rehabilitating the sewer, the watermain was relocated within 10 feet east of the existing sewer. In addition, new hydrants, water services, sewer laterals, and gate valves were installed, and the entire length of the road was repaved.

**Wastewater Treatment Plant SBR Upgrade and Expansion, Brodhead Creek Regional Authority, Borough of Stroudsburg, PA**
The project included the design and permitting for the upgrade expansion of an existing 2.5 MGD wastewater treatment plant to a modern 4.5 MGD biological nutrient removal (BNR) facility. The existing treatment plant was converted into an SBR process capable of BNR for nitrogen and phosphorous. Four new SBR basins were constructed. Each SBR is equipped with a full-floor ceramic fine bubble diffuser grid. Hyperbolic style mixers were provided for mixing of the SBR tank contents during the anoxic and anaerobic phases of the BNR process. Additional upgrades included influent equalization, fine screening, grit removal, effluent filtration, UV disinfection, and odor control facilities. The existing clarifiers were converted to post SBR equalization, and the existing aeration basins were converted to aerobic digesters. Mechanical sludge thickeners and a second belt filter press were added to the existing sludge processing facilities.

**Cheyney University Wastewater Treatment Plant Upgrade, Thornbury Township, PA**
The project included the design and permitting for the upgrade of an existing trickling filter wastewater treatment plant to meet new EPA TMDL nutrient limits for nitrogen and phosphorous. The upgrade included construction of a new 0.270 MGD SBR for BNR of nitrogen and phosphorous. Two SBR basins were provided, and each basin is equipped with a full-floor fine bubble diffuser grid and a direct drive mixer for mixing during the anoxic and anaerobic phases of the BNR process. The upgrade also provided new fine screening facilities, filtration, UV disinfection, chemical feed, and aerobic digestion facilities.
Summary

Mr. McDonald has extensive experience in design and construction administration of municipal water and wastewater infrastructure treatment projects. He has been involved in progressing water and wastewater projects from planning through design, construction, and completion. His experience includes preparation of facility plans for existing water and wastewater treatment facilities, funding applications to the State Revolving Fund and USDA Rural Development, regulatory agency and permit applications, environmental review documents, design of water and wastewater systems, and preparation of construction plans and specifications for public bid. Mr. McDonald has also provided construction administration and periodic inspection services for many projects.

Relevant Project Experience

Village of Ellenville Wastewater Treatment Plant
The project involves upgrading the plant to 1.1 MGD, a new headworks building to replace the existing facilities, new SBR biological process, and new disinfection facilities. In addition, control building renovations and building systems improvements are being implemented. Energy efficiency improvements, partially funded with the ARRA GIGP grant, include geothermal heating system, photovoltaic system, high-efficiency aeration equipment (high speed turbo blowers) and effluent heat recovery from the treated wastewater.

FAGE Facility Expansion—Treatment of Additional Process Waste at Gloversville-Johnstown Joint Wastewater Treatment Facility - B&L is examining what improvements are necessary at the GJJWTF to effectively treat the increased wastewater loading that will result from the FAGE expansion. The development and refinement of the treatment process engineering will include an in-plant pilot test of the recommended solution. GJJWTF’s existing BioWin™ treatment plant process model will serve as the base mode, which will be modified to include and evaluate treatability of the new FAGE waste loading based on outcomes of the examination of alternative treatment concepts. Mr. McDonald studied proposed contact adsorption process including bench and pilot scale performance testing. He completed process design of influent sewer, headworks building, equalization and mixing process, acid feed system, and new SCADA improvements.

Village of Altamont WWTP Improvements
Project was an upgrade to this tertiary treatment plant which suffered SPDES permit violations as a result of excessive wet weather flows. Plant improvements included new headworks facility with mechanical screening and vortex grit removal system, conversion of existing treatment tank to nitrifying SBRs, and retrofit of existing traveling bridge filters with cloth media disc filters.
**Town of Liberty Swan Lake Wastewater Treatment Plant Improvements**

B&L prepared a Facilities Plan as a NYSERDA FlexTech study to plan for improvement and expansion of the plant. Recommendations of the study for the headworks are to: replace the influent comminutor with a mechanical fine screen to improve process efficiency, retrofit the overloaded aerated grit chamber with a vortex grit chamber and grit dewatering classifier, and install new influent pumps with VFDs and PID logic control. Mr. McDonald revised the NYSERDA FlexTech study to meet the requirements of the USDA preliminary engineering report by analyzing additional alternatives and enhancing estimates of cost for the analyzed alternatives.

**Village of Monticello Wastewater Treatment Plant Improvements**

B&L is assisting the Village with overall plant improvements including new screenings and grit removal at the headworks, conversion of the draft tube oxidation ditches into continuous flow sequencing batch reactors capable of biological nutrient removal, and replacement of the failing tertiary sand filters with cloth media disc filters. Energy efficiency improvements are also being incorporated throughout the plant. Mr. McDonald designed solids process improvements including aerobic digesters with supernatant removal, reed bed sludge treatment systems, and SCADA improvements for the plant wide improvements project.

**NYSERDA Funded Facilities Plan, Town of Rotterdam Wastewater Treatment Plant**

B&L prepared a facilities plan and energy analysis of improvements to the Town’s Wastewater Treatment Plant. Phase I work includes replacing the existing trickling filter distributor arms and improve flow dosing balance, constructing additional secondary clarifier with additional sludge pumps, rehabilitate existing tertiary filter, replace existing UV disinfection with chlorine disinfection, constructing an additional gravity sludge thickener and septage receiving station, rebuilding an existing sludge belt filter press, replacing existing emergency generator and ATS, and energy efficiency improvements to the headworks, filter, digester, and operations buildings. Phase II includes replacing the existing mechanical screen, constructing a larger grit removal system, replacing existing primary sludge pumps, replacing an existing intermediate pump station, constructing new plastic media bio-towers, expand existing sludge press building and install new sludge press, constructing improvements to existing outfall sewer, and installing a new SCADA system. Mr. McDonald completed a NYSERDA FlexTech study to evaluate alternative improvements to the Town’s WWTP including preliminary, secondary and tertiary treatment and disinfection, analysis of estimated cost, and evaluation of energy efficiency savings.
Donald A. Davis
Senior Water Quality Scientist

Summary

Mr. Davis has been responsible for the start-up, operation, maintenance, quality control, process trouble-shooting and staff training of several municipal wastewater treatment facilities of various sizes from 10,000 gallons per day to 13 MGD, including conventional treatment, modified aeration systems, SBR, and Pure-Ox technology. He was responsible for laboratory process control programs, maintained New York State Certified Laboratories, and holds a 4-A New York State Wastewater Operator Certification.

On the industrial side, Mr. Davis has been directly involved with the operation of several industrial wastewater facilities which include hazardous wastes sites, high strength brewery, fruit juice, and pharmaceutical wastes, metal processing wastes, paper mill wastes, organically contaminated ground water, leachate treatment, air stripping, oil/water separation, dewatering processes and composting of the associated waste solids.

Relevant Project Experience

Village of Ellenville Wastewater Treatment Plant
The project involves a new headworks building to replace the existing facilities, new biological process, and new disinfection facilities. In addition, control building renovations and building systems improvements are being implemented. Energy efficiency improvements, partially funded with the ARRA GIGP grant, include geothermal heating system, photovoltaic system, high-efficiency aeration equipment (high speed turbo blowers) and effluent heat recovery from the treated wastewater. Preliminary treatment incorporates influent flow measurement, rotary drum fine screen with screw dewatering compactor, vortex grit separator and grit dewatering classifier, and VFD driven influent pumps with PLC-based level control. Mr. Davis provided a technical assessment of the Village’s wastewater treatment facility prior to the decision making process to either repair or replace portions of the facility’s secondary treatment equipment.

Village of Monticello Wastewater Treatment Plant
B&L is assisting the Village with overall plant improvements including new screenings and grit removal at the headworks, conversion of the draft tube oxidation ditches into continuous flow sequencing batch reactors capable of biological nutrient removal, and replacement of the failing tertiary sand filters with cloth media disc filters. Energy efficiency improvements are also being incorporated throughout the plant. The project started with facilities planning in which B&L evaluated process alternatives for the entire plant. For the headworks, the project involves replacing the existing mechanical screens with climber-type screens, and replacing the aerated grit chamber, grit removal equipment and grit classifier with a vortex grit separator and new grit dewatering classifier. Mr. Davis is providing technical operations assistance.

Years of Experience
44

Education
B.A., Biology (Water Sciences), SUNY at Oswego, 1967
A.A., Math and Science, Onondaga Community College, 1964

Professional Registrations
1A Water Treatment Plant Operator, NY
4A Wastewater Treatment Plant Operator, NY
Village of Hancock Wastewater Treatment Plant
Following a 2006 flood, B&L assisted the Village with identification and implementation of emergency repairs needed to get the system back on line, and took a lead role in coordinating with FEMA and SEMO. B&L completed a “Phase B” flood damage assessment of the facilities which included new automatic climber bar screen, and complete rehabilitation of the grit removal equipment, aeration equipment and pumps.

Wastewater Treatment Comprehensive Planning, Design and Construction, Hamlet of Newton Falls, Clifton, NY
The Town received a $1.0 million State Assistance Grant, to assist with planning, design, and construction of a wastewater collection and treatment system. B&L prepared a unit process capacity evaluation for the existing WWTP, and prepared a basis of design for expanding the plant to 60,000 gpd through modifications to the existing aeration tank, addition of a second aeration tank, fine bubble aeration, two new circular clarifiers, and a small control building.

Oswego City West Side Wastewater Treatment Plant, Oswego, NY
Conducted filter examinations following filter failures at the West Side Wastewater Treatment facility’s tertiary filtration facility. Investigations resulted in a determinate that failure was linked to plugged air diffusers in the filter blocks. Position at time, City Chemist, Water & Wastewater Plant.

Town of Hastings Wastewater Treatment Facility
Mr. Davis provided technical operations assistance to the facility’s staff and equipment suppliers of this 125,000 gal/day Sequencing Batch Reactor (SBR) treatment facility. Operational difficulties in cold weather operations were identified; process modifications, equipment repair and additional training requirements were either initiated or completed.

CAST Process Improvements, Gloversville-Johnstown Joint Wastewater Treatment Facility, Fulton County, NY
B&L provided facility planning, preparation of construction documents and bidding. Project includes engineering services for improvements to the 10.5 MGD Gloversville-Johnstown Joint Wastewater Treatment Facility to treat additional wastewater generated by an expanded Greek yogurt facility. The improvements were based on an innovative Contact Adsorption Settling Thickening (CAST) process using waste activated sludge from the existing aeration process to adsorb a portion of the Greek yogurt influent organic waste load in a new process tank. The CAST process improvements include yard piping, retrofit of an aeration tank to an equalization tank with floating mixers, equalization pumping station, 400,000 gallon CAST reaction tank, blowers and chemical feed equipment. Additional improvements include a new ash storage facility to be used for amending dewatered sludge, new biogas scrubber, and a new 350 kW biogas generator.
Summary

Mr. Taber has extensive experience in the planning, design, and construction of infrastructure and asset management projects. He has been involved in civil engineering projects, and now focuses on planning, developing, and implementing asset management programs and working with organizations to improve their operations and management of their assets.

Asset Management

Mr. Taber has helped clients with asset management programs that include the optimal selection, maintenance, operation, inspection, and renewal of assets to maintain a desired level of service at the lowest life cycle cost.

Asset management programs he has developed have helped clients:

- Prolong the life of assets and capital investments
- Improve security and safety and reduce risks due to failed or poorly performing assets
- Treat all decisions as investment decisions to maximize limited financial resources
- Make costs transparent to support financial decisions
- Choose capital projects that meet the system’s true needs
- Base revenue needs on sound operational decisions
- Enhance the sustainable use of physical resources
- Move to a proactive approach to maintenance and managing assets

Wastewater Infrastructure

Mr. Taber has prepared facility plans to evaluate the upgrade of wastewater facilities to meet future needs while providing protection of the water supply aquifer. Evaluations have involved investigating additional sewers, plant upgrades, package wastewater treatment plants, advanced treatment on-site systems, and multiple unit on-site systems. He has managed new and upgraded pump station projects, sanitary sewer evaluation studies, prepared Environmental Quality Review applications, and assisted with Combined Sewer Overflow (CSO)/Sanitary Sewer Overflow (SSO) abatement projects, designed odor control and chemical system improvements, and assisted with trunk sewer replacement/rehabilitation projects.

Relevant Project Experience

Asset Management Plan, Wastewater Treatment Plant, Village of Weedsport

Chief technical advisor for the development of an asset management plan and implementation of a computerized maintenance management system for the wastewater treatment plant and collection system. In addition to identifying critical assets and the remaining useful life of all assets, the plan created and maintains an electronic inventory of assets; implements a documented maintenance program with work orders; better captures costs associated
with maintaining and repairing assets; manages parts and vendors better; establishes budget line items for replacing and rehabilitating assets; and reduces paperwork.

Asset Management Plan, Wastewater Treatment Plant, for the Village of Port Byron, NY. - Project involved the inventory of collection system assets, through the use of GPS and historical data and the development of a database of sanitary sewer collection system assets with mapping created in ArcGIS. The Asset Management Plan contains an overview of the utility, mission statement, level of service agreement, critical asset list, operation and maintenance strategy, capital investment program, and financial strategies.

Rehabilitation and Upgrade of Seven Oneida Lake Pump Stations, Brewerton, NY
B&L provided standardized condition assessments of seven pump stations; completed in real-time using forms integrated into the Maximo interface, which were created by B&L. B&L also provided risk assessments, field investigations, and recommended Capital Improvement Plans (CIPs) with increased energy conservation and management profiles at each pump station, employing LEED design strategies. Once the CIPs have been approved by OCDWEP, B&L will provide Preliminary Design Drawings, Final Design Drawings, and Construction Phase assistance. Mr. Taber was Project Manager responsible for asset management services and documentation.

Village of Malone - GASB 34 Infrastructure Inventory and Assessment
B&L worked with the Village of Malone to develop an Asset Infrastructure Inventory and Valuation. The purpose of this effort is to inventory, determine original cost, and depreciation value of the Village’s infrastructure capital assets as set forth by the capital asset reporting requirements of GASB Statement 34. B&L provided an Asset Inventory System Tool for managing inventory of fixed capital assets and reviewed GIS data, maps, drawings, reports to facilitate the inventory and valuation of infrastructure assets.
Summary

Mr. Baird has extensive experience in preliminary and final highway design and environmental design for various state agencies, municipalities and private industry. He has been responsible for the preparation of design approval documents that vary from simple to complex environmentally-sensitive projects involving wetlands, water quality, historic and cultural resources, noise analysis and mitigation among other environmentally sensitive issues. Mr. Baird’s experience also includes the design of urban, rural, and suburban highway project water quality treatment and water quantity control systems for New York State Department of Transportation, county, and other municipal projects. The designs incorporate the requirements of Regulated MS-4s, the Federal Clean Water Act and the NYS Stormwater Management Design Manual. While Mr. Baird’s project experience includes preparing designs that incorporate the standards required, they also include designs that recognize the balance between what can be reasonably achieved within the project scope and budget from what the “textbook” says. Led by Mr. Baird, designs that include low maintenance, in-conspicuous treatment and storage, innovation, and cost effectiveness are a part of B&L’s Team developed designs.

As a Certified Professional in Erosion and Sediment Control (CPESC), Mr. Baird understands requirements for not only the design of erosion, sediment, and stormwater management practices, but also the “in-the field” practicality of requirements as set forth by the NYSDEC Stormwater Pollutant Discharge Elimination System (SPDES) permitting program and regulations.

Relevant Project Experience

Columbia Greene Community College - Capital Improvements Project
B&L was hired to identify energy saving opportunities and design capital improvements throughout the campus, including the educational buildings, the onsite wastewater treatment plant and the well-fed water treatment plant. Improvements include an emergency management system, demand controlled ventilation, chiller replacement, supplemental cooling, and energy efficient pump and control system upgrades/replacements for the water treatment plant, including a solar powered mixer unit.

Syracuse Connective Corridor, City of Syracuse, Syracuse, NY
Mr. Baird was involved in the drainage and roadway design for the reconstruction of this $21M project involving 1.7 miles of urban streets connecting Syracuse University to downtown Syracuse, including design for bicycle and pedestrian facilities, green infrastructure design, and integration of art and cultural nodes.

Beach Road Reconstruction, Warren County, Lake George, NY
Mr. Baird led the highway design, drainage design, stormwater management, and heavy duty porous pavement system for the reconstruction and upgrades
Thomas C. Baird, P.E., CPESC  
Senior Managing Engineer

along a 1.1 mile multi-modal corridor along Beach Road in the Village and Town of Lake George.

**Term Agreement, Green Infrastructure Training, NYS Thruway Authority**

Mr. Baird has conducted training sessions for the NYSTA on Erosion & Sediment Control focused on Linear and transportation related site development projects, Heavy Duty Porous Pavement design, and techniques on merging green infrastructure with highway and transportation related projects. His involvement also includes design reviews, MS4 compliance elements, and various tasks as part of a 4-year term agreement.

**Engineering Services for the Community Development Block Grant Program**

**NYS CDBG Project #474PR69-11, Albany Avenue Area Reconstruction Project**

B&L is providing engineering services for the creative design of a street reconstruction project along the entire length of Albany Avenue from George Street to the Watervliet/Green Island municipal boundary at 25th Street in Watervliet. The street improvements for Albany Avenue shall include the following work: re-grading and resurfacing, curb and gutter, installation of new asphalt pavement, replacement of water, sanitary sewer, and storm sewer lines as indicated in the 2011-2012 Community Development Block Grant Application. B&L is incorporating green infrastructure solutions wherever possible.
Wastewater Treatment Plant Long-Term Capital Plan
Contract #CK-EDSP-2014-002

Wastewater Engineering Qualifications
Wastewater Engineering Qualifications

Barton & Loguidice (B&L) is committed to finding the best solution for each individual wastewater management challenge, whether it be application of conventional technologies, or new innovations in wastewater pumping, conveyance or treatment. With more than half a century of experience providing wastewater engineering solutions to municipal clients, B&L’s knowledgeable professionals are available to help with every stage of the City’s project, from initial planning to start-up assistance and grantsmanship to public communications.

As part of the firm’s comprehensive services, B&L provides assistance with asset management, process and facilities design, permitting and environmental quality reviews. Demands for regulatory compliance together with aging infrastructure and operational cost increases have driven local municipalities and private organizations to look for alternatives to building. Retrofitting and upgrading current facilities are proven ways to improve efficiency and save costs. B&L has established its Water/Wastewater Group as a leader in wastewater facilities engineering, particularly in the area of funding, planning, design and construction of new or rehabilitated municipal wastewater, treatment plants and pumping stations.

The wastewater engineering services which B&L has provided include:

- Wastewater treatment plant planning, design, rehabilitation, expansion, and construction
- Wastewater facilities start-up, troubleshooting, operation, maintenance, operator training
- Facilities planning
- Permitting and regulatory interface
- Infiltration/inflow analysis
- Wastewater collection systems
- System rehabilitation
- System planning and design
- Instrumentation and control
- Supervisory Control and Data Acquisition (SCADA)
- Implementation
- Pumping stations
- Comprehensive studies

- Sludge management
- Process and energy optimization
- Rate studies
- Financial analysis and grantsmanship
- Quality assessment and improvement
- Sewer separation
- CSO/SSO evaluation and planning
- Operations/process optimization assistance

Wastewater Treatment Plant Evaluation, Design and Construction Capabilities

Wastewater treatment/pretreatment needs vary from industry to industry and site to site. However, the services desired are generally consistent across all industries and include the following:

- Minimizing capital and operating costs
- Minimizing the need for ongoing or recurring maintenance
- Utilizing less energy intensive equipment and processes
- Providing flexibility and support to plant production
- Maintaining regulatory compliance
- Maintaining a high degree of flexibility, reliability, and adaptability to changes in flows and constituents
- Continuing strides toward sustainability including waste minimization, reduction and reuse

B&L has historically provided a full range of services in response to these needs relative to wastewater treatment. Services include:

- Wastewater characterization
- Waste reduction/minimization
- Permitting
- Technology evaluation
- Facility design (conceptual, preliminary, and final)
- Treatment facility operation
- Treatment facility troubleshooting
- Facility optimization and compliance monitoring
In the early design phases, a matrix of evaluation criteria is established to allow adequate review of alternative technologies. Criteria would include:

- Capital and operating costs
- Flexibility
- Reliability
- Spatial requirements
- Degree of operator attention and instrumentation
- Useful life
- Ease of operation

Our design teams seek to implement pragmatic sustainable design concepts in our client’s treatment plant projects. What this means to the client is that we will work with the client’s staff, including operators, to identify concepts that make sense from an operational and cost standpoint, and are good practice. Working together will ensure that the project “sustainability” will not go “overboard.”

**Operations**

B&L’s Wastewater Division includes two Grade 1A Water Treatment Operators and one Grade 4A Wastewater Operator with combined experience of more than 70 years, ready to assist our clients with start-up, training, and initial operation of new wastewater infrastructure. We can assist with preparation of operation and maintenance manuals, including daily operating procedures, laboratory testing, SPDES requirements, and monthly reporting protocol. Following completion of construction, we apply our licensed wastewater operator for start-up and training, process control, and troubleshooting.

**Asset Management**

B&L’s staff has been working with clients to improve their asset management programs and systems for more than 15 years. Our team has expertise in all aspects of implementing asset management to improve organizational efficiency, and our staff is nationally recognized for their expertise in asset management. Our technical resources have diverse engineering and utility backgrounds, with our technical leaders being well versed in the complexities of water infrastructure and the business as a whole. B&L applies asset management concepts for preparation of computerized operation and maintenance manuals and implementation of asset management plans for preventative maintenance programs, task order generation, and capital project planning.

**NYSERDA FlexTech Consultant**

As a New York State Energy Research and Development Authority (NYSERDA) Flex Tech consultant, B&L is prequalified and under term agreement with NYSERDA to assist communities with evaluation of energy efficiency projects. This program provides up to 50% grant funding for the evaluation of energy efficiency alternatives at municipal WWTPs, capped at 10% of the facilities annual energy cost. Our Team has effectively integrated FlexTech energy evaluations into several Preliminary Engineering Reports/evaluation documents prepared for WWTP upgrade projects Green and Sustainable Design.

**Sustainable and Green Design**

B&L has substantial experience with energy efficiency projects that include photovoltaics, geothermal heating and cooling systems, combined heat and power systems, gas recovery/ gas-to-energy facilities, energy efficient lighting, energy analyses, greenhouse gas inventories, and energy management systems control.

B&L has 17 LEED® (Leadership in Energy Efficiency and Design) Accredited Professionals in various disciplines within the firm which provides clients with diverse expertise in sustainable design. We have participated in the design of LEED certified projects, achieving energy conservation and efficient building performance through sustainable design practices, and are a member of the U.S. Green Building Council (USGBC).

**Additional Services Offered by Our Technical Staff**

B&L’s wastewater projects are supported by the firm’s Facilities and Environmental Groups providing architectural design; structural, mechanical, and electrical engineering, and environmental compliance.

**Architectural Design Services:** building facilities inspections, feasibility studies, space utilization, ADA and building code compliance, roof replacements, interior/exterior renovations, new building, LEED design, and building additions.
**Structural Engineering:** structural analysis and design; building foundations, roofs and facades; equipment foundations; structural steel, reinforced concrete and masonry structures/ covers; caissons; concrete mats; cantilever retaining structures; sound reduction systems; blast-resistant structures; duct and pipe support systems; tanks; and liquid storage reservoirs.

**Mechanical Engineering:** commercial and industrial HVAC systems, industrial ventilation, chilled water systems, steam and hot water boilers, utility and process piping, fire protection, plumbing systems, mechanical equipment installations, energy systems, and cogeneration.

**Electrical Engineering:** power systems, energy production, communications systems, security systems, power supply planning, primary service, substations and switchgear, power distribution, energy efficient lighting systems, site lighting, controls and instrumentation (SCADA), electrical utility audits, load and energy management, cogeneration facility siting and design, bulk power supply, and wheeling contract negotiations.

**Environmental Compliance:** ecological sensitivity investigations, permitting, environmental compliance, planning and auditing, Clean Air Act compliance, pollution prevention plans, chemical bulk storage, MS4, environmental site assessments, SEQR/NEPA compliance.
Wastewater Treatment Plant Long-Term Capital Plan

Contract #CK-EDSP-2014-002

Project Descriptions and Experience Tables
Sewer Infrastructure Assessment—Gateway Action Plan Task #4
Adirondack Gateway Council
Saratoga, Warren and Washington Counties, New York

Background
The Adirondack Gateway Council (AGC) consists of several municipalities and municipal organizations in the counties of Saratoga, Warren and Washington whose primary goal is to create a comprehensive regional development plan to serve as a guide for the region to grow in a sustainable manner. The Council was awarded a Regional Sustainability Planning Grant in 2011 from the US Department of Housing and Urban Development for this purpose. The Council requested the development of an action plan to address the issue of inadequate wastewater/stormwater treatment and conveyance capacity. The majority of the sewage or stormwater collected by the sewer systems in the municipalities represented by the AGC is treated at one of two plants: the Glens Falls WWTP and the Washington County Sewer District #2 WWTP.

Our Services
Barton & Loguidice (B&L) was retained by the AGC to prepare this action plan. B&L completed a regional and multi-community general study of the existing and future sanitary sewer needs. The plan included:

- An evaluation of existing conditions and capacities of the conveyance systems and WWTPs
- A regional growth assessment, including the development of population projections and the projected wastewater flows for each municipality
- The identification of necessary improvements for both the conveyance and treatment infrastructure needed to satisfy future regional sewer needs
- Opinions of probable cost for each of the recommended improvements
- A review of each WWTP Combined Sewer Overflow Long-Term Control Plan
- The identification of funding opportunities for the proposed construction projects

Population and flow projections were completed up to the year 2040. Two design flows for each municipality were developed: one based on the population projections, and one based on a full build-out of all available land for development using parcel zoning codes and each community’s economic development plan. Six scenarios were developed for various combinations of new development areas being routed to one of the WWTPs. Each scenario was assessed for hydraulic conditions, cost effectiveness, environmental/historical resource impact, the capacities of the WWTPs, and the improvements necessary for each conveyance system/WWTP to accept the additional flows.

Contact
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Wastewater Treatment Plant and Collection System Improvements
Village of Monticello, New York

Background
The Village of Monticello’s sewer system was built more than 50 years ago and according to previous sewer system evaluation surveys, much of the existing collection system is experiencing inflow and infiltration through damaged pipes. The wastewater treatment plant equipment and many of the pump stations in the system are at the end of their useful life and require improvements.

Our Services
Barton & Loguidice (B&L) was retained by the Village to assist with planning, grantsmanship, design, bidding and construction phase services for improvement of the treatment plant, pump stations and sewer system.

The project involves:

- Replacement of East Broadway and Racetrack Pump Station pumps
- Replacement and upgrade of Route 42 Pump Station
- Construction of grit removal building at Race Track Pump Station
- Installation of cured-in-place liner system along a portion of West Broadway
- Replacement of 500-foot section of Park Ave. and Broadway
- Replacement of 25 identified manholes experiencing infiltration
- Major upgrade of all components of the treatment plant

The plant was brought online in 1984 and is rated for 3.1 million gallons per day (mgd). The plant experiences an average daily flow of 1.7 mgd; however, peak day flows and peak instantaneous flows can reach as high as 7.1 mgd and 11.1 mgd, respectively, surpassing the rated capacity. These high peak flows are a direct result of significant inflow and infiltration problems within the collection system. Work at the WWTP includes:

- Retrofitting existing two oxidation ditches and stormwater retention basin into three sequencing batch reactor (SBR) tanks
- Retrofitting one of the existing clarifiers as an aerobic digesters
- Replacement and upgrade of the existing sand filters with four disc filters
- Replacement of the existing aerated grit chamber with a vortex grit separator
- Construction of addition to the headworks building for new grit system
- Construction of addition to the sludge processing building
- Replacement of progressive cavity sludge handling pumps
- Construction of reed beds for on-site sludge processing
- Energy efficiency improvements to the filter, headworks and sludge buildings
- New 1.5 MW diesel emergency generator system

B&L assisted with the funding application and the project received $14.4 million grant and low-interest funding package from the USDA-RD to finance the project, the largest ever award committed in New York by the USDA-RD. This project is currently in design.
Background

Barton & Loguidice developed a Facilities Plan for improvements to the Ellenville WWTP. Despite many modifications in the past, much of the plant equipment was still original. Visible aging and wear has occurred on the facilities and equipment, while several process components have failed in recent years. This Facilities Plan was created to address the need to upgrade and update the plant while incorporating new energy efficient treatment technologies and future growth needs of the Village.

The Village of Ellenville desired the use of photovoltaics to assist in providing renewable energy to their facility. B&L designed a 50 kW PV system for the site. The PV module arrays are to be pole mounted arrays adjacent to the Plant Operations building. The output of the PV inverters will be connected to the sites main 480/277 volt electrical distribution switchboard. The PV system is designed around 224 PV panels, each capable of providing approximately 225 watts of renewable energy.

The new WWTP was designed to treat up to 1.4 mgd and meet several new SPDES permit limits including more stringent summer ammonia and summer UOD limits, new winter ammonia limit and new winter UOD limits.

Various treatment alternatives were reviewed with regard to advantages, disadvantages, project costs, life cycle costs, ease of operation and maintenance, etc., and the following new improvements were recommended:

- Preliminary treatment building with rotary fine screen, vortex grit removal system, flow metering and influent pumps
- Sequencing batch reactors in concrete basins with new aeration building
- Equalization tank and pumps
- Open channel ultraviolet disinfection
- Aerobic digestion
- Sludge drying beds and decant pump station
- Electrical and instrumentation/control improvements
- Building energy improvements (architectural, HVAC and plumbing)
- New emergency generator and various site improvements
- Geothermal and effluent heat recovery systems

B&L also assisted the Village with selling of their existing sludge belt filter press and associated polymer feed system to another New York State community. B&L provided construction administration and observation services for this

Client:

Joe Stoeckler
Village Manager
Village of Ellenville
Government Center
2 Elting Court
Ellenville, NY 12428
(845) 647-7080
Villagemanager@villageofellenville.com

Total Project Cost: $11.5 million
Completion Date: 2013
Wastewater Facilities Planning—Project Seneca
Village of Watkins Glen, New York

Barton & Loguidice was retained by the Village of Watkins Glen to assist in Planning Phase services for the development of a new regional Wastewater Treatment Plant (WWTP), which would serve the Villages of Watkins Glen and Montour Falls. Similar to most infrastructure in older municipalities, each Village’s WWTPs has many aging components that are at or near the end of their useful life. The Village of Watkins Glen was experiencing on-going SPDES permit violations and a NYSDEC Consent Order was imminent.

Scope of Services
The initial task was the development of a Preliminary Engineering Report (PER) that provided a detailed alternative evaluation for the proposed 1.2 MGD Regional WWTP as well as the conversion of the Montour Falls WWTP to a flow equalization/pump station facility and the construction of a new Watkins Glen main pump station. The PER included itemized associated capital, operation and maintenance costs, and estimated annual user costs for capital project implementation. The project had a fast-tracked schedule with a critical completion date, which corresponded with the project meeting the NYSEFC CWSRF Intended Use Plan (IUP) deadline and subsequent annual listing.

The recommended Regional WWTP included a new two-story Control Building with a headworks facility, control room/office space, garage, and blower room, a 3-tank sequencing batch reactor (SBR), tertiary treatment with cloth-disk filtration, and UV disinfection. The proposed solids handling included waste sludge thickening followed by two-step anaerobic digestion, which would allow the facility to receive septage and other food waste streams. Final sludge disposal will be to a new Regional Composting facility. The existing Watkins Glen WWTP will be decommissioned and demolished, and a new pumping station will be constructed on an adjacent Village owned property. A new force main will be constructed to convey Village wastewater to the new Regional WWTP. The Montour Falls WWTP will be decommissioned and converted to a new pump station and wet-weather flow management facility.

In addition to completing the PER, B&L has been working with both Villages, Schuyler County Partnership for Economic Development (SCOPED), to move the project into Planning Phase services which include:

- Detailed site selection analysis of seven alternative locations for the new Regional WWTP. The sites were analyzed based on criteria from cost, environmental impacts/permits, land acquisition considerations, and public input/concern.
- Detailed financial alternative analysis.
- Assistance with the SEQR process including the development of wetland delineation report, and threatened and endangered species habitat assessments.
- Assistance with development of the Intermunicipal Agreement.
- Assistance with public communication including the development and delivery of presentations and key messages.
- Development of funding applications including the CWSRF, CFA, and various other grant programs.

Planning Phase services will be completed by the end of 2014 which will allow the project to proceed to Design and Construction from 2015 through 2017.
Joint Wastewater Collection and Treatment System  
Village of Cayuga and Town of Aurelius, Cayuga County, New York

Background
The Village of Cayuga owns and operates a sanitary sewer system, including a sewage pump station and a 0.10 MGD facultative, non-aerated lagoon wastewater treatment plant (WWTP). The treatment facility provided inadequate treatment which resulted in numerous NYSDEC SPDES permit violations, and ultimately a Consent Order requiring the upgrade or replacement with a new treatment system. In addition, lakeshore area properties in the Town of Aurelius, to the north and south of the Village, were experiencing septic system failures and were in need of public sewer service.

Our Services
Barton & Loguidice assisted with planning phase services which determined that the most cost-effective solution was a consolidated, joint sewer system. The joint sewer system included improvements to the Village sewage pump station and force main, a new sequencing batch reactor (SBR) WWTP, and low-pressure sewer (LPS) systems for the Town lakeshore areas. As part of the planning phase, B&L developed the Map, Plan and Report for the Town Lakeshore Sewer District formation, assisted the SEQR coordinated review process, assisted in the development of the Intermunicipal Agreement and preliminary design phase services, including base survey mapping, soil bores, and cultural resources investigations.

B&L was further retained to provide design and construction phase services. Highlights of the proposed joint sewer system components include:

New 0.12 MGD WWTP
- Headworks facility including an influent automatic screw screen and constant velocity grit channel
- Two-tank SBR system designed to be constructed in a pre-stressed concrete tank
- UV disinfection
- Solids handling including dual aerobic digesters and reed bed sludge dewatering

Village Pump Station
- Upgraded with new duplex submersible pumps with VFD control and 60 kW emergency generator along with 11,000 LF of 8” force main to new WWTP

Town/Village Low Pressure Sewer System
- Approximately 2.3 miles of 2- and 3-inch low-pressure mains
- Grinder pumps (155) for both individual (110) and shared (45) residential services

Funding Assistance
B&L assisted in securing project funding for both municipalities. Funding was obtained from both USDA Rural Development and NYSEFC Clean Water State Revolving Fund programs. In addition, B&L was retained by the Village to complete a value engineering evaluation that identified approximately $500,000 through various measures, including the consolidation of construction contracts with a concurrent Town/Village joint water system project.

Clients:
Helen Day
Mayor
Village of Cayuga
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Ed Ide
Supervisor
Town of Aurelius
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Auburn, NY 13021
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Funding Secured:
Village Portion ($6.25 million)
- $2,000,000 USDA RD Direct Grant
- $820,000 CWSRF Hardship Grant
- $3,430,000 CWSRF 0% Hardship Loan

Town Portion ($2.57 million)
- $200,000 USDA RD Direct Grant
- $2,370,000 CWSRF 0% Hardship Loan

Total Project Cost: $8,820,000
Completion Date: Construction currently underway
FAGE Facility Expansion—CAST Process Improvements
Gloversville-Johnstown Joint Wastewater Treatment Facility

B&L is providing engineering services related to the improvements to the Gloversville-Johnstown Joint Wastewater Treatment Facility (GJJWTF) as necessary to treat additional wastewater that will be generated by the expanded FAGE Greek yogurt plant. The FAGE yogurt plant will be increasing flow and BOD loads to the GJJWTF by 2016 from approximately 292,000 gallons per day and 4,560 lbs BOD5/day to a total of approximately 835,000 gallons per day and 12,170 lbs BOD5/day.

The first phase of the project included preliminary engineering and preparation of a Facility Plan and Basis of Design Report summarizing the necessary improvements to the GJJWTF. As part of the preliminary engineering, B&L examined three different alternatives, working closely with plant staff to ensure the selected improvements could be integrated into the existing facilities with the lowest capital and operating costs. The three alternatives examined were as follows:

• Alternative 1: Expand the existing dissolved air floatation (DAF) facilities to pretreat the additional FAGE wastewater and examine the need for equalization. This scenario was eliminated from consideration because of the complexity and chemical requirements of the existing DAF system.

• Alternative 2: Expand the conventional extended aeration process utilizing existing aeration tanks/aeration systems to treat additional FAGE process waste and examine the need for equalization. The scenario was eliminated from consideration due to the high capital and operating cost of additional aeration tanks, final clarifiers and 600 HP of additional aeration capacity required to provide the necessary treatment.

• Alternative 3: Treat the FAGE wastewater through a modified Contact Adsorption Settling Thickening (CAST) process using waste activated sludge (WAS) from the existing aeration process to adsorb the influent organic waste load in a new CAST process tank and examine the need for equalization. Following mixing and adsorption, the waste sludge would be thickened on gravity belt thickeners prior to processing in the anaerobic digesters.

Alternative 3 was selected as the most cost effective way to treat the additional FAGE waste. Bench scale and full scale pilot testing were completed and verified the BOD removal efficiencies of the CAST process. Biowin modeling was also completed and verified the results of the pilot testing.

Following approval of the Facility Plan and Basis of Design Report by the GJJ Sewer Board, B&L was retained to provide final design and bidding services for the improvements. The CAST process improvements include installation of additional yard piping, retrofit of an existing aeration tank to an equalization tank with floating mixers, installation of a new equalization pumping station, a new 400,000 gallon CAST process tank, a new equipment building to house the process blowers and chemical feed equipment, retrofit of an existing gravity sludge thickener to a CAST settling tank and installation of a CAST return sludge pump to recycle sludge back to the CAST tank.

Additional facility improvements included with the project are installation of a new biological desulphurization system to clean biogas sent to the Combined Heat and Power System, and installation of a new 350 kW generator to utilize the additional biogas production from the additional organic loading being sent to the digesters. It is expected that the facility improvements will provide for 100% of the power needs at the GJJWTF with the ability to export power to the grid.

The project is currently under construction.
NYSERDA FlexTech Analysis of Wastewater Treatment Facility
Town of Rotterdam, New York

Background
The Town of Rotterdam’s Wastewater Treatment Plant was constructed more than 65 years ago and has undergone a number of rehabilitations to maintain compliance with effluent discharge limits and meet the needs of a developing community.

Barton & Loguidice prepared a facilities plan and energy analysis of improvements to the Town’s Wastewater Treatment Plant which evaluated treatment process alternatives based on energy efficiency and life-cycle cost.

Analysis of the approved future developments within the Town revealed that significant improvements would be required to maintain compliance with the 30 mg/L BOD and TSS effluent limitations and provide adequate treatment capacity. A number of treatment processes had outlived their useful lives or had exceeded their capacity and required replacement. To address the WWTP’s current and future treatment needs, a phased approach was developed. Phase I work was designed to repair/replace components of the existing treatment process to meet the current permitted influent flow rate of 1.5 MGD. Phase II work was designed to repair/replace components of the system to meet the future influent flow rate of 2.0 MGD based on approved development.

Proposed Phase I work at the WWTP, as discussed in the facilities plan, includes:

- Replace existing trickling filter distributor arms and improve flow dosing balance
- Construct additional secondary clarifier with additional sludge pumps
- Rehabilitate existing tertiary filter
- Replace existing UV disinfection with chlorine disinfection
- Construct additional gravity sludge thickener and septage receiving station
- Rebuild existing sludge belt filter press
- Replace existing emergency generator and ATS
- Energy efficiency improvements to the headworks, filter, digester, and operations buildings

Proposed Phase II work at the WWTP, as discussed in the facilities plan, includes:

- Replace existing mechanical screen
- Construct larger grit removal system
- Construct additional primary clarifier
- Replace existing primary sludge pumps
- Replace existing intermediate pump station
- Construct new plastic media bio-towers
- Expand existing sludge press building and install new sludge press
- Construct improvements to existing outfall sewer
- Install new SCADA system
- Demolition of existing

Client:
Town of Rotterdam
John F. Kirvin Governmental Ctr
1100 Sunrise Boulevard
Rotterdam, NY 12306
(518) 355-7660

Total Project Cost: $12,200,000
Completion Date: 2014
<table>
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<td>Rotterdam, Town of</td>
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<td>Rouses Point, Village of</td>
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<td>Sanford, Town of</td>
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<td>West Monroe, Town</td>
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# Barton & Loguidice

## NYSERDA Funded Projects

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<td><strong>FlexTech Projects</strong></td>
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<td>Town of Petersburgh Municipal Building FlexTech Study</td>
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<td>Oneida Herkimer Solid Waste Authority CNG Fueling System</td>
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<td>Champlain WWTP</td>
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<td>City of Oneida Recreation Center Boiler Study</td>
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<td>Village of Saranac Lake Adaptive Hydro Energy Study</td>
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<td>Baldwinsville Central School District</td>
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<td>City of Saratoga Springs Geyser Crest Well Field</td>
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<td>Sandy Creek Central School District</td>
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<td>Hoosick Falls Central School District</td>
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<td>Albany Country Club</td>
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<td>Skaneateles Community Recreation Center</td>
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<td>Village of Dundee WWTP Energy Assessment</td>
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<td>Town of Rotterdam WWTP Facilities Plan</td>
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<td>Columbia-Greene Community College</td>
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<td>Town of Liberty WWTP Facilities Plan</td>
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<td>Village of Weedsport WWTP Facilities Plan</td>
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<td>Town of Queensbury WTP Energy Study</td>
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<td>Carrier Corporation Steam Conservation Study</td>
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<td>Horseheads Central School District</td>
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<td>Gehring Tricot Corporation</td>
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<td>Town of Bethlehem Pump Station Energy Evaluation</td>
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<td>Village of Whitehall WTP Facilities Plan</td>
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<td><strong>Water/Wastewater Efficiency Program</strong></td>
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<tr>
<td>Village of Philadelphia WWTF</td>
<td>(1)</td>
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<td>Town of Elizabethtown WWTP</td>
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<td>Village of Ellenville WWTP</td>
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<tr>
<td>Town of Warrensburg WWTP</td>
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<tr>
<td>Village of Weedsport WWTP</td>
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## Barton & Loguidice
### NYSERDA Funded Projects

#### Water/Wastewater Efficiency Program

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<tr>
<th>Project Description</th>
<th>Year</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Town of Owasco Archie St. Pump Station</td>
<td>2009</td>
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<tr>
<td>Town of Brookhaven Sewage Treatment Plant (1)</td>
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<td>Town of Essex WWTP</td>
<td>2009</td>
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<td>Village of Richfield Springs WWTP (1)</td>
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#### Technical Assistance Projects

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<td>DANC Water &amp; Wastewater System Energy Assessment</td>
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<td>Crucible Steam Energy Conservation Study</td>
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#### ARRA Assistance Energy Conservation Studies

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<td>St. Lawrence County Highway Department (PON 4)</td>
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<td>Horseheads Central School District (PON 4)</td>
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<tr>
<td>Madison County Solar Landfill Capping Project (RFP 10) Block Grant</td>
<td>2011</td>
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(1) Services included technical review of engineering documents prepared by other consultants.
<table>
<thead>
<tr>
<th>Municipality/Project</th>
<th>Funding Source</th>
<th>Total Dollar Amount</th>
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<tbody>
<tr>
<td><strong>Altamont (V)</strong></td>
<td>SRF Subsidized Loan</td>
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<tr>
<td>Wastewater Treatment Plant Improvements</td>
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<tr>
<td><strong>Aurelius (T)</strong></td>
<td>CWSRF Hardship Loan</td>
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<tr>
<td>Lakeshore Sewer District Collection System</td>
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<td>USDA RD Loan</td>
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<td><strong>Bethlehem (T)</strong></td>
<td>NYSERDA</td>
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<tr>
<td>Evaluation of 12 Wastewater Pump Stations</td>
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<td>North Bethlehem Forcemain and Sanitary Sewer Improvements</td>
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<td><strong>Camillus (V)</strong></td>
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<td>North Street Sewer Rehabilitation</td>
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<td>Haney Lane Sewer Rehabilitation</td>
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<td><strong>Cayuga (V)</strong></td>
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<td>New Wastewater Treatment Plant/Collection System Extensions</td>
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<td>USDA RD Grant</td>
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<td>USDA RD Loan</td>
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<td><strong>Clifton (T)</strong></td>
<td>CWSRF Hardship Loan</td>
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<td>Hamlet of Newton Falls Sewer District</td>
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<td><strong>Cobleskill (V)</strong></td>
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<td><strong>Dundee (V)</strong></td>
<td>Office for Community Renewal—Economic Development Grant</td>
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<td><strong>Elbridge (T)</strong></td>
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<td>Town Center Sanitary Sewer</td>
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<td><strong>Ellenville (V)</strong></td>
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<td>ARRA Stimulus Fund (for solar panels)</td>
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<td>WWTP Improvements (2009)</td>
<td>RD Loan (Formerly FmHA)</td>
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# Barton & Loguidice

## Partial Listing of “Aided” Municipal Wastewater Projects

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<th>Municipality/Project</th>
<th>Funding Source</th>
<th>Total Dollar Amount</th>
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<td><strong>Hastings (T)</strong></td>
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<td>RD Grant (Formerly FmHA)</td>
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<td>East Fort Brewerton Sewer District</td>
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<td>CWSRF Guarantee Loan</td>
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<td><strong>Lowville (V)</strong></td>
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<td>W. Phoenix Sewer District - Sewers</td>
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<td>W. Phoenix Sewer District - Laterals</td>
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<td>Parkway/Lincoln Sewer District</td>
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<td>Whispering Oaks Sewer District Improvements</td>
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<td><strong>Marcellus (V)</strong></td>
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<tr>
<td>Sewage Treatment Plant Upgrade and Collection System Rehabilitation</td>
<td>CDBG Grants</td>
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<td><strong>Mechanicville (C)</strong></td>
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<tr>
<td>Sanitary Sewer Overflow Rehabilitation</td>
<td>Round 9 Water Quality Grant</td>
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<td>Senator Bruno: Member Initiative Initiative</td>
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<td>Sewer System Upgrade Plan</td>
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<td><strong>Monticello (V)</strong></td>
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<td>Wastewater Treatment Plant Upgrade</td>
<td>USDA Federal Stimulus Funds</td>
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<td>USDA Lower Interest Loan</td>
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<td><strong>New Berlin (T)</strong></td>
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<tr>
<td>Chenango Lake Sewer District (Proposed)</td>
<td>CWSRF Hardship Loan</td>
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<td></td>
<td>CWSRF PF Grant</td>
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<tr>
<td><strong>Owasco (T)</strong></td>
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<tr>
<td>Sewer District No. 1–High Flow Pump Station and Equalization Tank</td>
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<td>Sewer District No. 1–Archie Street Wet-Weather Pump Station, Sewer Rehabilitation</td>
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<td><strong>Port Byron (V)</strong></td>
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<tr>
<td>Wastewater Treatment Plant Improvements</td>
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<tr>
<td>WWTP Solar Panels</td>
<td>Green Innovation Grant (GIGP)</td>
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<td>Municipality/Project</td>
<td>Funding Source</td>
<td>Total Dollar Amount</td>
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<td><strong>Pulaski (V)</strong></td>
<td>Bond Act Grant</td>
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<td>Storm Sewer Improvements/Inflow Sources/Sewer Separation</td>
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<td>Sanitary Sewer Rehabilitation, Contract No. 2</td>
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<td>WWTP Improvements, Contract No. 3</td>
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<td>Sanitary Sewer System, County Route 1/1A</td>
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<td><strong>Sennett (T)</strong></td>
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<td>Wastewater Treatment Plant</td>
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<td><strong>Sherburne (V)</strong></td>
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<td>ARC Grant</td>
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<td>Bridgeport Sewer District - Collection System</td>
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<td>Bridgeport Sewer District - Private Lateral Connections</td>
<td>HCR CDBG Grant</td>
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<td><strong>Tully (V)</strong></td>
<td>HUD Grants</td>
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<td>Sanitary Sewers, Pumping Stations, and Wastewater Treatment Plant</td>
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<td><strong>Vernon (V)</strong></td>
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<td>Sconondoa Sewer District</td>
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<td>Verona Hamlet Water/Sewer System Improvements</td>
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<td>Durhamville Sewer District</td>
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<td>North Shore Sewer District (Proposed)</td>
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<td><strong>Watkins Glen (V)/Montour Falls (V)</strong></td>
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<td>Seneca Joint WWTP (2013 IUP Listing)</td>
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<td><strong>Weedsport (V)</strong></td>
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<td>WWTP Facilities Plan</td>
<td>NYSERDA</td>
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<td>Sanitary Sewer System Rehabilitation and WWTP Improvements</td>
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<td>Big Bay Sewer District and Toad Harbor Sewer District Improvements</td>
<td>CWSRF Hardship Loan</td>
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<td>CWSRF Hardship Grant (Anticipated)</td>
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