



Legislative Branch

Resolution
RL Number:
RL-156
Date Submitted:
8/12/15

City Clerk, City Hall, Binghamton, NY 13901 607-772-7005

REQUEST FOR LEGISLATION

Requests for Legislation (RLs) may be submitted to the City Clerk's Office for consideration at City Council Work Sessions. RLs generated from within City Hall departments must be submitted to the Mayor, Comptroller and Corporation Counsel for review before submission. RLs generated by citizens may be submitted directly to the City Clerk's Office.

Applicant Information

Request submitted by: Gary R. Holmes, P.E.
Title/Department: Acting City Engineer, Engineering Dept.
Contact Information: grholmes@cityofbinghamton.com

RL Information

Proposed Title: Supplemental No. 1 Agreement with TimHaahs for the Parking Garage Repairs
Project to Provide Additional Construction Administration Services

Suggested Content: Supplemental No. 1 with TimHaahs for the Parking Garage Repairs Project is
to provide additional Construction Administration Services. The current condition of the Collier St.
Parking Garage requires more repairs and oversight by the design professional that were not in the
original bid. The cost of this Supplemental No. 1 is in the amount of \$144,225.00.

Additional Information

Does this RL concern grant funding? Yes No
If 'Yes', is the required RL Grant Worksheet attached? Yes No
Is additional information related to the RL attached? Yes No
Is RL related to previously adopted legislation? Yes No

If 'Yes', please provide Permanent Ordinance/Resolution/Local Law number(s): R14-22

OFFICE USE ONLY	
Mayor:	<u>[Signature]</u>
Comptroller:	<u>[Signature]</u>
Corporation Counsel:	<u>[Signature]</u>
Finance <input checked="" type="checkbox"/>	Planning <input type="checkbox"/> MPA <input type="checkbox"/> PW/Parks <input type="checkbox"/> Employees <input type="checkbox"/> Rules/Special Studies <input type="checkbox"/>

PROJECT: **City of Binghamton
Three Garage Restoration**

ADD SERVICE NO.: **1**

PROJECT NUMBER: **PHL14115.00**

DATE: **August 5, 2015**

COMPANY: **City of Binghamton**

PROJECT MANAGER: **Chris Gray, PE**

CLIENT CONTACT: **Gary Holmes**

CC: **Todd Helmer, PE**

Based on our previous discussions, TimHaahs is submitting additional services for the construction administration for the following items:

1. Increase frequency of site visits during restoration & provide additional details as required:

• **Description of Additional Service:**

- Increase frequency of site presence during restoration of the garages to a weekly basis. Current proposal anticipated fourteen (14) site visits. To-date, TimHaahs has expended fourteen (14) visits throughout CA from base contract. We anticipate seventeen (17) visits will be required to complete the balance of the work (anticipated completion of November 30, 2015).
- Provide updated details for unforeseen post-tensioned strand repairs.
- Provide updated details for unforeseen wall repair at Collier Street stair tower.

• **Reason for Additional Service:**

- Our previous proposal was based on the understanding that the City would oversee most of the repair work.
- The current condition of the Collier Street Garage, and the required repairs are beyond the extent of the initially bid project and warrant closer attention on the part of the design professional.
- More frequent site presence will allow for better understanding of the potential changes to the repairs, and whether or not the repair methodology needs to be re-evaluated.

• **Scope of Work for Additional Service:**

- Provide fifteen (15) additional site visits:
 - 5 visits x 8 hours/visit x \$125/hour = **\$5,000**
 - 12 visit x 8 hours/visit x \$200/hour = **\$19,200**
- Provide additional details needed to convey changes to the restoration work.
 - 60 hours x \$125/hour = **\$7,500**
 - 24 hours x \$200/hour = **\$4,800**
- Reimbursable Expense Increase: 17 trips x \$225/trip = **\$3,825**

Additional Service #1

2. Provide monthly site visit and report following completion of restoration work for the Collier Street Garage.

- Description of Additional Service:
 - Observe condition of the Collier Street Garage through the anticipated end of its useful life (Fall 2018). Provide a monthly letter report identifying any key issues that shall be addressed during throughout the remainder of the Collier Street Garage's anticipated useful life. For the purpose of this additional service, we have assumed the garage will remain in service until November 2018.
- Reason for Additional Service:
 - Provide the City with professional opinion and current status of the Collier Street parking garage as the structure is phased towards demolition.
- Scope of Work for Additional Service:
 - Provide monthly visit and letter report for Collier Street Parking Garage:
 - December 2015 – November 2016:
 - 4 visits x 10 hours/visit x \$125/hour = **\$5,000**
 - 8 visit x 10 hours/visit x \$200/hour = **\$16,000**
 - December 2016 – November 2017:
 - 4 visits x 10 hours/visit x \$130/hour = **\$5,200**
 - 8 visit x 10 hours/visit x \$208/hour = **\$16,640**
 - December 2017 – November 2018:
 - 4 visits x 10 hours/visit x \$135/hour = **\$5,400**
 - 8 visit x 10 hours/visit x \$215/hour = **\$17,200**
 - Reimbursable Expense Increase: 36 trips x \$235/trip = **\$8,460**
 - Note: Costs for future work are approximated to account for anticipated cost increases. Actual cost increases will be evaluated at the beginning of each year (January).

Lump Sum Professional Fee:

\$114,225.00

We are sending you this notice per our agreement dated

June 5, 2014

This notice enables us to verify with you that the description above represents your direction to *TimHaahs*, and enables us to properly identify the time spent on making changes in the project scope.

TimHaahs

Additional Service #1

Please notify us immediately if the above description does not conform to your understanding of the additional services requested for this project.

Project Manager: *Chris Gray*
Chris Gray, PE

Principal-in-Charge: *Todd J. Helmer*
Todd Helmer, PE

AUTHORIZATION

Trusting the above is satisfactory, please sign and return one copy as our authorization to proceed.

Project City of Binghamton Three Garage Restoration -- Binghamton, NY
Add Service No. 1
Signed _____
Print Name _____
Title _____
Date _____



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Request submitted by: Gary R. Holmes, P.E.
Title/Department: Engineering - Acting City Engineer
Contact Information: grholmes@cityofbinghamton.com

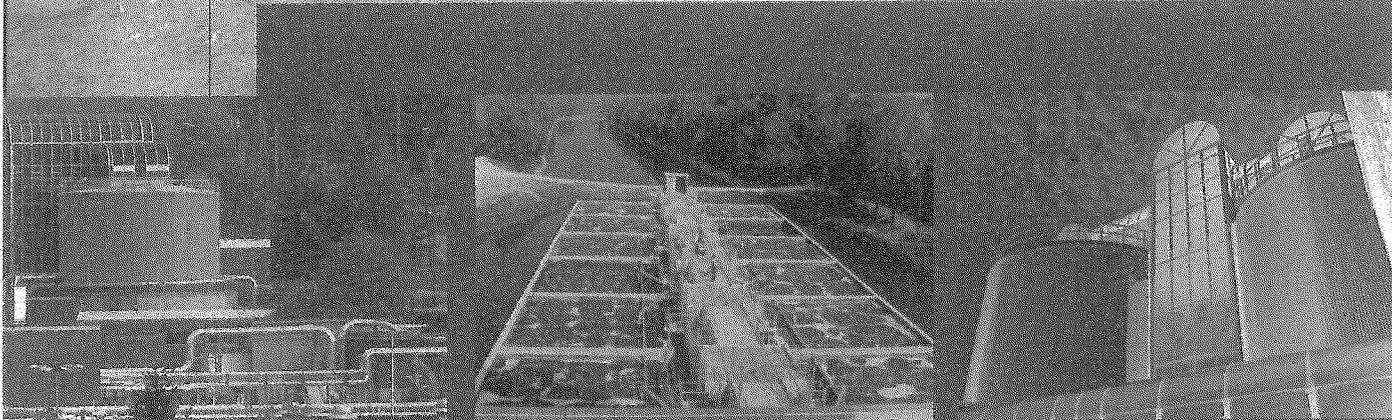
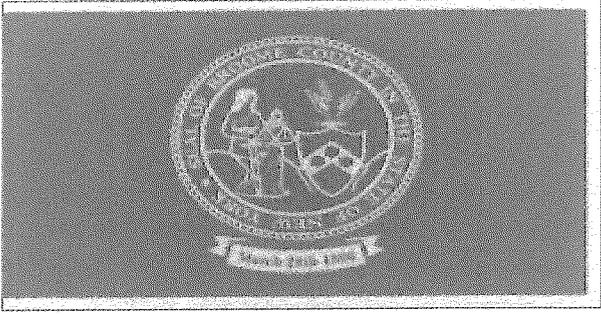
RL Information

Proposed Title: A Resolution Accepting the findings of a Due Diligence Assessment on Impacts and Implementation of a Project Labor Agreement (PLA) for the Restoration/Rehab of the BJCJSP Performed by Nautilus Consulting, LLC and to Authorizing the City to Negotiate PLA.
Suggested Content: Accepting the findings of a Due Diligence on Impacts and Implementation of a Project Labor Agreement (PLA) for the Restoration/Rehab of the BJCJSTP and authorizing the City to negotiate a PLA.

Additional Information

Does this RL concern grant funding? Yes No
If 'Yes', is the required RL Grant Worksheet attached? Yes No
Is additional information related to the RL attached? Yes No
Is RL related to previously adopted legislation? Yes No
If 'Yes', please provide Permanent Ordinance/Resolution/Local Law number(s): _____

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Mayor: [Signature]
Comptroller: [Signature]
Corporation Counsel: [Signature]
Finance Planning MPA PW/Parks Employees Rules/Special Studies



Restoration and Rehabilitation of the Binghamton-Johnson City Joint Sewage Treatment Plant

Due Diligence Assessment on Impacts and Implementation of a Project Labor Agreement for the Restoration and Rehabilitation of the Binghamton-Johnson City Joint Sewage Treatment Plant



September 21, 2015

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Attachment 1 - Broome County Comprehensive Plan

Attachment 2 - Labor and Wage Rate Analysis

I. The Project

The project that is under consideration for the use of a Project Labor Agreement (PLA) is the Restoration and Rehabilitation of the Binghamton - Johnson City Joint Sewage Treatment Plant (BJCJSTP) (the Plant). The BJCJSTP is a 35 million gallon per day (MGD) capacity wastewater treatment facility located in Broome County, NY. The Plant is jointly owned by the City of Binghamton and the Village of Johnson City and is managed by the Binghamton - Johnson City Joint Sewage Board (BJCJSB).

In May 2011, a 100 foot long section of one of the Plant's concrete walls failed spilling more than half a million gallons of sewage into the Susquehanna River. In September of 2011, significant flooding associated with Tropical Storm Lee inundated the BJCJSTP resulting in the damage of facilities throughout the plant. Portions of the plant that were severely damaged have not been placed back in service.

In addition to the immediate damage to the plant and impact to the environment, the damage that occurred has resulted in the ongoing inadequate treatment of the wastewater and a failure to comply with the State Pollution Discharge Elimination System (SPDES) Permit discharge limits. The City of Binghamton, the Village of Johnson City, and the BJCJSB have negotiated a Consent Order with the New York State Department of Environmental Conservation (NYSDEC) to develop and implement a plan to rehabilitate the plant and restore the wastewater treatment to required limits. The Consent Order requires the achievement of two (2) milestones. The first is the completion of construction by April 1, 2017 and the second is for the plant effluent to comply with the SPDES permit requirements no later than August 1, 2017.

The current plan is for the construction work to be performed under the contracts generally described as follows:

- Contract 1 - Compost Facility Demolition
- Contract 2 - Flood Damage Rehabilitation
- Contract 3 - BAF Facility Demolition
- Contract 4 - Motor Control Center Emergency Repair
- Contract 5 - STP Restoration and Rehabilitation
- Future Contracts - Disinfection, Solids Handling, and Outfall Upgrades

An additional contract(s) for a flood wall and flood protection are also a part of the overall program scope of work.

The Consent Order provides for a penalty of up to \$38,500 per day for the failure to achieve the milestone.

The work covered under contracts 1 through 4 is already underway. It is our understanding that it is not the intent to include these contracts under the PLA. Contracts for the flood wall and flood protection work are also not intended to be included under the PLA.

Contract 5 and the future contracts for disinfection, solids handling, and outfall upgrades represent the bulk of the work and are the subject of this analysis. Together these contracts have a combined construction budget of \$200 million. The best available information at this time is that the bids for Contract 5 will be received during the fall of this year with work to commence as soon as possible thereafter. We have assumed for the purposes of this analysis that PLA work will commence late in 2015 and will be completed 610 calendar days later with the achievement of the second project milestone on August 1, 2017. Work on the project will continue well past the August 1, 2017 milestone. The construction contracts in the program will be active through the end of 2018.

II. Purpose and Scope of this Report

Nautilus has been retained to prepare a due diligence analysis of the proposed project to determine if a PLA is beneficial to the project while meeting the criteria set forth under applicable New York State law and Executive Orders.

To demonstrate whether a typical PLA would be beneficial, the analysis needs to consider items such as potential labor cost savings due to the coordination of schedules and work rules among the various trades, the potential for savings in time and/or money through the use of Alternative Dispute Resolution (ADR) procedures to resolve any job site problems including jurisdictional disputes, to evaluate if the PLA will provide a framework for time and money savings as well as providing for the public good through ensuring labor harmony throughout the duration of the project, and to ascertain whether the PLA would provide access to a skilled labor force while ensuring opportunities for apprentices and for the development of the future labor force.

The scope includes the quantification of economic benefits to the project, the evaluation of the urgent need to complete the project and how a PLA might contribute to that goal, an investigation of non-quantifiable or indirect benefits, and an evaluation of the resulting bidding process to ensure that the bid process is fair, open, and competitive.

The analysis will address topics including available work force, worker efficiency, worker training, cost savings achievable under the PLA, schedule impact, safety, quality, and participation by MWBE firms

The report will provide a detailed review and analysis of the project and the conditions in the Broome County project area to determine if a PLA would be beneficial to the Project.

III. PLA History

Project Labor Agreements (PLA's) are project specific craft labor agreements that have been used for many years on both public and private projects of varying sizes. In New York, PLA's generally provide concessions from organized labor while adhering to the provisions of the New York State Labor Law to pay prevailing wages while maintaining a competitive bidding process open to both union and non-union contractors. PLA's are intended for use as a method to ensure the expeditious and cost effective accomplishment of large and/or complex projects which require the use of multiple trades and contractors.

The Supreme Court ruled in the 1993 Boston Harbor decision that PLA's were of value in serving the public interest and made their use by state, county, and municipal authorities possible. In 1997, then New York Governor George Pataki issued Executive Order No. 49 "Project Labor Agreements" allowing the use of PLA's. Their use was continued by subsequent Executive Orders under Governors Spitzer (No. 5 - 2007), Patterson (No. 9 - 2008), and Cuomo (No. 2 - 2011).

The New York State Legislature affirmed the guidelines provided in Pataki Executive Order No. 49 by enacting Section 222, Project Labor Agreements, of the New York Labor Law. The section provides that any state agency or department can require the use of a PLA if it is in the interest of the agency in obtaining the best work at the lowest price, in the prevention of fraud, favoritism or corruption, for the mitigation of the potential for delays, in obtaining cost savings, or to counter any history or potential for labor unrest.

Since their approval, PLA's have been used with success on numerous projects in New York. However, the use of a PLA is evaluated on a case by case basis. Each project must be analyzed to determine if the benefits and use of a PLA meet the guidelines established by the courts and executive orders.

IV. Local Labor Conditions

According to the Broome County Comprehensive Plan (the Plan) (available on the County website - See Attachment 1) the county had 200,600 residents as of 2010. The population is projected to decline approximately 0.4% by 2020. The workforce, which has already declined by 11,000 in the period from 1990 to 2011, will continue to decline as does the population but at a greater rate due to the impending retirement of older workers.

According to the Plan, the construction labor workforce in the Southern Tier region which includes Broome County is 9,540 or 3.6% of the total workforce. However, the projections for the required work force for the period from 2010 to 2020 are for an 8.1% increase yielding a net increase of 1,030 in the required construction labor force. This requirement is contrary to the overall declining work force. The Broome Tioga Workforce Investment Board acknowledges this by including Construction trades (Brick mason, carpenters, electricians, plumbers, pipefitters, construction workers, and sheet metal workers) in the list of demand occupations.

The declining population and work force have led to a situation where a great number of the Broome County work force come from other locales. Workers from locations including Syracuse, Albany-Schenectady-Troy, Rochester, Buffalo-Niagara Falls, Pennsylvania, and downstate areas including New York City, Northern New Jersey, and Long Island comprise 17.9% of the Broome County work force. In total over 21% of the Broome County work force travels greater than 50 miles from home to work in Broome County.

The recent economic turndown left most areas including Broome County with a sufficient supply of construction labor. However, the overall construction industry rate of employment and demand for labor has been increasing for the last several years and is likely to continue. Major projects in downstate areas with higher wages will need additional labor in the near future and will compete for the Broome County resources. These major projects include for example the new Tappan Zee Bridge, the rebuilding of LaGuardia Airport, numerous post Sandy storm repair and resiliency projects, plus a significant level of private construction particularly in high wage areas such as New York City. These lucrative projects seeking experienced workers will most likely impact the available labor force in Broome County.

The New York State Department of Labor has identified that there are available construction trade workers in Broome County. However, of the available workers, there is a very high percentage, exceeding 50% for some trades, where the available workers are identified as having zero to less than one year of experience. There is no

breakdown of the workers in the experience category of greater than one (1) year thus there is no data to specify how many of these available workers are actually fully trained and qualified journeymen.

The specific availability of labor to support the project is dependent on many outside factors beyond the scope of this report such as decisions to proceed or timing and schedules made on other projects by other owners. Thus any benefit of the PLA cannot be quantified with any reasonable degree of accuracy. However, it is reasonable to conclude that since the project will need a large well trained and experienced work force (approximately a 325 daily average with significantly higher peaks) that a PLA would provide a more immediate and efficient access to a pool of skilled journey level workers and apprentices. The PLA would allow a larger pool of available labor through the use of both union and non-union workers.

Note that a reduced or less competent work force could impact the timely completion of the work. This is discussed below in the section titled Schedule and Urgency.

V. Project Specific Labor Impacts

The Project work is under a Consent Decree requiring completion of the BAS reconstruction work by April 1, 2017 and compliance with the SPDES permit by August 1, 2017.

Sewage treatment plants are large infrastructure projects that require a skilled workforce to properly construct the facilities. Sewage treatment plants are required to be in continuous service for decades operating in all types of weather and under harsh conditions which include the presence of corrosive materials and potentially explosive gases. Proper construction to the highest quality is necessary to insure that these plants remain in service. Failures within these facilities, as is the current situation at BJCJSTP, can result in damage to the environment, regulatory violations with accompanying penalties, and potential conditions detrimental to the public good.

The construction budget for the work to be performed under the proposed PLA is \$200 million. Nautilus has determined that the direct labor costs excluding any overhead, profit, and field expenses is \$54,500,000 reflecting approximately 930,000 man-hours of work.

Our review of the project indicates that the necessary trades to accomplish the work generally include carpenters, drywall finishers, electricians, insulators, laborers, painters, pipefitters, plumbers, sheet metal workers, sprinkler fitters, iron workers, millwrights, roofers, lathers, masons, and operating engineers.

An inspection of the labor agreements for these trades indicates that the holidays and starting times are generally coordinated among the trades. Thus, a PLA would offer no significant cost advantage through the use of a single agreement standardizing work hours and holidays over the existing individual agreements.

Where a PLA could provide a cost savings beneficial to the project would be in wage rates. Often PLA agreements provide for a wage freeze for the duration of the project. Assuming that the PLA freezes wages and benefits at current levels, the PLA would provide a cost reduction of \$1,565,332 (See Attachment 2) resulting in a **\$1,900,000** reduction in bid prices when factoring in contractor OH&P.

Another potential source of cost savings beneficial to the project would be the increased use of apprentices. A difficulty in determining the benefits of the PLA is that a baseline apprenticeship participation must be determined assuming a PLA is not utilized. However, this is complicated by the fact that non-union contractors may not have formal apprenticeship programs whereas union contractors do have such

programs. A conservative approach to analyzing the potential cost savings is to assume that without a PLA, the union contractors would have utilized the maximum number of apprentices allowed under the current union agreements and then compare that scenario to likely apprentice utilization under a PLA. A PLA can include provisions for the use of a greater percentage of apprentices than there would be in a non-PLA project. Assuming that the PLA results in apprentices performing an additional 5% of the total project man-hours, Nautilus calculates a reduction in the bid prices of **\$1,125,000** including all normal contractor mark-ups.

The efficiency of a well-trained labor force working in harmony without outside distractions also represents a savings to the project. Because of the complexity and demands of working on an active sewage treatment plant, we have estimated a 5% productivity gain when compared to a non-PLA project with the potential of mixed union and non-union workers without the benefits of a prior agreement. Knowing the status of the work force in advance will likely result in a reduction in the bid prices in the amount of **\$960,000**. The apprentice hours are not included in the calculated gain for improved efficiency.

VI. Other Economic Labor Benefits

The use of a PLA can ensure project savings and flexibility through the use of alternative dispute resolution (ADR) procedures in response to job site problems and jurisdictional disputes. The number of variables in calculating this benefit to the project are so numerous that any calculation is suspect at best and thus this benefit is un-quantifiable. This and other indirect benefits are discussed and summarized elsewhere in this report.

A potentially quantifiable cost reduction benefit under a PLA is for the Contractor(s) to group together the Workmen's Compensation insurance for all participating contractors and subcontractors with a resulting lower composite rate. If this can be implemented the BJCJSB might benefit from the contractor's reduction in rate which can translate into lower contractor bid prices.

Calculating the savings using a conservative 10% reduction in the workmen's compensation anticipated actual premiums results in approximately a **\$370,000** cost savings to the project in the form of lower bid prices. Greater rate reductions, which are possible, would result in additional savings.

VII. Schedule and Urgency

One of the most important aspects that will define the success of this project is the need to complete the project on time. Completing a project on time generally is an important indicator of meeting the overall budget. However, in the case of the BJCJSTP the timely completion of the work takes on a greater urgency.

The Plant is currently not meeting its SPDES discharge permit limits. The long term damage to the local environment is beyond the scope of this report. However, it is obvious that delays to the work will be detrimental to the residents of Broome County as well as the residents of all areas that may be impacted by the higher than allowable discharges of the plant.

While the environmental impacts themselves may not be quantifiable, the penalties associated with failing to complete the work and meet the SPDES permit requirements are an identified cost of up to \$38,500 per day for each day beyond the required milestone dates that the work is not completed or the permit requirements are not met.

Any rehabilitation work on an operating sewage treatment plant is a complex endeavor requiring great coordination of work activities. An impact to any part of the work likely cascades through the project resulting in delays to the overall completion. Many of the potential delays are beyond the control of the project team while others are related to the design of the work. However, the actual performance of the work is not only one of the most significant potential schedule impacts, it is also one that can be mitigated by the use of a PLA. A PLA will eliminate the potential for strikes, lockouts and labor unrest. Harmony in the labor force results in greater productivity and decreased lost time providing the best opportunity to achieve the project milestone dates. Additionally, if necessary the local labor unions working under the terms of the PLA can be invaluable in assisting the contractors in finding qualified labor from other locals outside the immediate area.

A PLA will also allow for the use of single prime contracts in lieu of the multiple prime contracts typical under the Wicks law. A single prime general contractor will be able to better, and in a timely manner, coordinate all the trades reducing or eliminating potential costly delays to this project which is of particular importance because of the consent order penalties.

Nautilus has calculated an available overall project performance period of 610 calendar days to achieve both milestones. This is a very aggressive schedule and will require an average daily labor force of 325 workers with peak days likely to be significantly higher. With the complexity of the work, the size of the labor force, and

the need for coordination and cooperation among the various trades and contractors, a labor related delay whether due to productivity, coordination, or some work stoppage or slowdown could easily extend the construction period by at least 5%. A 5% increase translates into a one month (31 day) delay which would result in penalties of \$1,193,500.

Thus a PLA provides a minimum schedule related cost benefit of **\$1,193,500**.

VIII. Bidding and Competition

If the contracting community perceives a project to be union, many if not all of the non-union contractors will most likely refrain from bidding. Similarly, if a project is perceived as non-union, union contractors may refrain from bidding. Either perception acts to lower the pool of bidders.

For this reason, a PLA which clearly provides that the project is open to union and non-union contractors without concerns of labor unrest will likely increase the number of bidders. Increased competition will generally result in lower bid prices to the owner. Similarly, prime contractors will have a larger pool of potential subcontractors and thus more competitive subcontract bids which contribute to the overall savings to the project.

This same open climate will encourage the participation of both union and non-union vendors, fabricators, and suppliers which again contributes to the overall savings to the project.

In the case of most public works entities like the BJCJSB, the public bid solicitation process already has goals for MWBE participation and procedures for the prevention of fraud, favoritism, and corruption. The terms of a PLA can reinforce these goals and safeguards and even provide for increased MWBE participation. Increased participation at the prime, subcontractor, or vendor/supplier/fabricator level either union, non-union, or MWBE in the bidding process not only yields transparency and reduces the winning bid prices but through the greater number of participants reduces the likelihood of fraud, favoritism, and corruption resulting in a process that is fair, open, and competitive.

The advantages of increased competition resulting from the PLA are obvious but not readily quantifiable and thus no specific value has been assigned in this report.

IX. Training and Participation

A long term benefit to the community by the use of a PLA will be to not only resolve a major infrastructure issue but also to provide the groundwork for the future workforce in the region. The restoration and rehabilitation of the BJCJSTP is a major undertaking requiring in excess of 930,000 man-hours of labor. This large volume of work can serve as a training ground for new workers and as an opportunity for minorities and women to join the work force.

The provisions of a PLA will bring the apprenticeship programs of all the trades to the project allowing this public project to serve as a training ground for the workforce of the future. The provisions of the unions as well as provisions that can be incorporated into the conditions of the PLA can ensure nondiscriminatory hiring and the opportunity for all including minorities and women to become apprentices and be a part of the future workforce of Broome County.

Provisions of the PLA can provide for apprenticeships beyond the typical levels provided by the local unions and help to create a climate where all labor hiring practices are non-discriminatory. However, the development of the future workforce, both union and non-union, is not a quantifiable cost benefit to this project but is obviously of incalculable value to the public.

The cost savings of additional apprentices are addressed elsewhere in this report.

X. Safety

Safety on the jobsite is of paramount importance. Work in an operating sewage treatment plant is a difficult task requiring a highly skilled and highly trained work force. In addition to the normal difficulties in performing work in an operating plant, the schedule demands of this project require large numbers of workers (average daily crew size of approximately 325 workers) who by their very number and the need to accomplish numerous tasks concurrently will be working in close proximity to each other. Large crews in close proximity with difficult and complex work create an environment for potential accidents resulting in injuries or death to workforce. Safety training will be critical to mitigate the risks of the work environment. A PLA will provide that the workers have been trained through the various organized labor training programs, will have access to receive training, or through the apprenticeship programs will be trained from the start in proper and safe work techniques and methodologies. The enhanced training and skill level of the workforce will translate to safer working conditions.

The safety and well-being of each worker has no quantifiable cost benefit but is obviously of incalculable value.

XI. PLA - Implementation and Likely Provisions

A PLA must be in place and provided to all perspective bidders as a part of the bid package. The urgency of the work to rehabilitate and restore the BJCJSTP requires that the bid process proceed in the very near future. Thus, if a PLA is to be implemented it must be done so as soon as possible. Because of the urgency of this project, any project delays due to the development and implementation of the PLA would offset a number of the benefits potentially provided through the PLA of which the most notable would be the failure to achieve the Consent Order milestones resulting in additional costs, penalties, and further environmental damage.

For purposes of this analysis we have assumed that the PLA will include but not be limited to the following general provisions:

1. Both union and non-union contractors will have equal opportunity to participate in the project.
2. Both union and non-union subcontractors, suppliers, vendors, and fabricators will have equal opportunity to participate in the project.
3. Include provisions allowing non-union contractors to utilize their own regular work force for all or at least a fixed percentage of their work.
4. MWBE firms will be encouraged and have equal opportunity to participate. Goals for MWBE firms will at least meet and preferably exceed the minimum requirements established by the New York State Environmental Facilities Corporation.
5. Include favorable provisions for MWBE contractors to utilize their own work force for all or at least a fixed percentage of their work.
6. Increased apprenticeship training and participation.
7. Incorporation of safety training and safe work practices for all workers.
8. Agreement to resolve jobsite problems and jurisdictional disputes through Alternate Dispute Resolution proceedings.
9. Agreement prohibiting strikes, lockouts, or any labor unrest with a commitment to work diligently toward the timely completion of the work.
10. Wages and benefits will be frozen at current rates for the duration of the project.
11. Establishment of an insurance program providing at least a project specific workmen's compensation insurance policy at reduced rates and other insurance program savings as may be identified.

The actual PLA will be a more detailed document with more provisions than listed above. The provisions listed here are general and meant to convey the major concept and principles that will influence the project.

XII. Findings and Conclusions

The analysis detailed above yields results that can be categorized as quantifiable benefits and non-quantifiable/indirect benefits. These can be summarized as follows:

Summary of Quantifiable Benefits

Maintain wages and benefits at current rates	\$1,900,000
Increased use of Apprentices	\$1,125,000
Efficiency of Labor	\$ 960,000
Workmen's compensation insurance program	\$ 370,000
<u>Reduced liability for Penalties</u>	<u>\$1,193,500</u>
Total	\$5,548,500

Summary of Non-Quantifiable/Indirect Benefits

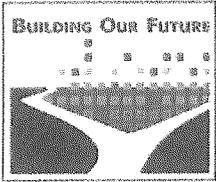
- Greater availability and access to skilled labor.
- Increased bid competition.
- Increased subcontractor/vendor/supplier/fabricator competition.
- ADR to resolve disputes and avoid delays.
- Delay avoidance through agreements for no strikes, lockouts, or labor unrest.
- Site and worker safety
- Long term benefits of training provided to the future workforce of the County
- Avoidance of favoritism, fraud, and corruption through open non-discriminatory bidding and hiring practices.
- Assistance from local labor unions in finding qualified labor (if necessary) from locals outside the immediate area.
- Single prime general contractor coordinating the work of all trades

The schedule, timely performance, and completion of the work is of greater than normal importance for this project because of the Consent Decree penalties and the ongoing impacts to the environment. We have chosen to include in the quantifiable impacts the benefit of reduced costs through the avoidance of only one (1) month penalties. However, there is a significant risk of much greater penalties if anyone of a number of situations occur. First, the available time to complete the work within the allowed period results in the need for a significant sized workforce that we have calculated at a daily average of 325 workers. Actual peak days will be much greater. The size of the workforce combined with the relatively short duration of the work and the complexity of a wastewater treatment plant make the issues of labor availability and productivity crucial to the success of the project.

There are too numerous combinations of events that could affect labor availability and productivity to make any calculated number representative of a real savings. However, it can be stated that a PLA would mitigate many of these potential impacts resulting in a great, if not defined, savings to the project in both time and money.

The analysis indicates that a PLA would provide significant benefits in time, cost savings, and mitigation of risks while fostering greater participation of and competition among union, non-union, and MWBE firms. As detailed above, Nautilus has calculated a minimum cost savings to the project of **\$5,548,500**. The timely completion will also mitigate the ongoing impacts to the environment. The PLA would also provide for enhanced worker safety and efficiency through formalized safety and apprenticeship programs. Long term beyond the present, the project with the PLA would contribute to the training of the future workforce of Broome County.

Attachment 1

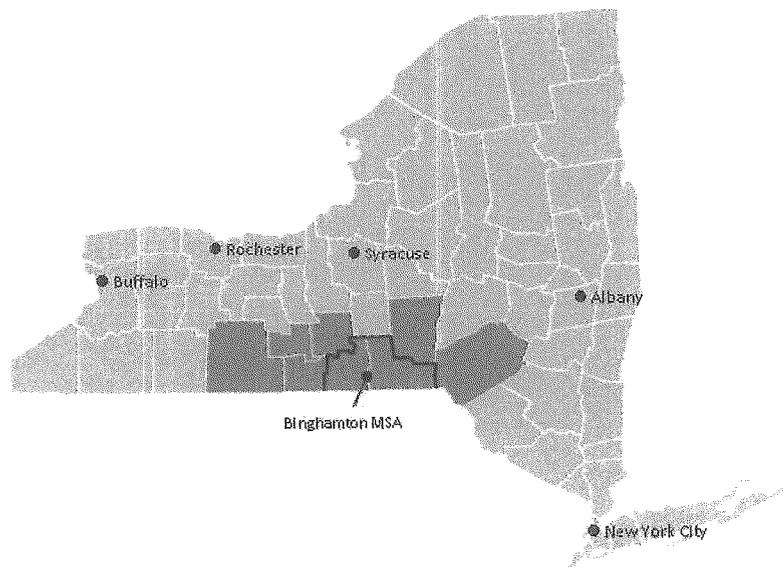


Introduction

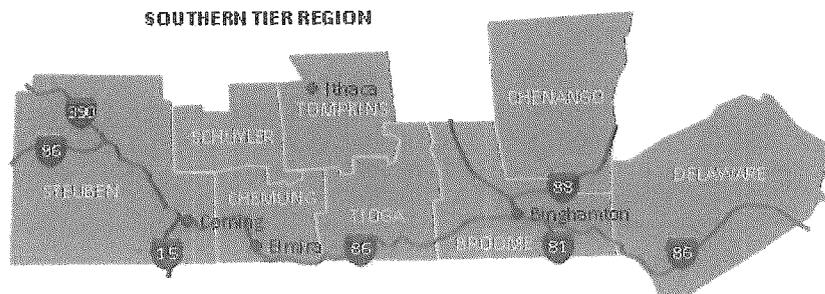
Broome County contracted with E.M. Pemrick and Company to prepare the Economic Analysis Component of the County's Comprehensive Plan. The analysis is intended to update portions of a countywide economic development strategy, adopted in 2002, known as the BCPlan. Elements of the scope of work for the Economic Analysis include an economic profile of Broome County, a shovel-ready sites assessment, a profile of the local workforce, a target industry analysis, and an incentive evaluation. This document is the second of five deliverables.

This chapter refers to a number of different geographies for analysis, depending on the availability of data. They are described below:

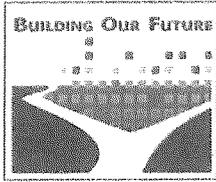
- **Broome County** – With 200,600 residents in 2010, Broome County is the most populous county in New York's Southern Tier region. It is bordered by Tioga County to the west, Delaware County to the east, and Cortland and Chenango Counties to the north; the Northern Tier of Pennsylvania adjoins Broome County to the south.



- **Southern Tier Region** – With a 2010 population of 657,909, the Southern Tier region as defined by Empire State Development encompasses the counties of Broome, Chemung, Chenango, Delaware, Schuyler, Steuben, Tioga and Tompkins. Major cities in the region, in addition to Binghamton, include Elmira, Corning, and Ithaca.



Unless otherwise noted, the analysis draws upon quantitative data from the U.S. Bureau of Labor Statistics, the U.S. Census Bureau, and the NYS Department of Labor, including Occupational Employment Statistics and Local Employment Dynamics.



Population Change

Data from the U.S. Census Bureau indicate that the Broome County population grew relatively slowly during the last half of the twentieth century. Between 1950 and 2000, the County added approximately 16,000 residents, an increase of 8.6%. This was less than half the rate of population growth in the Southern Tier region (19.5%) and considerably less than the statewide growth rate (28.0%).

The decennial census shows that Broome County had 200,600 residents in 2010, with little change from 2000. The Southern Tier experienced stagnant or declining population levels, while the number of people in New York State overall increased by 2.1%.

Table 1: Population Change

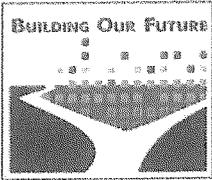
	2000	2010	% Change, 2000-2010	2020 (projected)	% Change, 2010-2020 (projected)
Broome County	200,536	200,600	0.03%	199,743	-0.4%
Chenango County	51,401	50,477	-1.8%	48,154	-4.6%
Cortland County	48,599	49,336	1.5%	49,008	-0.6%
Delaware County	48,055	47,980	-0.2%	46,717	-2.6%
Tioga County	51,784	51,125	-1.3%	48,337	-5.5%
Susquehanna County (PA)	42,238	43,356	2.6%	61,630	42.1%
Southern Tier Region	657,297	657,909	0.1%	643,719	-2.2%
New York State	18,976,457	19,378,102	2.1%	19,697,021	1.6%
United States	281,421,906	308,745,538	6.2%	333,896,000	8.1%

Sources: 2000 and 2010 data from U.S. Census Bureau, Decennial Census, Summary File 2. Population projections for the U.S. from the U.S. Census Bureau, 2012 National Projections; for New York counties from Cornell University's Program on Applied Demographics; and for Susquehanna County, PA from the Pennsylvania State Data Center.

Between 2010 and 2020, Broome County is projected to decline by approximately 850 residents, or -0.4%. Most surrounding counties are also expected to decrease in population. The sole exception appears to be Susquehanna County in Pennsylvania, which is projected to have a dramatic increase. The Pennsylvania State Data Center formulated its projections in 2008, however, and County planners do not believe that this unusually high rate of growth will hold up.¹

Individuals born outside the United States comprise less than 6% of the Broome County population overall, but they represent approximately 15% of the student enrollment at Binghamton University, one of the top U.S. universities for international students. Between 2000 and 2010, the number of foreign-born residents in the county increased by 7.8%, to 11,361. Of these, 45.8% were born in Asia, 31.9% in Europe, and 15.4% in Latin America. More than 60% are naturalized U.S. citizens.

¹ "Census reveals ups, downs and questions," *Susquehanna Independent Weekender*, March 30, 2011.



Age/Age Cohorts

The generational mix in Broome County and the Southern Tier region is consistent with state and national trends and reflects an aging population. In 2010, Broome County had a median age of 40.2. In neighboring counties, the median age ranged from 35.8 in Cortland County to 45.4 in Delaware County, compared to 38.0 for New York State.

Table 2: Median Age and Age Cohorts

	Median Age	Under Age 20	20-24	25-54	55-64	Age 65 and Over
Broome County	40.2	24.3%	8.9%	37.9%	12.6%	16.3%
Chenango County	42.9	25.2%	5.0%	39.1%	14.0%	16.6%
Cortland County	35.8	26.8%	11.7%	36.3%	12.1%	13.1%
Delaware County	45.4	23.6%	5.9%	35.6%	15.4%	19.4%
Tioga County	42.5	25.8%	4.9%	40.4%	13.2%	15.7%
Susquehanna County (PA)	45.1	23.6%	4.7%	38.7%	14.9%	18.1%
New York State	38.0	25.3%	7.3%	42.0%	11.9%	13.5%
United States average	37.2	27.0%	7.0%	41.2%	11.8%	13.0%

Source: U.S. Census Bureau, 2010 Census, Summary File 2.

Although employed individuals age 16 years and over are counted as part of the labor force, the prime working age population is considered to be the 25-54 age cohort. This is when the likelihood of labor force participation is highest.

As shown in **Table 2**, of the 200,600 people living in Broome County, 75,931 (37.9%) were between the ages of 25 and 54 in 2010, while 25,201 (12.6%) were ages 55 to 64. Compared to the state, Broome County has a higher proportion of residents age 65 and over. Generally speaking, these individuals are more likely to be retired and not available to participate in the labor force.

Over the next ten years, the aging of the population will continue to have a dramatic impact on the size and composition of the workforce. With limited growth expected in Broome County, the working-age population will begin to comprise a smaller share of the population, as people now in the 55-64 age cohort start to retire.

Educational Attainment

As shown in **Table 3**, educational attainment levels in Broome County are somewhat typical of upstate New York, showing a higher rate of high school completion than state and national averages. According to the Census Bureau, an estimated 119,000 Broome County residents age 25 and older (or 89%) had at least a high school diploma or its equivalent compared with 84.8% in New York State, while 34,000 (25.5%) had a bachelor's degree or higher. Compared to its neighbors, Broome County had a larger percentage of adults with a graduate or professional degree (11.6%).

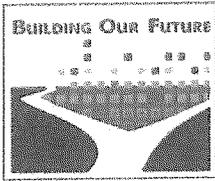


Table 3: Educational Attainment, Adults Age 25 and Older

Adults Age 25 and Older	% with High School Diploma or Higher	% Bachelor's Degree or Higher	% Graduate or Professional Degree
Broome County	89.0	25.5	11.6
Chenango County	87.0	17.7	7.5
Cortland County	89.8	23.4	9.9
Delaware County	86.3	19.5	8.2
Tioga County	91.0	22.2	9.5
Susquehanna County (PA)	89.0	17.4	6.3
New York State	84.8	32.6	14.0
United States average	85.6	28.2	10.5

Source: U.S. Census Bureau, 2009-2011 American Community Survey 3-Year Estimates.

In terms of educational attainment by age (Table 4), the proportion of the population with a four-year, graduate, or professional degree is more than 30% among Broome County residents between the ages of 25 and 34, and 27.9% among those ages 35 to 44. This is higher than among the same age cohorts in neighboring counties.

Table 4: Educational Attainment by Age Group, Adults Age 25 and Older

	Broome County	Chenango County	Cortland County	Delaware County	Tioga County	Susquehanna County (PA)
Ages 25 to 34						
% Bachelor's Degree or Higher	30.1	17.6	26.4	18.0	26.7	21.5
% Graduate or Professional Degree	13.2	7.4	7.1	4.1	11.0	4.5
Ages 35 to 44						
% Bachelor's Degree or Higher	27.9	21.1	25.9	20.1	24.6	18.7
% Graduate or Professional Degree	12.8	9.9	12.4	7.7	11.5	5.8
Ages 45 to 64						
% Bachelor's Degree or Higher	27.1	19.4	23.9	20.3	23.6	18.1
% Graduate or Professional Degree	12.3	8.0	9.7	8.7	10.5	7.3
Age 65 and over						
% Bachelor's Degree or Higher	18.0	12.0	17.8	18.6	14.8	13.1
% Graduate or Professional Degree	8.4	4.9	10.1	9.4	5.2	6.0

Source: U.S. Census Bureau, 2009-2011 American Community Survey 3-Year Estimates.

Labor Force

The labor force includes people who are currently employed and those who are unemployed and seeking jobs. In contrast to employment by industry data, the estimates in the table below are by place of residence, rather than place of work.

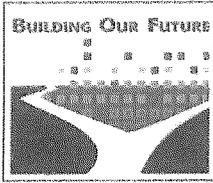


Table 5: Resident Labor Force

	1990	2000	2011	% Change, 1990-2000	% Change, 2000-2011
Broome County	105,000	98,300	93,400	-6.4%	-5.0%
Chenango County	25,200	24,500	24,600	-2.8%	0.4%
Cortland County	24,600	24,200	24,200	-1.6%	0.0%
Delaware County	21,700	22,200	21,600	2.3%	-2.7%
Tioga County	26,300	26,600	25,000	1.1%	-6.0%
Susquehanna County (PA)	18,300	20,400	23,100	11.5%	13.2%
Southern Tier Region	326,700	322,800	316,300	-1.2%	-2.0%
New York State	8,808,900	9,167,000	9,504,200	4.1%	3.7%

Source: NYS Department of Labor and PA Department of Labor and Industry, Local Area Unemployment Statistics, and E.M. Pemrick and Company.

On average, there were 93,400 residents in the labor force in Broome County in 2011, with 8,000 seeking jobs, resulting in an unemployment rate of 8.5%. As of February 2013, there were 8,800 people in Broome County actively looking for work, with an unemployment rate of 9.5%.

The labor force participation rate is the labor force (employed and unemployed) divided by the population age 16 and over. It is one indication of whether more people might be drawn into the labor force if suitable jobs were available or wages were higher. According to the U.S. Census Bureau, Broome County has a labor force participation rate of 59.6%. The rate for New York State is 63.6%.

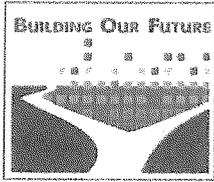
Table 6: Labor Force Participation Rates

Broome County	59.6%
Chenango County	60.3%
Cortland County	60.1%
Delaware County	58.9%
Tioga County	66.6%
Susquehanna County (PA)	60.9%
New York State	63.6%

Source: U.S. Census Bureau, 2009-2011 American Community Survey 3-Year Estimates.

The labor force participation rate can be influenced by the number of residents, particularly those between the ages of 16 and 24, who are still attending school. Tompkins County, which also has a sizable college student population, has a labor force participation rate of 60.4%.

Consistent with local population trends, the size of the labor force in Broome County is declining. Between 1990 and 2011, the resident labor force declined by more than 11,000. Of the surrounding counties, only Susquehanna County had a net increase in its labor force.



Employment by Occupation

Table 7 below presents employment in the Southern Tier region by occupational category.² While information on industry relates to the type of business conducted by a person’s employer, occupation describes the kinds of work a person performs on the job.

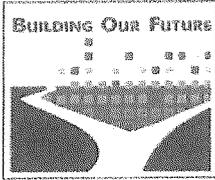
Occupational Group	Employment		Median Annual Wages
	Number	Percent	
Office and Administrative Support	44,340	16.7%	\$29,220
Education, Training, and Library	28,010	10.6%	\$46,950
Sales Related	24,490	9.2%	\$22,370
Food Preparation and Serving Related	21,990	8.3%	\$18,960
Production Related	20,900	7.9%	\$32,240
Health Care Practitioners and Technicians	18,850	7.1%	\$58,370
Transportation and Material Moving	13,100	4.9%	\$27,560
Health Care Support	10,530	4.0%	\$27,460
Management	10,370	3.9%	\$85,380
Installation, Maintenance, and Repair	9,700	3.7%	\$37,560
Construction and Extraction	9,540	3.6%	\$40,050
Building and Grounds Cleaning and Maintenance	9,210	3.5%	\$22,500
Business and Financial	8,390	3.2%	\$56,410
Architecture and Engineering	7,480	2.8%	\$69,210
Personal Care and Service	6,940	2.6%	\$20,750
Community and Social Services	5,600	2.1%	\$39,940
Protective Service	5,130	1.9%	\$49,210
Computer and Mathematical	4,060	1.5%	\$59,900
Arts, Design, Entertainment, Sports, and Media	2,820	1.1%	\$37,160
Life, Physical, and Social Science	2,110	0.8%	\$55,670
Legal	1,060	0.4%	\$85,950
Farming, Fishing, and Forestry	430	0.2%	\$29,260
Total, All Occupations	265,070	100.0%	\$33,920

Source: New York State Department of Labor, Occupational Employment Statistics Survey, and E.M. Pemrick and Company.

Six major occupational groups account for 60% of the total employment in the Southern Tier region: office and administrative support, education and training, sales related, food preparation, production related, and health care practitioners and technicians.

Generally speaking, about 63% of the workforce in the region is in traditionally “white-collar” occupations and 20% is in traditionally “blue-collar” occupations; the remaining 16% are employed in

² Based on the Standard Occupational Classification (SOC) system, which organizes the occupations held by workers into 22 major occupational categories. Data are provided for the Southern Tier region rather than the Binghamton MSA to facilitate comparison with the long-term projections (which are only available by region) in the next section.



service occupations. Compared to the U.S. as a whole, the Southern Tier has a higher concentration of its workforce (as indicated by location quotients exceeding 1.20) in education, training, and library occupations (1.61), architecture and engineering (1.57), community and social services (1.41), and health care practitioners and technicians (1.28). Many of these occupations are associated with key sectors of the economy, such as education and health care, although engineers are employed by a broad spectrum of industries.

A recent report from the NYS Department of Labor examines science and engineering (S&E) jobs in the state based on National Science Foundation definitions. In 2010, there were 312,660 S&E jobs in New York State, accounting for 3.7% of all statewide employment. *Within* the state, the share of the workforce engaged in S&E occupations was highest in the Southern Tier region, at 5.2%. The Southern Tier workforce also had the highest proportion of engineers, physical scientists, and mathematical scientists than any other region. The article concludes: “While most S&E jobs require more years of college, the stronger employment outlook and higher wages they offer often seem worth the investment.” Workers with skills in science and engineering are expected to be in great demand as the economy becomes more knowledge-intensive.³

Occupations in Demand

Workforce projections developed by the NYS Department of Labor indicate that the *fastest growing* occupational categories in the Southern Tier over the ten-year period from 2010 to 2020 will be personal care and service occupations, health care support occupations, health care practitioners and technical occupations, and computer and mathematical occupations (**Table 8**). However, the top occupational categories will have the largest number of openings, mostly to replace existing workers who change jobs or retire.

³ “Down to a Science: Science and Engineering Jobs in NYS,” *Employment in New York State*, July 2011. Accessed at <http://www.labor.ny.gov/stats/pdfs/enys0711.pdf>.

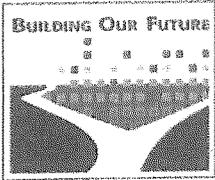


Table 8: Long-Term Workforce Projections by Occupational Categories, Southern Tier

Description	Projected Change, 2010-20		Annual Average Openings	
	Percent	Net	Replacement*	Total**
Personal Care and Service	18.1%	2,070	270	480
Health Care Support	12.9%	1,540	170	320
Health Care Practitioners and Technicians	12.2%	2,660	440	710
Computer and Mathematical	10.7%	510	100	150
Transportation and Material Moving	9.6%	1,480	370	520
Community and Social Services	9.6%	640	150	210
Food Preparation and Serving Related	8.1%	1,880	860	1,050
Construction and Extraction Occupations	8.1%	1,030	270	380
Business and Financial	7.6%	780	210	290
Legal	7.1%	130	30	40
Arts, Design, Entertainment, Sports, and Media	7.0%	430	160	210
Installation, Maintenance, and Repair	6.8%	740	240	320
Building/Grounds Cleaning and Maintenance	5.6%	700	220	290
Education, Training, and Library	5.6%	1,860	680	870
Sales Related	5.5%	1,500	870	1,030
Life, Physical, and Social Science	3.9%	100	80	100
Protective Service	2.0%	110	140	160
Office and Administrative Support	1.8%	890	1,030	1,230
Production Related	0.4%	90	440	530
Management	0.3%	40	280	310
Architecture and Engineering	-0.4%	-30	180	200
Total, All Occupations	6.2%	19,140	7,210	9,410

Source: New York State Department of Labor, Occupational Employment Statistics Survey, and E.M. Pemrick and Company.

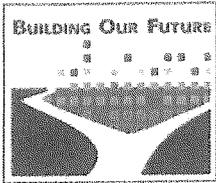
* - Net replacement openings is an estimate of the need for new work force entrants to replace workers who leave an occupation and start working in another occupation, stop working altogether (i.e., retire) or leave the geographic area.

** - Total job openings represent the sum of employment increases and net replacements. If employment change is negative, job openings due to growth are zero and total job openings equals net replacements.

Other categories projected to grow at above-average rates in the eight-county region include transportation and material moving occupations, community and social services occupations, food preparation and serving related occupations, and construction occupations.

Workforce Commutation Patterns

Produced by the U.S. Census Bureau in conjunction with the Local Employment Dynamics program, OnTheMap is an online application that provides information on where workers are employed and where they live with companion reports on age, earnings, industry distribution, and other local workforce indicators. It can be used to determine where workers who are employed in a specific geographic location live, how many jobs are located within a certain distance of an educational



facility, or what the workplace destinations are for residents living in a particular neighborhood. The data provide planners, economic development specialists, job seekers, employers, and other users with information needed to understand workforce commutation patterns.

The figures below indicate where individuals *employed* in Broome County live. The analysis is restricted to those working in primary jobs as of 2010, the most recent year for which data are available.⁴ (Primary jobs include both public- and private-sector jobs covered under the state unemployment insurance system. A *primary* job is the highest paying job for an individual worker for the year.)

In the map below, employment locations in the County are represented by the blue thermal density overlay showing jobs per square mile. Work locations are also aggregated into census blocks in the Points Overlay – each block represented by one blue dot. The map reflects the fact that employment is concentrated in the City of Binghamton and stretches west into Johnson City, Endicott, and eventually Owego (Tioga County) along Route 17. There are also clusters of employment at industrial parks in Conklin and Kirkwood.

Overall, 68.1% of those employed in Broome County reside within the Binghamton MSA; this includes approximately 51,393 Broome County residents and 5,855 commuting from neighboring Tioga County. Many workers travel from other metro areas in upstate New York, including Syracuse (3.3%), Albany-Schenectady-Troy (2.4%), Rochester (2.1%), and Buffalo-Niagara Falls (1.2%). Broome County also attracts in-commuters from as far away as the New York-Northern New Jersey-Long Island metropolitan area. The proportion of workers from “downstate” is surprisingly high – 3.9% - but these employees do not appear to be concentrated at any one location.⁵

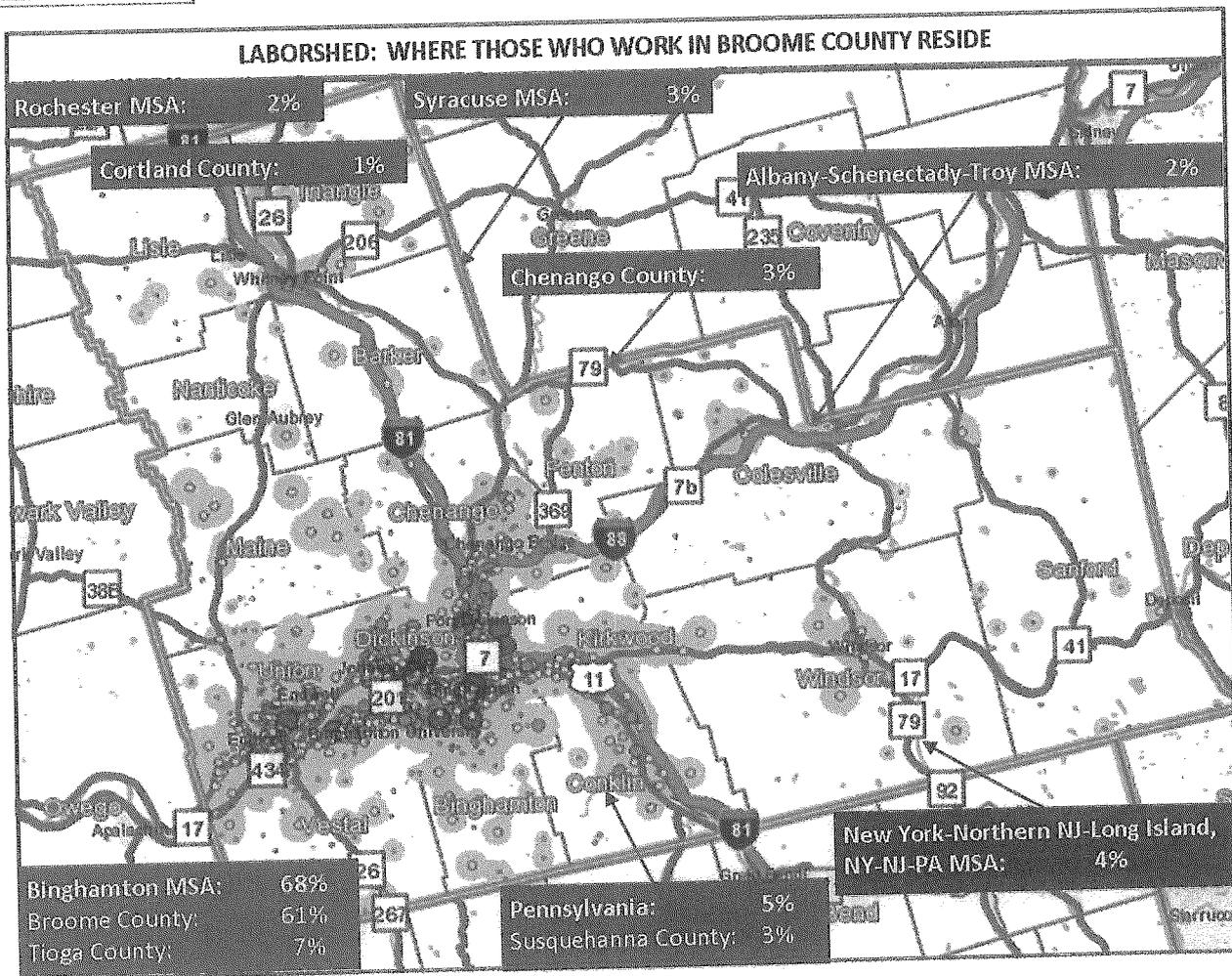
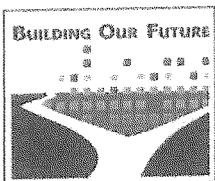
	Count	Share
Less than 10 miles	46,996	55.9%
10 to 24 miles	13,829	16.5%
25 to 50 miles	5,269	6.3%
Greater than 50 miles	17,929	21.3%

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics. Note: Due to differences in methodology, the job counts shown are not comparable to those from other sources.

Broome County draws a sizable part of its workforce, about 5%, from over the border in Pennsylvania. The majority (2,726) commute from adjacent Susquehanna County, with several hundred coming from Bradford County.

⁴ Data used to develop the Laborshed and Commutershed profiles was extracted from the U.S. Census Bureau, Local Employment Dynamics (LED) Origin-Destination Database which is utilized in LED's OnTheMap application.

⁵ Initially, it was speculated that the 3,298 workers from the NYC metro area might be employees of BAE and IBM, both of which have facilities downstate. It turns out, however, that these workers from downstate are employed in multiple communities, including the City of Binghamton (1,039) and the Towns of Union (846), Vestal (606), and Dickinson (503). The majority are employed in the service sector: e.g., education, health care, or professional services.

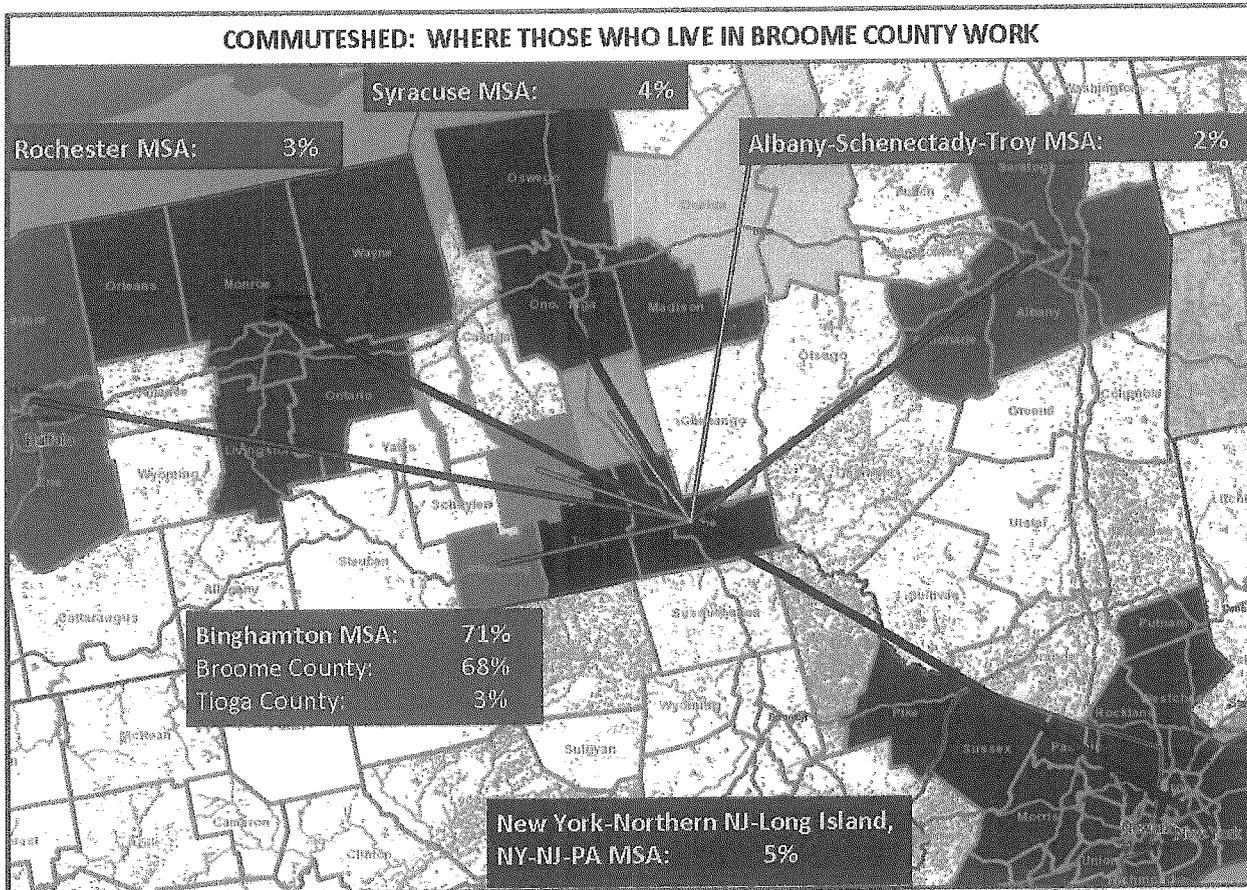
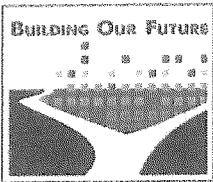


The commuted area, the area in which Broome County residents are employed, is slightly more compact than the labor shed (because the County is a net importer of labor). Approximately 72% of County residents work in the Binghamton MSA, most in Broome County itself. Nearly 3,000 residents (3.9%) commute to work in the Syracuse metro area and 1,944 (2.6%) to the Rochester metro area. Relatively few Broome County residents are employed in Pennsylvania. However, more than 5% of those who reside locally apparently commute to jobs (mostly in the service sector) based in the New York City metropolitan area.

Table 10: Job Counts by Distance Traveled from Home, Broome County Commuted

	Count	Share
Less than 10 miles	46,127	61.1%
10 to 24 miles	9,221	12.2%
25 to 50 miles	3,603	4.8%
Greater than 50 miles	16,605	22.0%

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics. Note: Due to differences in methodology, the job counts shown are not comparable to those from other sources.

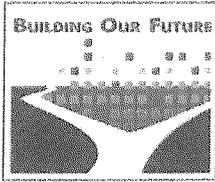


Of the more than 30,000 people leaving the Binghamton metro area to work each day, 8,589 (28%) are young people age 29 and under. These young adults are more likely than workers of other ages to travel more than 50 miles for employment.

The data from OnTheMap clearly show that Broome County has a relatively large laborshed, drawing workers from other parts of upstate New York as well as Pennsylvania and the New York City metropolitan area. On the other hand, the majority of employed residents living in Broome County work in the Binghamton MSA. Broome County's geographic location and interstate access facilitate travel to and from other regions of the state. This is an asset not only for the local workforce, but also for the companies that locate in Broome County.

Employment Dynamics

This section assesses various employment dynamics in Broome County based on data from the U.S. Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) program. The LEHD program provides Quarterly Workforce Indicators (QWIs) including employment, new hiring activity,



turnover rates, and earnings that can be analyzed by geography, age, gender, and educational attainment.⁶

Employment by Age

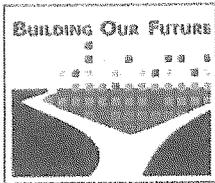
The majority of those employed by the private sector in Broome County are between the ages of 25 and 54 – prime working-age – with the largest share (24.8%) comprised of individuals ages 45 to 54.

The aging of the Baby Boom generation has led to an increase in the proportion of workers age 55 years and older, however. In 2000, 12.3% of workers in private industry in Broome County were age 55 and over, while 20.8% are in this age group today. At the same time, the percentage of workers in the 25-54 age group declined from 69.8% to 63.4%.

As shown in **Table 11**, 16.4% of workers in private industry in Broome County are 55-64 and 4.4% are age 65 and over. Industry sectors with higher than average percentages of older workers include manufacturing (27.3%), real estate and rental and leasing (27.0%), finance and insurance (26.2%), and transportation and warehousing (25.3%). More than one in four workers employed in the production of computers and electronics, machinery, and fabricated metals is age 55 and over. There is also a relatively high proportion of retirement-age workers among insurance carriers and social assistance providers in Broome County.

Industries with a high proportion of workers approaching retirement age may need to plan for increased recruiting efforts and training programs to address the loss of older workers. Possible options include bringing in experienced employees from outside the region, hiring individuals with similar skills from other industries, or encouraging workers to delay their retirement by offering flexible schedules or higher pay. It is likely that some job openings will remain vacant, with responsibilities shifted to other employees. Training and mentoring will be necessary to minimize the loss of institutional knowledge. Employers may look to technology to reduce their reliance on labor. Technological changes not yet identified could even make certain categories of employment obsolete.

⁶ Due to differences in methodology, QWI employment counts are not comparable to those from other sources.
Workforce Profile



Broome County Comprehensive Plan Building our Future

Table 11: Broome County Workforce Distribution by Age Group

	Young		Prime Working-Age			Pre- and Post-Retirement Age		Total, 55+
	14-24	25-34	35-44	45-54	55-64	65-99		
All Industry Sectors (Public and Private)	13.5%	19.1%	18.8%	26.1%	17.8%	4.7%	22.5%	
All Private Industry Sectors	15.8%	20.2%	18.4%	24.8%	16.4%	4.4%	20.8%	
Manufacturing	5.0%	13.3%	18.2%	36.1%	24.2%	3.1%	27.3%	
Real Estate and Rental and Leasing	9.9%	19.3%	19.1%	24.7%	19.6%	7.4%	27.0%	
Finance and Insurance	4.7%	19.2%	20.8%	29.0%	20.6%	5.6%	26.2%	
Transportation and Warehousing	8.3%	14.7%	22.5%	29.0%	18.8%	6.5%	25.3%	
Other Services	17.6%	18.9%	17.4%	21.2%	16.6%	8.2%	24.8%	
Professional and Technical Services	7.2%	23.2%	19.2%	25.8%	18.2%	6.3%	24.5%	
Health Care and Social Assistance	10.0%	20.7%	19.5%	25.5%	19.4%	4.7%	24.1%	
Management of Companies	11.3%	19.5%	22.0%	25.1%	17.9%	4.2%	22.0%	
Information	8.7%	25.6%	21.7%	24.2%	16.7%	3.0%	19.7%	
Wholesale Trade	10.0%	20.3%	22.7%	27.8%	15.2%	4.0%	19.2%	
Arts, Entertainment, and Recreation	29.0%	18.8%	15.2%	18.1%	13.2%	5.4%	18.6%	
Retail Trade	29.3%	20.0%	14.9%	17.5%	12.9%	5.3%	18.2%	
Administrative and Waste Services	17.5%	25.7%	18.4%	21.5%	12.8%	4.0%	16.8%	
Construction	9.8%	23.3%	23.3%	29.7%	10.9%	2.9%	13.8%	
Accommodation and Food Services	39.6%	25.0%	13.6%	13.0%	6.4%	2.3%	8.7%	
Selected Industries (with NAICS Codes)								
Computer and Electronic Product Mfg (334)	2.3%	12.1%	15.7%	39.1%	28.3%	2.5%	30.7%	
Insurance Carriers & Related Activities (524)	3.5%	16.4%	21.2%	30.2%	22.5%	6.2%	28.7%	
Machinery Manufacturing (333)	3.1%	11.1%	16.0%	41.6%	26.6%	1.5%	28.1%	
Fabricated Metal Product Mfg (332)	5.1%	12.7%	19.9%	34.3%	22.6%	5.1%	27.7%	
Social Assistance (624)	11.1%	21.8%	18.5%	23.0%	18.8%	6.6%	25.4%	
Ambulatory Health Care Services (621)	6.8%	18.4%	22.6%	27.3%	19.4%	5.6%	24.9%	
Hospitals (622)	9.0%	21.4%	18.5%	26.4%	21.0%	3.6%	24.6%	
Truck Transportation (484)	5.1%	14.3%	24.5%	32.7%	18.6%	4.8%	23.4%	
Merchant Wholesalers Durable Goods (423)	8.2%	17.8%	22.1%	29.0%	17.4%	5.4%	22.7%	
Nursing and Residential Care Facilities (623)	16.1%	21.1%	18.9%	23.3%	15.7%	4.7%	20.4%	
Credit Intermediation & Related (522)	8.4%	26.8%	21.2%	25.7%	14.6%	3.3%	17.9%	
Food Manufacturing (311)	15.4%	15.4%	21.5%	30.7%	15.2%	1.4%	16.6%	
Merchant Wholesalers Nondurables (424)	11.0%	22.2%	23.5%	27.0%	13.1%	3.1%	16.1%	
Specialty Trade Contractors (238)	9.8%	23.5%	24.2%	29.2%	10.3%	3.0%	13.3%	
Heavy/Civil Engineering Construction (237)	10.4%	25.4%	22.7%	28.6%	10.2%	2.7%	12.9%	

Source: U.S. Census Bureau, Local Employment Dynamics Program. Quarterly Workforce Indicators (QWI) data; based on averages for last 4 quarters, ending Q1 2012. Unless otherwise noted, all industries listed are private sector only. Some sectors not shown.

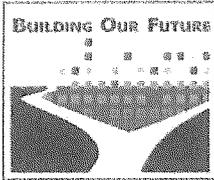
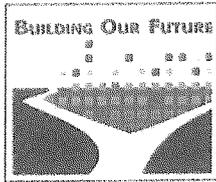


Table 12: Broome County Workforce Distribution by Gender and Educational Attainment

	Male	Female	Age 25 and Over Only			
			Less than HS	HS Diploma	Some College or Associate	Bachelor's Degree or Higher
All Industry Sectors, Public and Private	49.2%	50.8%	8.9%	30.0%	33.4%	27.7%
All Private Industry	50.8%	49.2%	10.1%	31.8%	33.7%	24.4%
Professional and Technical Services	48.5%	51.5%	5.2%	21.7%	31.0%	42.1%
Finance and Insurance	37.3%	62.7%	4.8%	22.4%	32.9%	39.9%
Information	56.8%	43.2%	7.0%	25.1%	31.0%	36.9%
Health Care and Social Assistance	21.3%	78.7%	7.2%	27.0%	38.3%	27.4%
Management of Companies	41.8%	58.2%	7.5%	29.9%	35.2%	27.0%
Manufacturing	71.6%	28.4%	9.2%	33.3%	32.5%	25.0%
Arts, Entertainment, and Recreation	51.3%	48.7%	10.4%	31.6%	32.9%	25.0%
Other Services	41.5%	58.5%	11.2%	32.5%	33.9%	22.3%
Wholesale Trade	78.3%	21.7%	10.2%	34.8%	33.8%	21.3%
Real Estate and Rental and Leasing	65.9%	34.1%	12.6%	33.7%	33.5%	20.1%
Administrative and Waste Services	61.4%	38.6%	14.7%	34.6%	32.2%	18.5%
Transportation and Warehousing	80.5%	19.5%	12.0%	37.5%	33.0%	17.6%
Retail Trade	50.1%	49.9%	12.8%	38.1%	32.7%	16.4%
Accommodation and Food Services	46.1%	53.9%	17.7%	37.4%	30.0%	14.8%
Construction	88.7%	11.3%	13.8%	39.6%	31.7%	14.8%
Selected Industries (with NAICS Codes)						
Insurance Carriers & Related Activities (524)	39.2%	60.8%	4.4%	21.9%	33.2%	40.6%
Credit Intermediation & Related (522)	31.5%	68.5%	6.0%	24.7%	33.6%	35.7%
Computer and Electronic Product Mfg (334)	69.0%	31.0%	6.0%	26.5%	33.1%	34.4%
Ambulatory Health Care Services (621)	20.8%	79.2%	5.8%	24.7%	37.6%	31.9%
Hospitals (622)	21.1%	78.9%	6.1%	25.5%	39.6%	28.8%
Machinery Manufacturing (333)	79.7%	20.3%	7.8%	31.5%	34.2%	26.5%
Social Assistance (624)	22.8%	77.2%	9.9%	30.8%	36.8%	22.6%
Nursing and Residential Care Facilities (623)	21.2%	78.8%	9.8%	31.1%	37.3%	21.8%
Merchant Wholesalers Durable Goods (423)	78.0%	22.0%	9.9%	36.1%	33.2%	20.8%
Merchant Wholesalers Nondurables (424)	79.2%	20.8%	10.6%	35.1%	34.4%	19.9%
Food Manufacturing (311)	67.4%	32.6%	10.2%	40.5%	33.0%	16.3%
Truck Transportation (484)	87.2%	12.8%	11.7%	39.8%	32.6%	15.9%
Heavy/Civil Engineering Construction (237)	89.3%	10.7%	13.6%	41.0%	30.1%	15.3%
Specialty Trade Contractors (238)	89.2%	10.8%	14.0%	39.1%	32.5%	14.4%
Fabricated Metal Product Mfg (332)	83.4%	16.6%	12.8%	41.3%	32.0%	13.9%

Source: U.S. Census Bureau, Local Employment Dynamics Program. Quarterly Workforce Indicators (QWI) data; based on averages for last 4 quarters, ending Q1 2012. Unless otherwise noted, all industries listed are private sector only. Some sectors not shown.



Employment by Gender

As indicated by the data in **Table 12**, the workforce in Broome County is about evenly split between men and women. There are, however, several industry sectors in which either men or women predominate. Among the sectors in which men comprise 70% or more of the workforce are construction, transportation and warehousing, wholesale trade, and manufacturing. The only sector in which women account for a significantly greater share of the workforce is health care and social assistance.

These characteristics are generally consistent with those for the state as a whole: in New York State, the workforce in the construction and transportation and warehousing sectors is disproportionately male, while workers employed in health care and social assistance are disproportionately female.

Employment by Educational Attainment

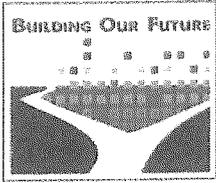
The LEHD program captures QWI data on the educational attainment of workers in four categories: 1) those with less than a high school diploma; 2) those with a high school diploma or its equivalent; 3) those who have attended some college or have an associate degree; and 4) those who have a bachelor's degree or higher. The data are restricted to workers age 25 years and over.

In **Table 12**, industry sectors are ranked by the percentage of workers with at least a bachelor's degree. Professional and technical services, finance and insurance, and information are the top three sectors; more than a third of the workforce in each of these sectors has a bachelor's degree or higher. Health care and social assistance and management also have above-average proportions of workers with at least a bachelor's degree.

Other industries on the list have lower levels of educational attainment. Construction and hospitality are tied for the lowest, with fewer than 15% of workers possessing a four-year degree.

Contrary to the perception that the manufacturing workforce is not well-educated, there are relatively high rates of educational attainment among workers in computer and electronics and machinery manufacturing in Broome County. Banking and insurance employees also have high levels of educational attainment.

Although each industry relies on a different mix of occupations and skills, understanding the educational attainment of the incumbent workforce in Broome County can help to identify the minimal educational requirements for employment.



New Hires

In the first quarter of 2012, there were more than 10,000 new hires across all industry sectors in Broome County (Table 13). Nearly two-thirds of the hiring activity occurred in five industry sectors: accommodation and food services, retail trade, administrative services and waste management, health care, and construction.

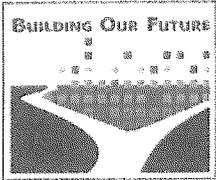
Table 13: Volume of New Hires by Industry and Age, Broome County

	Total	14-24	25-44	45-54	55-64	65-99
All NAICS Sectors, Public and Private	10,515	4,109	4,140	1,415	674	177
All Private Industry	9,645	3,748	3,841	1,311	591	154
Accommodation and Food Services	1,880	1,068	615	133	47	17
Retail Trade	1,625	829	536	156	81	23
Administrative and Waste Services	1,437	476	664	197	80	20
Health Care and Social Assistance	1,154	349	507	189	89	20
Construction	831	160	404	193	64	10
Manufacturing	523	150	206	107	52	8
Other Services	456	182	172	56	32	14
Wholesale Trade	449	127	201	82	35	4
Professional and Technical Services	291	90	124	40	27	10
Government	267	117	75	37	30	8
Arts, Entertainment and Recreation	241	130	75	22	14	0
Real Estate and Rental and Leasing	164	46	74	26	14	4
Transportation and Warehousing	144	33	61	30	16	4
Information	141	48	61	22	10	0
Finance and Insurance	112	30	53	20	9	0

Source: U.S. Census Bureau, Local Employment Dynamics Program. Quarterly Workforce Indicators (QWI) data; based on averages for last 4 quarters, ending Q1 2012. Unless otherwise noted, all industries listed are private sector only. Some sectors not shown.

It is important to note that *the number of new hires does not directly equate to an increase in total employment*. The new hires count is simply an indication of hiring activity in an industry. Workers may be hired to fill newly created jobs, or to replace workers who have left (or both). Separations, both voluntary (retirement, leaving for a new job) and involuntary (layoffs, firings) account for the other half of the employment change equation.

Men accounted for 53% of the new hires. With respect to age, the number of new hires ranged from 177 among those age 65 and over to 4,140 among those between the ages of 25 and 44.



The average monthly earnings of new hires across all industries were about \$2,000. The highest earnings for new hires were in finance and insurance, followed by manufacturing, construction, and professional and technical services. Within these sectors, average earnings were especially high for new hires in machinery manufacturing (\$5,987), computer and electronics manufacturing (\$5,888), and computer systems design and related services (\$5,872).⁷

A high ratio between new hire earnings and the earnings of all workers in that industry suggests that employees are being hired for high-level positions, or that there is an unusually strong demand for labor. This was the case with finance and insurance, construction, manufacturing, and arts, entertainment, and recreation, as well as with significant Broome County industries such as machinery manufacturing (112.1%), computer and electronics manufacturing (97.4%), insurance carriers (84.2%), and nondurable goods wholesalers (77.8%).

Employee Turnover

The employee turnover rate is a measure of workforce stability; it measures the movement of workers into and out of jobs, including retirements. In Broome County, the average quarterly turnover rate for all private sector workers (over the last four quarters, ending Q1 2012) was 8.9%. This is comparable to a turnover rate of 9.0% for New York State overall during the same period.

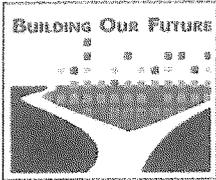
Turnover rates vary by industry and age: for example, teens and young adults tend to have relatively high turnover rates, and employee turnover is generally higher in low-wage industries such as retail and food services.

Table 14: New Hire Earnings by Industry, Broome County

	Average Monthly Earnings		Ratio of New Hires vs. All Workers
	New Hires	All Workers	
All NAICS Sectors, Public and Private	\$1,997	\$3,594	55.6%
All Private Industry	\$2,016	\$3,468	58.1%
Finance and Insurance	\$3,635	\$4,919	73.9%
Manufacturing	\$3,632	\$4,864	74.7%
Construction	\$3,394	\$4,381	77.5%
Professional and Technical Services	\$3,286	\$4,570	71.9%
Wholesale Trade	\$2,977	\$4,067	73.2%
Management of Companies	\$2,735	\$4,259	64.2%
Information	\$2,425	\$3,561	68.1%
Health Care and Social Assistance	\$2,349	\$3,897	60.3%
Transportation and Warehousing	\$2,328	\$3,342	69.7%
Real estate and Rental and Leasing	\$1,987	\$2,772	71.7%
Administrative and Waste Services	\$1,757	\$2,407	73.0%
Arts, Entertainment and Recreation	\$1,433	\$1,424	100.6%
Other Services	\$1,244	\$1,845	67.4%
Retail Trade	\$1,233	\$2,116	58.3%
Accommodation and Food Services	\$919	\$1,293	71.1%

Source: U.S. Census Bureau, Local Employment Dynamics Program. Quarterly Workforce Indicators (QWI) data; based on averages for last 4 quarters, ending Q1 2012. Unless otherwise noted, all industries listed are private sector only. Some sectors not shown.

⁷ NAICS 333, 334, and 5413, respectively.
Workforce Profile



Rates of turnover also indicate the extent to which employers will be able to find replacements for workers who are retiring or leaving for other jobs. Industries with relatively high turnover rates may find it easy to find replacements; those with low rates of turnover may face challenges in recruiting individuals with specific skill sets.

Local Employment Dynamics data indicate that in Broome County, the lowest employee turnover rates are in manufacturing, followed by finance and insurance. The turnover rate is particularly low in some of the County's largest industries: computer and electronics manufacturing (2.6%), insurance carriers (3.6%), and hospitals (3.9%).

On one hand, low employee turnover reflects a stable workforce. However, low rates of turnover combined with a large proportion of workers close to retirement age indicates the potential for labor shortages in certain industries. Indeed, as previously mentioned, there is a correlation between turnover and age.

The question is whether the aging of the workforce in Broome County can be addressed in the near future. As workers in certain industries begin to retire, will they be replaced with individuals with similar levels of educational attainment and skill? Are local colleges and universities and training providers preparing people for these jobs? Or will businesses in the County need to recruit people from other locations? These are questions that must be considered in the context of the comprehensive plan and economic development initiatives in Broome County, the Southern Tier, and New York State.

Education and Training Programs

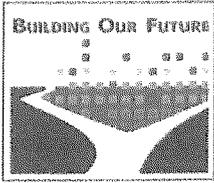
Career and Technical Education

Broome-Tioga BOCES serves 15 school districts in the Binghamton MSA, including all 12 districts in Broome County. It offers Career and Technical Education (CTE), primarily on a half-day basis, to high school juniors and seniors from component districts. CTE courses provide students an opportunity to learn job skills through instruction and hands-on experience. Successful students

Table 15: Employee Turnover Rates in Selected Industry Sectors

	Broome County	New York State
All NAICS Sectors, Public and Private	7.9%	8.2%
All Private Industry	8.9%	9.0%
Construction	15.0%	12.6%
Manufacturing	4.6%	5.4%
Wholesale Trade	7.1%	6.5%
Retail Trade	11.2%	10.4%
Transportation and Warehousing	8.8%	8.0%
Information	5.8%	8.3%
Finance and Insurance	5.4%	6.2%
Professional and Technical Services	7.4%	8.3%
Health Care and Social Assistance	5.8%	7.4%
Accommodation and Food Services	15.4%	14.2%
Arts, Entertainment, and Recreation	20.3%	14.7%
Real Estate and Rental and Leasing	9.0%	6.5%
Management of Companies	5.6%	7.0%

Source: U.S. Census Bureau, Local Employment Dynamics Program. Quarterly Workforce Indicators (QWI) data; based on averages for last 4 quarters, ending Q1 2012. Unless otherwise noted, all industries listed are private sector only.



are prepared to enter the workforce, earn a technical degree, and/or advance to college with credits earned through articulation agreements. CTE content areas include:

- Automotive Technology
- Building Trades
- Business/Communications
- Health Science
- Manufacturing
- Personal Services (e.g., culinary arts, food industry, cosmetology)

According to Broome Tioga Workforce New York, the manufacturing program has been a “hard sell” to young adults, and BOCES no longer offers CNC/machining courses to high school students. Students in the building trades program attend classes in carpentry, masonry, and electricity. A plumbing/HVAC class is not currently offered due to the cost of equipment and the reorganization of class space on campus, but is expected to be reinstated in the future.

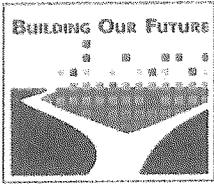
Other BOCES programs include New Visions, an academically rigorous program for college-bound high school seniors interested in careers in health, education, engineering, or law and government; alternative education for youth deemed to be at-risk; a GED program for students ages 16 to 21 who are unlikely to complete the requirements for a high school diploma; and adult CTE programs enabling participants to access employment or career advancement.

Colleges and Universities

An important aspect of the labor supply is college enrollment, and the number of annual graduates within specific programs. As of fall 2011, there were 20,946 students enrolled at Binghamton University and Broome Community College, the majority (86.2%) as undergraduates. If all post-secondary educational institutions in the Southern Tier plus neighboring Cortland County are counted, there are nearly 62,000 students attending colleges in and around Broome County.

Name	Location	Enrollment: Total / Undergraduate
Binghamton University (SUNY Binghamton)	Broome County	14,746 / 11,861
Broome Community College	Broome County	6,200 / 6,200
SUNY Cortland	Cortland County	7,331 / 6,371
Tompkins Cortland Community College	Tompkins County	5,662 / 5,662
Cornell University	Tompkins County	21,131 / 14,167
Ithaca College	Tompkins County	6,760 / 6,276

Source: U.S. Department of Education, National Center for Educational Statistics.



Broome County Comprehensive Plan *Building our Future*

Within Binghamton University (BU) are seven schools and colleges: Harpur College of Arts and Sciences, Decker School of Nursing, the School of Management, Watson School of Engineering and Applied Science, the College of Community and Public Affairs, the School of Education, and the Graduate School. Harpur College comprises about 65% of undergraduate enrollment, followed by the Watson School, with 16%.

In the 2011-12 school year, Binghamton University (BU) awarded a total of 3,121 bachelor's degrees. The number of bachelor's degrees was highest in the social sciences (474); business, management, and marketing (452), including accounting and finance; psychology (297); engineering (290), including mechanical, industrial, and electrical engineering and bioengineering; biology and biomedical sciences (279); and English language and literature (243). BU also has a registered nursing program which had 169 graduates.

According to the BU website, 20% of undergraduates go on to receive a graduate degree from the university. In 2011-12, BU awarded 833 master's degrees, with the largest numbers in business (204) and engineering (137).

Broome Community College (BCC) awarded 1,046 associate's degrees in the 2011-12 school year. The number of two-year degrees was highest in liberal arts and sciences (435), health professions and related programs (185), and business (160). BCC has one of the largest health sciences programs of any community college in the state, drawing students from Pennsylvania as well as New York. It also has a strong engineering program; many graduates transition to engineering programs at BU.

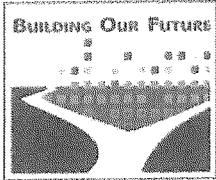
Recognized as critical community assets, both Binghamton University and Broome Community College are continuing to pursue opportunities for growth: BU with the development of high-tech research centers to stimulate innovation and spin-off job creation; BCC with the creation of new facilities to house students from outside the County and accommodate an expanding hospitality program. Both institutions are involved with efforts to construct a high technology incubator in downtown Binghamton, and they maintain close relationships with many of the region's major employers, eager to contribute to Broome County's economic development.

Training

The Broome Tioga Workforce Investment Board (WIB) serves as the administrative entity for federal Workforce Investment Act (WIA) funds in Broome County. It operates the Broome Employment Center in Binghamton (and a similar facility in Owego, Tioga County), where visitors can receive information about demand occupations and training opportunities, access job listings, participate in computer workshops, or meet with an employment counselor for help finding a job.

According to the Broome Tioga Local Plan for FFY 2012, current and projected demand occupations in the local area include:

Workforce Profile



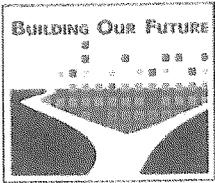
- **Health care practitioners and technical occupations:** Registered nurses, physical therapists, medical and clinical laboratory technicians, dental hygienists, emergency medical technicians and paramedics, licensed practical and licensed vocational nurses, medical records and health information technicians, physician assistants, nurse practitioners
- **Health care support occupations:** Home health aides, nursing aides, orderlies and attendants, occupational therapist assistants and aides, physical therapy assistants and aides, dental assistants, medical assistants, personal care aides
- **Transportation occupations:** Heavy and tractor-trailer truck drivers; laborers and freight, stock, and material movers; industrial truck and tractor operators, light truck or delivery service drivers
- **Production occupations:** Team assemblers, computer-controlled machine tool operators, multiple machine tool setters and operators, welders
- **Construction and extraction occupations:** Brick masons; carpenters; electricians; plumbers, pipe fitters, and steamfitters; construction workers; sheet metal workers

The plan adds: “Based on the number of job openings posted by regional employers, United Health Services and Lourdes Hospital, multiple extended care facilities and nursing homes, the Board has determined that all levels of Healthcare Support Occupations and Healthcare Practitioners are considered High Demand occupations in the Broome Tioga LWIA. Second to Healthcare occupations are occupations in the Transportation industry targeted primarily to tractor-trailer drivers and warehousing positions. Many of the driver openings are a result of the increased hauling of equipment and water related to the natural gas industry.”

Eligible Broome County residents can use federal WIA funds to pay for training programs that have been WIA-certified. Training programs consist of one or more courses that, upon successful completion, lead to credentials such as a diploma, industry-recognized certificate or licensure, associate degree, or bachelor's degree. The process provides standards that training providers must meet in order to receive WIA training dollars.

The NYS Department of Labor lists the following eligible training providers in Broome County:

- | | |
|-----------------------------------|---|
| ■ Broome County Urban League | ■ Local 325 IBEW Joint Apprenticeship Program |
| ■ Broome Community College | ■ Maines Driver Training Institute |
| ■ Broome-Tioga BOCES | ■ SAGE Truck Driving School CDL Training |
| ■ Family Enrichment Network, Inc. | ■ SUNY Empire State College |
| ■ Link Environmental Services | ■ Upstate Training |



Broome County Comprehensive Plan *Building our Future*

Three of the providers – Family Enrichment Network, Maines Driver Training Institute, and the Sage Truck Driving School – offer CDL truck driver training. Others, including the Local 325 IBEW, Link Environmental Services, and Broome-Tioga BOCES, provide training in the construction trades. The vast majority of the training is through Broome-Tioga BOCES and Broome Community College. They offer certificate and associate's degree programs in fields such as accounting, office administration, computer science, health care, engineering technology, criminal justice and homeland security, hotel and restaurant management, and early childhood education.

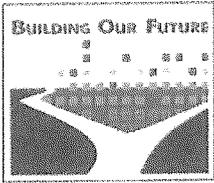
The Broome Tioga WIB is currently involved in a sector-based training initiative to train individuals for employment in the gas extraction industry. Known as ShaleNET, this initiative is being funded by a three-year, multi-state grant from the U.S. Department of Labor. The mission of the grant is to design a comprehensive recruitment, training, placement, and retention program for high-priority occupations in the natural gas drilling and production industry throughout the Marcellus Shale footprint.

Applicants have been screened and assessed prior to enrolling in the ShaleNET training or in an introduction to gas drilling funded by the state. It is anticipated that 40-45 individuals will be trained for jobs related to this industry sector. Although New York State has not yet approved Marcellus shale gas extraction, it is anticipated that trained workers will be able to fill job openings in border Pennsylvania counties.

On-the-job training (OJT) contracts have also been a means for local employers to hire and train new employees. The Broome-Tioga WIB can reimburse employers for up to 90% of an individual's wages while that individual is participating in OJT. Some OJT contracts are paid for out of WIA funds, others through a National Emergency Grant OJT program. Broome-Tioga has been one of the major users of this statewide grant as it has been very successful in returning unemployed adults and dislocated workers back to employment.

Broome County companies with OJT contracts in FFY 2012 have included Arctic Bear Plumbing, BlueStorm Technologies, Crowley Fabricating, Devonian Stone, Evolution Consulting, Foam It Insulation, Modern Marketing Concepts, R&M Small Engine Repair, STCR Business Systems, TeamWorld, and Triple Cities Metal Finishing. The types of positions for which workers are being trained range from customer service and sales representatives to HVAC and small engine technicians, from data entry specialists to machinists and sheet metal fabricators. Nearly \$400,000 has been committed to OJT contracts to date.

The Broome-Tioga WIB is also engaged in a Chamber of Commerce OJT program that was awarded through a legislative member item. Broome-Tioga conducts much of the matching and completes all of the jobseeker assessment and required data entry; the Greater Binghamton Chamber of Commerce writes the contract and issues the payments to the employer. The additional funding has helped to increase job placements in the area.



Broome County Comprehensive Plan *Building our Future*

Within the context of the Southern Tier REDC's Strategic Economic Development Plan, the Workforce Investment Boards in the Southern Tier, including the Broome-Tioga WIB, have committed to targeting resources and identifying additional resources to train or upgrade the skills of the energy sector workforce. The Energy Workforce Development Initiative will “develop a highly qualified and vibrant workforce prepared to respond to the opportunities resulting from the emergence of the energy industry in the Southern Tier for projects such as wind farm construction and maintenance; weatherization of homes, businesses, and public buildings for maximum efficiency; retrofit of residential and commercial facilities for efficiency improvements and installation of biomass heating systems; expanded research and manufacturing of existing and new solar energy technology products; increasing energy efficiency use in buildings through improved weatherization and application of electricity-saving technologies; and natural gas extraction and operations.”⁸ The intention of the initiative is to offer skills that are adaptable as the energy industry evolves. Other workforce development system tasks to implement regional strategies are shown in **Table 17**.

⁸ Southern Tier Regional Economic Development Council, *Strategic Economic Development Plan: 2011–2016*, p. 118.
Workforce Profile

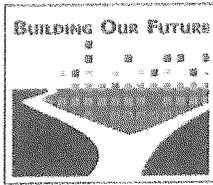


Table 17: Southern Tier Workforce Development Priority Goals and Tasks, 2012 – 2013

Goal	Action Item	Tasks
Strategy 1. The Southern Tier... New York's Leader in Energy Efficiency and Renewable Energy Technology	Residential and Small Scale Commercial Retrofit Energy Development Alliance for New York EDANY	<ul style="list-style-type: none"> ▪ Assist customers in identifying and attending local BOCES and community colleges in renewable energy and energy efficiency-related programs. ▪ Pursue grant opportunities that target energy efficiency and renewable energy occupations. ▪ Identify existing energy sector career marketing materials; review and create regional materials for marketing. ▪ Promote energy sector careers distribution of energy sector related marketing materials to youth, adults and dislocated workers. ▪ Jointly promote advanced manufacturing sector related careers utilizing the Workforce NY Career Centers in the Southern Tier region as well as connections with school districts, youth program providers, etc.
Strategy 2. Southern Tier Transportation Alliance: Building Next Generation Technology and Manufacturing	Southern Tier Transportation Industry Cluster	<ul style="list-style-type: none"> ▪ Assist customers in identifying and attending local BOCES and community colleges in advanced manufacturing related programs. This includes financial assistance, if funding is available. ▪ Seek out and fund on-the-job training opportunities with advanced manufacturing employers as funding is available. ▪ Identify and apply for additional advanced manufacturing training funding. ▪ Assist employers in posting their advanced manufacturing positions and searching the talent bank for qualified employees. ▪ Review existing health career marketing materials and career information, create new ones where necessary. ▪ Promote health careers through Workforce NY Career Centers in the Southern Tier, WIA youth programs, and existing relationships with other youth program providers and school districts. ▪ Assist employers in posting their health care positions and searching the talent bank for qualified employees.
Strategy 3. Health Care 2020... Integrating Health Care Providers, Higher Education and Cutting-Edge Technology	All	<ul style="list-style-type: none"> ▪ Assist businesses with recruitment for agricultural occupations
Strategy 4. Revitalize the Rural Farm- and Forest-Based Economy	All	<ul style="list-style-type: none"> ▪ Assist employers in posting construction/building trades-related positions and searching the talent bank for qualified employees
Strategy 5. Strengthen the Region's Economic Development Backbone	All	

Source: Southern Tier Regional Economic Development Council, *Strategic Economic Development Plan: 2011–2016* and Southern Tier REDC Workforce Development Work Group, *Work Plan Template – Workforce Development Priority Goals and Strategies, 2012–2013*.

Attachment 2

Labor and Wage Rate Analysis

Attachment 2

Trade	Percentage	Total Labor Value	Per hr cost 2015	Total Hours	Avg Daily Man Power	Per hr cost 2016	2016 Labor increase @ 70% OF HOURS	Per hr cost 2017	2017 Labor increase @ 25% OF HOURS
Carpenter	7%	\$ 3,131,438	\$47.96	65,292.71	22.8	\$48.92	\$ 43,840.14	\$49.90	\$ 31,627.53
Drywall finisher	2%	\$ 886,302	\$47.51	18,655.06	6.5	\$48.16	\$ 8,488.05	\$49.12	\$ 7,523.59
Electrician	22%	\$ 12,833,562	\$62.54	205,205.66	71.7	\$63.79	\$ 179,554.95	\$65.07	\$ 129,577.11
Insulator	4%	\$ 2,125,931	\$56.98	37,310.12	13.0	\$58.49	\$ 39,436.80	\$60.05	\$ 28,635.52
laborer	6%	\$ 2,440,641	\$43.61	55,965.18	19.5	\$44.91	\$ 50,928.31	\$45.81	\$ 30,755.66
Painter	2%	\$ 892,085	\$47.82	18,655.06	6.5	\$48.47	\$ 8,488.05	\$49.44	\$ 7,552.50
Pipefitter	15%	\$ 8,859,288	\$63.32	139,912.95	48.9	\$65.22	\$ 186,084.22	\$67.22	\$ 136,415.13
Plumber	11%	\$ 6,496,811	\$63.32	102,602.83	35.8	\$65.22	\$ 136,461.76	\$67.22	\$ 100,037.76
Sheetmetal Worker	2%	\$ 968,944	\$51.94	18,655.06	6.5	\$52.74	\$ 10,446.83	\$53.79	\$ 8,650.35
Sprinkler Fitter	5%	\$ 2,781,936	\$59.65	46,637.65	16.3	\$60.84	\$ 38,947.10	\$62.06	\$ 28,097.55
Iron Worker	4%	\$ 2,166,226	\$58.06	37,310.12	13.0	\$59.22	\$ 30,327.16	\$60.41	\$ 21,878.88
Mill Wright	1%	\$ 465,910	\$49.95	9,327.53	3.3	\$51.35	\$ 9,140.98	\$52.75	\$ 6,529.27
Roofer	3%	\$ 1,250,822	\$44.70	27,982.59	9.8	\$45.50	\$ 15,670.25	\$46.41	\$ 11,962.56
Lathers	4%	\$ 2,166,226	\$58.06	37,310.12	13.0	\$59.22	\$ 30,327.16	\$60.41	\$ 21,878.88
Masons	5%	\$ 2,560,407	\$54.90	46,637.65	16.3	\$56.00	\$ 35,845.70	\$57.12	\$ 25,860.11
Operating engineers	7%	\$ 4,518,908	\$69.21	65,292.71	22.8	\$71.04	\$ 83,639.96	\$72.93	\$ 60,722.22
Total	100%	\$ 54,545,454		932,753.00	325.7		\$ 907,627.43		\$ 657,704.61

Total Wage savings = \$ 1,565,332

Total Bid Savings including Contractor OH&P = \$ 1,900,000

**Binghamton – Johnson City Joint Sewage Treatment Plant Restoration and Rehabilitation Project
DRAFT Milestones and Levels of Treatment During Construction**

Milestone	Date	Plant Peak Flow Rate	Processes in Operation
Notice to Proceed	January 2016	60 mgd	<ul style="list-style-type: none"> • Coarse Screens (Binghamton side only) • Grit Removal • Primary Settling Tanks 1-10 with CEPT • Chlorine Disinfection
Plant Flow Reduction	February 2016	35 mgd	<ul style="list-style-type: none"> • Coarse Screens (Binghamton side only) • Primary Settling Tanks 1-6 with CEPT • Chlorine Disinfection
Substantial Completion 1	January 2018	60 mgd	<ul style="list-style-type: none"> • Coarse Screens (Binghamton side only) • Fine Screens • Aerated Grit Removal • Primary Settling Tanks 1-10⁽¹⁾ with CEPT • BAF CN Cells 1-8 (capacity 35 mgd)⁽²⁾ • BAF DN Cells 1-4⁽²⁾ • UV Disinfection⁽³⁾⁽⁴⁾ <p>Note:</p> <p>(1) Settling Tanks 7-10 and Settling Tanks 3, 4 and 5 will be operational by January 2018, allowing primary treatment of up to 60 mgd. All ten of the settling tanks will be operational by April 2018.</p> <p>(2) BAF CN Cells 1-8 can treat up to 35 mgd, which is the design peak flow of BAF DN Cells 1-4.</p> <p>(3) The UV Disinfection is hydraulically connected to the BAF process. Whereas the UV system is designed for 60 mgd, the flow is limited during this period to 35 mgd (the BAF CN limit).</p> <p>(4) During this period, flows greater than 35 mgd will receive primary treatment and bypass the BAF process and UV disinfection, and will be disinfected using chlorine in Chlorine Contact Tank 2.</p>
Substantial Completion 2	January 2019	60 mgd	<ul style="list-style-type: none"> • Coarse Screens (Binghamton side only) • Fine Screens • Aerated Grit Removal • Primary Settling Tanks 1-10 with CEPT • BAF CN Cells 1-14 • BAF DN Cells 1-4 • UV Disinfection

Note: Dates are an estimate. The actual dates and time periods may vary based on the construction schedule of the contractor.
Draft Rev 1: 09/21/2015.

**Binghamton – Johnson City Joint Sewage Treatment Plant Restoration and Rehabilitation Project
DRAFT Milestones and Levels of Treatment During Construction**

Note: Dates are an estimate. The actual dates and time periods may vary based on the construction schedule of the contractor.
Draft Rev 1: 09/21/2015.



Legislative Branch

RL Number: _____

Date Submitted: _____

City Clerk, City Hall, Binghamton, NY 13901 607-772-7005

REQUEST FOR LEGISLATION

Requests for Legislation (RLs) may be submitted to the City Clerk's Office for consideration at City Council Work Sessions. RLs generated from within City Hall departments must be submitted to the Mayor, Comptroller and Corporation Counsel for review before submission. RLs generated by citizens may be submitted directly to the City Clerk's Office.

Applicant Information

Request submitted by: Gary R. Holmes, P.E.

Title/Department: Acting City Engineer, Engineering Dept.

Contact Information: grholmes@cityofbinghamton.com

RL Information

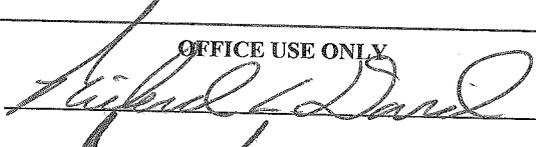
Proposed Title: A Resolution Authorizing the Mayor to Enter Into Supplemental Agreement No.2
With Jacobs Management Company for Additional Construction Management Services for the BAF
Restoration and Rehabilitation at the BJCJSTP

Suggested Content: A Resolution authorizing Supplemental Agreement No. 2 with Jacobs Mgmt
Company for additional Construction Management Services for the BAF Restoration and Rehabilitation
at the BJCJSTP. The amount of Supplemental Agreement No 2 is \$2,600,000.00. The amount of
\$1,950,000.00 is in budget line HX8150.500200.J11NN and \$650,000.00 in line HX8150.500200.J11FF

Additional Information

- Does this RL concern grant funding? Yes No
- If 'Yes', is the required RL Grant Worksheet attached? Yes No
- Is additional information related to the RL attached? Yes No
- Is RL related to previously adopted legislation? Yes No

If 'Yes', please provide Permanent Ordinance/Resolution/Local Law number(s): _____

OFFICE USE ONLY					
Mayor:					
Comptroller:					
Corporation Counsel:					
Finance <input type="checkbox"/>	Planning <input type="checkbox"/>	MPA <input type="checkbox"/>	PW/Parks <input type="checkbox"/>	Employees <input type="checkbox"/>	Rules/Special Studies <input type="checkbox"/>



Jacobs Project Management Co.
Two Penn Plaza, Suite 603
New York, NY 10121
212.944.2000 / 212.302.4645 fax

October 5, 2015

Gary R. Holmes, P.E.
City of Binghamton
City Hall
38 Hawley Street
Binghamton, New York 13901

**Subject: Construction Management/Administration Services
Restoration and Rehabilitation of the
Binghamton-Johnson City Joint Sewage Treatment Plant**

Dear Mr. Holmes:

Jacobs Project Management Company provided our first proposal on April 2, 2015 for the provision of construction management/administration services for the projects involved with the restoration and rehabilitation of the Binghamton-Johnson City Joint Sewage Treatment Plant. The anticipated scope of work at that time was based on the preliminary engineering report dated December 2014. Final design, performed by others, had not yet begun. Today the final design is nearing completion and there have been many changes in the program in comparison with the preliminary engineering report. These changes have an effect the cost of our services.

The major differences are as follows:

1. The total construction cost of the contracts in the program has increased significantly. Costs for construction management and inspection services are directly correlated to construction costs and construction time.

Project	Preliminary Construction Cost Estimate	Current Construction Cost Estimate
Compost Facility Demolition	\$1,000,000	\$1,673,000
Flood Repair Project	\$500,000	\$709,000
Floodwall Project	\$16,000,000	\$12,000,000
Emergency MCC and Feeder Replacement	Not included	\$1,119,000
Backup Generator	\$3,000,000	Included in BAF
BAF Facility Demolition	Included in BAF estimate	\$3,284,000
BAF and Ancillary Facilities Restoration and Rehabilitation - Note a	\$102,100,000	\$150,000,000 estimate
Chlorine Bypass	TBD	Included in BAF
Solid Handling / Anaerobic Digester Work – Note b	\$3,000,000	\$20,000,000
Total Estimated Construction Cost	\$125,600,000 + Chlorine Bypass	\$188,785,000

- a. A final engineer's estimate for the BAF project is not available at this time. \$150,000,000 is the number quoted to the contracting community and is anticipated to be at the low end of the range of probable cost.

- b. The final scope for the solids handling and anaerobic digester complex is uncertain at this time. This proposal assumes the final scope of work to equal about \$20,000,000 in improvements.
2. Our April 2, 2015 cost proposal assumed that the Work will be constructed within the milestones established by the NYSDEC consent order, plus coverage during a one year warranty period. Those dates were:
 - a. BAF Phase 1 – Initial Flows through a partially completed facility – by 4/1/2017
 - b. BAF - Remaining Work – by 12/29/2017
 - c. End of BAF warranty period – 12/29/2018

The currently anticipated milestone dates, yet to be approved by the DEC are as follows:

- a. BAF Phase 1 – Initial flows through a partially completed facility – by 3/30/2018
- b. BAF – Remaining Work
 - Substantial completion by 3/31/2019
 - Final completion by 4/30/2019
- c. End of BAF warranty period – 3/31/2020

Costs for construction management and inspection services are directly correlated to the period of time that the services are provided. The anticipated construction duration has increased by 16 months.

3. Tasks have also been assigned to Jacobs that were not within the scope of work in our April 2, 2015 cost estimate. The following is a listing and explanation of these tasks:
 - a. E001 – Explore the possible use of an Owner Controlled Insurance Program.
 - b. E002 – Explore and implement a Project Labor Agreement for the BAF project
 - c. E003 – Review and propose site security measures necessary during construction
 - d. E004 – Perform a detailed cost estimate of the floodwall
 - e. E005 – Perform a detailed cost estimate of the BAF project
 - f. E006 – Provide a third-party review of the existing digester coating and structure
 - g. E007 – Provide CM/CA and Inspection services for the Emergency MCC and Feeder Replacement project
 - h. E008 – Administrative work performed at the direction of the City of Binghamton's Program Director and Project Manager

Jacobs Project Management Company respectfully requests a contract amendment totaling \$2,600,000 to align our services with the currently anticipated scope of the program.

Should you have any questions, please contact Doug Most at (804) 254-9623 or at doug.most@jacobs.com. It is an honor to provide services to the City of Binghamton on this critical program.

Very truly yours,

Douglas J Most, PE
Northeast Water Operations Manager

SUMMARY

POSITION	NAME	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Hours Total	Billing Rate	Total
Jacobs Project Management Co.																
Project Manager	Doug Most	0	0	0	0	0	116	80	40	50	32	32	32	382	\$ 241.78	\$ 92,360
Senior Construction Manager	Jerry Nystrom	0	0	0	0	0	232	160	152	192	152	160	200	1248	\$ 199.14	\$ 248,523
Construction Manager (Demolition & Solids Contracts)	Johnnie Overton	0	0	0	0	0	232	160	152	192	152	160	200	1248	\$ 182.12	\$ 227,290
Construction Manager (Flood Wall & Other Projects)	Donal Barron	0	0	0	0	0	232	160	152	192	152	160	200	1248	\$ 182.12	\$ 227,290
Construction Manager (BAF)	TBD	0	0	0	0	0	0	0	152	192	152	160	200	856	\$ 182.12	\$ 155,895
Lead Mechanical Engineer	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0	\$ 144.12	\$ -
Lead Electrical, I&C and Commissioning	Dan Ryan	0	0	0	0	0	40	80	152	192	152	160	200	976	\$ 170.60	\$ 166,502
Mid-Level Project Engineer	TBD	0	0	0	0	0	0	0	152	192	152	160	200	856	\$ 110.79	\$ 94,841
Mid-Level Administrative Assistant	Linda Rockwood	0	0	0	0	0	232	160	152	192	152	160	200	1248	\$ 85.45	\$ 106,647
Junior Administrative Assistant	Kathleen Drathos	0	0	0	0	0	40	160	152	192	152	160	200	1056	\$ 59.03	\$ 62,336
Junior Inspector (Civil/Structural)	Frank Zmitrowitz	0	0	0	0	0	232	160	152	192	152	160	200	1248	\$ 89.21	\$ 111,333
Scheduler	Fred Grigori	0	0	0	0	0	40	80	40	40	40	40	40	320	\$ 163.86	\$ 52,435
Winstead Management Group																
Junior Inspector (Mechanical)	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0	\$ 84.00	\$ -
Junior Inspector (Civil/Structural)	TBD	0	0	0	0	0	0	0	152	192	152	160	200	856	\$ 84.00	\$ 71,904
Junior Inspector (Electrical)	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0	\$ 84.00	\$ -

SUMMARY

POSITION	NAME	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Hours Total	Billing Rate	Total	
Jacobs Project Management Co.	Project Manager	32	32	32	32	32	32	32	32	32	32	32	32	384	\$ 249.03	\$ 95,629	
	Senior Construction Manager	160	152	200	152	160	192	160	152	192	152	160	200	2032	\$ 205.11	\$ 416,787	
	Construction Manager (Demolition & Solids Contracts)	160	152	0	0	0	0	160	152	192	152	160	200	1328	\$ 187.59	\$ 249,116	
	Construction Manager (Food Wall & Other Projects)	160	152	200	152	160	192	160	152	192	152	160	200	2032	\$ 187.59	\$ 381,177	
	Construction Manager (BAF)	160	152	200	152	160	192	160	152	192	152	160	200	2032	\$ 187.58	\$ 381,170	
	Lead Mechanical Engineer	160	152	200	152	160	192	160	152	192	152	160	200	2032	\$ 148.45	\$ 301,648	
	Lead Electrical, I&C and Commissioning	160	152	200	152	160	192	160	152	192	152	160	200	2032	\$ 175.71	\$ 357,051	
	Mid-Level Project Engineer	160	152	200	152	160	192	160	152	192	152	160	200	2032	\$ 114.12	\$ 231,889	
	Mid-Level Administrative Assistant	160	152	200	152	160	192	160	152	192	152	160	200	2032	\$ 88.02	\$ 178,853	
	Junior Administrative Assistant	160	152	200	152	160	192	160	152	192	152	160	200	2032	\$ 60.80	\$ 123,547	
	Junior Inspector (Civil/Structural)	160	152	200	152	160	192	160	152	192	152	160	200	2032	\$ 91.89	\$ 186,710	
	Scheduler	40	40	40	40	40	40	40	40	40	40	40	40	40	480	\$ 168.77	\$ 81,011
	Winstead Management Group	Junior Inspector (Mechanical)	0	152	200	152	160	192	160	152	192	152	160	200	1872	\$ 86.52	\$ 161,965
		Junior Inspector (Civil/Structural)	160	152	200	152	160	192	160	152	192	152	160	200	2032	\$ 86.52	\$ 175,809
		Junior Inspector (Electrical)	0	0	0	0	0	192	160	152	192	152	160	200	1208	\$ 86.52	\$ 104,516

SUMMARY

POSITION	NAME	Hours												Billing Rate	Total			
		Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18					
Jacobs Project Management Co.																		
Project Manager	Doug Most	32	32	32	32	32	32	32	32	32	32	32	32	32	32	384	\$ 256.50	\$ 98,498
Senior Construction Manager	Jerry Nystrom	160	152	200	152	160	192	160	192	152	160	160	160	160	200	2032	\$ 211.26	\$ 429,290
Construction Manager (Demolition & Solids Contracts)	Johnnie Overton	160	152	200	152	160	192	160	192	152	160	160	160	160	200	2032	\$ 193.21	\$ 392,612
Construction Manager (Flood Wall & Other Projects)	Donal Barron	160	152	80	0	0	0	0	0	0	0	0	0	0	0	392	\$ 193.21	\$ 75,740
Construction Manager (BAF)	TBD	160	152	200	152	160	192	160	192	152	160	160	160	200	2032	\$ 193.21	\$ 392,605	
Lead Mechanical Engineer	TBD	160	152	200	152	160	192	160	192	152	160	160	160	200	2032	\$ 152.90	\$ 310,697	
Lead Electrical, I&C and Commissioning	Dan Ryan	160	152	200	152	160	192	160	192	152	160	160	160	200	2032	\$ 180.99	\$ 367,763	
Mid-Level Project Engineer	TBD	160	152	200	152	160	192	160	192	152	160	160	160	200	2032	\$ 117.54	\$ 238,846	
Mid-Level Administrative Assistant	Linda Rockwood	160	152	200	152	160	192	160	192	152	160	160	160	200	2032	\$ 90.66	\$ 184,219	
Junior Administrative Assistant	Kathleen Drahos	160	152	200	152	160	192	160	192	152	160	160	160	200	2032	\$ 62.62	\$ 127,254	
Junior Inspector (Civil/Structural)	Frank Zmitrowitz	160	152	200	152	160	192	160	192	152	160	160	160	200	2032	\$ 94.64	\$ 192,312	
Scheduler	Fred Grigni	40	40	40	40	40	40	40	40	40	40	40	40	40	480	\$ 173.84	\$ 83,442	
Winstead Management Group																		
Junior Inspector (Mechanical)	TBD	160	152	200	152	160	192	160	192	152	160	160	160	200	2032	\$ 89.12	\$ 181,083	
Junior Inspector (Civil/Structural)	TBD	160	152	200	152	160	192	160	192	152	160	160	160	200	2032	\$ 89.12	\$ 181,083	
Junior Inspector (Electrical)	TBD	160	152	200	152	160	192	160	192	152	160	160	160	200	2032	\$ 89.12	\$ 181,083	

SUMMARY

POSITION	NAME	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Hours Total	Billing Rate	Total
		Jacobs Project Management Co.														
Project Manager	Doug Most	32	32	32	32	8	10	8	8	10	8	8	10	198	\$ 264.20	\$ 52,312
Senior Construction Manager	Jerry Nystrom	160	152	200	152	160	192	160	152	192	152	160	200	2032	\$ 217.60	\$ 442,169
Construction Manager (Demolition & Solids Contracts)	Johnnie Overton	160	152	200	152	160	192	0	0	0	0	0	0	1016	\$ 199.01	\$ 202,195
Construction Manager (Flood Wall & Other Projects)	Donal Barron	0	0	0	0	0	0	0	0	0	0	0	0	0	\$ 199.01	\$ -
Construction Manager (BAF)	TBD	160	152	200	152	160	192	160	152	0	0	0	0	1328	\$ 199.01	\$ 264,282
Lead Mechanical Engineer	TBD	160	152	200	152	160	192	160	152	0	0	0	0	1328	\$ 157.49	\$ 209,146
Lead Electrical, I&C and Commissioning	Dan Ryan	160	152	200	152	160	192	160	152	192	152	160	200	2032	\$ 186.42	\$ 378,796
Mid-Level Project Engineer	TBD	160	152	200	152	160	192	160	152	192	152	160	200	2032	\$ 121.07	\$ 246,012
Mid-Level Administrative Assistant	Linda Rockwood	160	152	200	152	160	192	160	152	192	152	160	200	2032	\$ 93.38	\$ 189,745
Junior Administrative Assistant	Kathleen Drahos	160	152	200	152	160	192	160	152	192	0	0	0	1328	\$ 64.50	\$ 85,661
Junior Inspector (Civil/Structural)	Frank Zmitrowitz	160	152	200	152	160	192	160	152	192	152	160	200	2032	\$ 97.48	\$ 198,081
Scheduler	Fred Grigni	40	40	40	40	40	40	40	40	0	0	0	0	320	\$ 179.05	\$ 57,297
Winstead Management Group																
Junior Inspector (Mechanical)	TBD	160	152	200	152	160	192	160	152	0	0	0	0	1328	\$ 91.79	\$ 121,896
Junior Inspector (Civil/Structural)	TBD	160	152	200	152	160	192	160	152	0	0	0	0	1328	\$ 91.79	\$ 121,896
Junior Inspector (Electrical)	TBD	160	152	200	152	160	192	160	152	0	0	0	0	1328	\$ 91.79	\$ 121,896

SUMMARY

POSITION	NAME	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Hours Total	Billing Rate	Total
		Jacobs Project Management Co.														
Project Manager	Doug Most	8	0	0	4	0	0	4	0	0	4	0	8	28	\$ 272.13	\$ 7,620
Senior Construction Manager	Jerry Nystrom	160	0	0	16	0	0	16	0	0	16	0	32	240	\$ 224.13	\$ 53,791
Construction Manager (Demolition & Solids Contracts)	Johnnie Overton	0	0	0	0	0	0	0	0	0	0	0	0	0	\$ 204.98	\$ -
Construction Manager (Flood Wall & Other Projects)	Donal Barron	0	0	0	0	0	0	0	0	0	0	0	0	0	\$ 204.98	\$ -
Construction Manager (BAF)	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0	\$ 204.98	\$ -
Lead Mechanical Engineer	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0	\$ 162.21	\$ -
Lead Electrical, I&C and Commissioning	Dan Ryan	160	0	0	8	0	0	8	0	0	8	0	16	200	\$ 192.01	\$ 38,402
Mid-Level Project Engineer	TBD	160	0	0	0	0	0	0	0	0	0	0	0	160	\$ 124.70	\$ 19,952
Mid-Level Administrative Assistant	Linda Rockwood	160	0	0	8	0	0	8	0	0	8	0	8	192	\$ 96.18	\$ 18,467
Junior Administrative Assistant	Kathleen Drahos	0	0	0	0	0	0	0	0	0	0	0	0	0	\$ 66.44	\$ -
Junior Inspector (Civil/Structural)	Frank Zmitrowitz	160	0	0	0	0	0	0	0	0	0	0	0	160	\$ 100.41	\$ 16,065
Scheduler	Fred Grigni	0	0	0	0	0	0	0	0	0	0	0	0	0	\$ 184.42	\$ -
Winstead Management Group																
Junior Inspector (Mechanical)	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0	\$ 94.54	\$ -
Junior Inspector (Civil/Structural)	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0	\$ 94.54	\$ -
Junior Inspector (Electrical)	TBD	0	0	0	0	0	0	0	0	0	0	0	0	0	\$ 94.54	\$ -

SUMMARY

POSITION	NAME	Grand Totals	
		Hours	Revenue
Jacobs Project Management Co.			
Project Manager	Doug Most	1,376	\$ 346,418
Senior Construction Manager	Jerry Nystrom	7,584	\$ 1,590,561
Construction Manager (Demolition & Solids Contracts)	Johnnie Overton	5,624	\$ 1,071,214
Construction Manager (Flood Wall & Other Projects)	Donal Barron	3,672	\$ 684,207
Construction Manager (BAF)	TBD	6,248	\$ 1,193,951
Lead Mechanical Engineer	TBD	5,392	\$ 821,491
Lead Electrical, I&C and Commissioning	Dan Ryan	7,272	\$ 1,308,514
Mid-Level Project Engineer	TBD	7,112	\$ 831,540
Mid-Level Administrative Assistant	Linda Rockwood	7,556	\$ 677,931
Junior Administrative Assistant	Kathleen Drahos	6,448	\$ 398,798
Junior Inspector (Civil/Structural)	Frank Zmitrowitz	7,504	\$ 704,500
Scheduler	Fred Grigni	1,600	\$ 274,185
Winstead Management Group			
Junior Inspector (Mechanical)	TBD	5,232	\$ 464,944
Junior Inspector (Civil/Structural)	TBD	6,248	\$ 550,691
Junior Inspector (Electrical)	TBD	4,568	\$ 407,495

Jacobs - Estimate To Complete \$ 9,903,309
 WMG - Estimate To Complete \$ 1,423,131
 Nautilus - Estimate To Complete \$ 35,000

Estimate To Complete \$ 11,361,440

Jacobs - Billed To Date \$ 439,615

WMG - Billed To Date \$ -

Nautilus - Billed To Date \$ -

Billed To Date \$ 439,615

Jacobs - Estimate At Completion \$ 10,342,924

WMG - Estimate At Completion \$ 1,423,131

Nautilus - Estimate At Completion \$ 35,000

Labor - Total Estimate At Completion \$ 11,801,055

Billable Other Direct Costs \$ -

Materials Testing \$ 1,500,000

Grand Total \$ 13,301,055

Previous Contract Amount \$ 10,700,544

Requested Increase \$ 2,600,511

Rounded \$ 2,600,000



Legislative Branch

RL Number: _____

Date Submitted: _____

City Clerk, City Hall, Binghamton, NY 13901 607-772-7005

REQUEST FOR LEGISLATION

Requests for Legislation (RLs) may be submitted to the City Clerk's Office for consideration at City Council Work Sessions. RLs generated from within City Hall departments must be submitted to the Mayor, Comptroller and Corporation Counsel for review before submission. RLs generated by citizens may be submitted directly to the City Clerk's Office.

Applicant Information

Request submitted by: Gary R. Holmes, P.E.
Title/Department: Engineering - Acting City Engineer
Contact Information: grholmes@cityofbinghamton.com

RL Information

Proposed Title: Amendment to Work Order No. 7 With GHD Consulting Services for the BAF Restoration and Rehabilitation Construction Phase at the BJCJSTP

Suggested Content: Amending Work Order No.7 with GHD Consulting Services for additional design services for the BAF Restoration and Rehabilitation Construction Phase as the BJCJSTP. The Amendment to Work Order No. 7 is \$1,707,000.00. The amount of \$1,280,250.00 is in budget line HX8150.500200.J11NN and \$426,750.00 is available in budget line HX8150.500200.J11FF.

Additional Information

- Does this RL concern grant funding? Yes No
- If 'Yes', is the required RL Grant Worksheet attached? Yes No
- Is additional information related to the RL attached? Yes No
- Is RL related to previously adopted legislation? Yes No

If 'Yes', please provide Permanent Ordinance/Resolution/Local Law number(s): _____

OFFICE USE ONLY					
Mayor:	<u>[Signature]</u>				
Comptroller:	<u>[Signature]</u>				
Corporation Counsel:	<u>[Signature]</u>				
Finance <input type="checkbox"/>	Planning <input type="checkbox"/>	MPA <input type="checkbox"/>	PW/Parks <input type="checkbox"/>	Employees <input type="checkbox"/>	Rules/Special Studies <input type="checkbox"/>



Work Order-07 Amendment 1

Plant Restoration and Rehabilitation Construction Phase Services

I. DESCRIPTION

The purpose of this Work Order (Work Order-07 Amendment 1) is to provide ADDITIONAL construction phase services for the restoration and rehabilitation of the Binghamton Johnson City Joint Sewage Treatment Plant. The goal of the restoration and rehabilitation is to provide a BAF treatment system with adequate treatment capacity to accommodate the original design flows and loads established for the original BAF upgrade in the 2000s. This work includes, but is not limited to, review of contractor's submittals, full-time engineer representation, and judgment of acceptability of the Work.

The following Scope of Services is adapted from the Engineers Joint Construction Documents Council (EJCDC), Document No. E-500, "Agreement between Owner and Engineer for Professional Services, Exhibit A".

The original Scope of Services for Work Order was based upon the following:

1. On-Site Construction Duration of 33-months.
2. Five (5) Bid Packages with multiple prime contracts each.

Work Order -07 Amendment 1 is based on:

1. Increase from 33 months to 45 months (one more year of construction)
2. Five (5) Bid Packages with multiple prime contracts each.
3. An increase in construction value of 25 percent requiring an increase in site visits and submittal review and scope of O&M manuals.
4. Produce Conformed Set for BAF Restoration and Rehabilitation Construction Bid Package for convenience of construction management.
5. Maintenance of construction video by vendor

II. SCOPE OF SERVICES

A1. Bidding Phase

- (1) Prepare one (1) set of Construction Contract (bidding) Documents for submission to the City of Binghamton for distribution by the City to prospective bidders. Documents will also be submitted in a Portable Document Format (PDF) for advertisement and reproduction purposes.
- (2) During the bidding period, attend one pre-bid meeting and answer planholder's questions and issue addenda to planholders as appropriate to clarify, correct, or change bidding documents.
- (3) Attend the Bid opening.
- (4) Consult with Construction Administrator in regards to bid results.
- (5) Assist Construction Administrator with Canvass of Bids.

A2. Construction Phase (Professional Support Services)

- (1) Pre-Construction Conference: Participate in a pre-construction conference prior to commencement of Work at the Site as lead by Construction Administrator.
- (2) Original Documents: If requested by Owner to do so, maintain and safeguard during the Construction Phase at least one original printed record version of the Construction Contract



Work Order-07 Amendment 1

Plant Restoration and Rehabilitation Construction Phase Services

Documents, including Drawings and Specifications signed and sealed by Engineer and other design professionals in accordance with applicable Laws and Regulations. Throughout the Construction Phase, make such original printed record version of the Construction Contract Documents available to Contractor and Owner for review.

- (3) Produce Conformed Set for BAF Restoration and Rehabilitation Construction Bid Package for convenience of construction management.
- (4) Visits to Site and Observation of Construction: In connection with observations of Contractor's Work while it is in progress:
 - (a) Provide one (1) full-time representative of the Engineer, whose main function is to interpret the intent of the design as set forth in the Construction Contract Documents and liaison between the Engineer and the Construction Administrator with respect to Construction Contract Document interpretation.
 - (b) Make visits to the Site at intervals appropriate to the various stages of construction, as Engineer deems necessary, to observe as an experienced and qualified design professional the progress of Contractor's executed Work. Such visits and observations by Engineer, and the Resident Project Representative, if any, are not intended to be exhaustive or to extend to every aspect of the Work or to involve detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in this Agreement and the Construction Contract Documents, but rather are to be limited to spot checking, selective sampling, and similar methods of general observation of the Work based on Engineer's exercise of professional judgment, as assisted by the Resident Project Representative, if any. Based on information obtained during such visits and observations, Engineer will determine in general if the Work is proceeding in accordance with the Construction Contract Documents, and Engineer shall keep Owner informed of the progress of the Work.
 - (c) The purpose of Engineer's visits to the Site, and representation by the Resident Project Representative, if any, at the Site, will be to enable Engineer to better carry out the duties and responsibilities assigned to and undertaken by Engineer during the Construction Phase, and, in addition, by the exercise of Engineer's efforts as an experienced and qualified design professional, to provide for Owner a greater degree of confidence that the completed Work will conform in general to the Construction Contract Documents and that Contractor has implemented and maintained the integrity of the design concept of the completed Project as a functioning whole as indicated in the Construction Contract Documents. Engineer shall not, during such visits or as a result of such observations of the Work, supervise, direct, or have control over the Work, nor shall Engineer have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected or used by any Constructor, for security or safety at the Site, for safety precautions and programs incident to any Constructor's work in progress, for the coordination of the Constructors' work or schedules, nor for any failure of any Constructor to comply with Laws and Regulations applicable to furnishing and performing of its work. Accordingly, Engineer neither guarantees the performance of any Constructor nor assumes responsibility for any Constructor's failure to furnish or perform the Work, or any portion of the Work, in accordance with the Construction Contract Documents.
- (5) Defective Work: In consultation with the Construction Administrator, recommend the rejection of Work if, on the basis of Engineer's observations, Engineer believes that such Work is defective under the terms and standards set forth in the Construction Contract Documents.



Work Order-07 Amendment 1

Plant Restoration and Rehabilitation Construction Phase Services

Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer will not make a recommendation concerning the Change Proposal. (b) Provide information or data to Owner regarding engineering or technical matters pertaining to Claims.

- (14) **Substantial Completion:** Promptly after notice from Construction Administrator that Contractor considers the entire Work ready for its intended use, in company with Owner, Construction Administrator and Contractor, visit the Site to review the Work and determine the status of completion.
- (15) **Final Notice of Acceptability of the Work:** Conduct a final visit to the Project to determine if the Work is complete and acceptable so that Engineer may recommend, in writing, final payment to Contractor.
- (16) **Standards for Certain Construction-Phase Decisions:** Engineer will render decisions regarding the requirements of the Construction Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth in the Construction Contract for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.
- (17) **Duration of Construction Phase:** The Construction Phase will commence with the execution of the first Construction Contract for the Project or any part thereof and will terminate upon written recommendation by Engineer for final payment to Contractors. If the Project involves more than one prime contract, then Construction Phase services may be rendered at different times in respect to the separate contracts. Engineer shall be entitled to an equitable increase in compensation if Construction Phase services (including Resident Project Representative services, if any) are required after the original date for completion and readiness for final payment of Contractor as set forth in the Construction Contract.

A3. Post-Construction Phase

- (1) Together with Owner and Construction Administrator, visit the Project to observe any apparent defects in the Work, make recommendations as to replacement or correction of defective Work, if any, or the need to repair of any damage to the Site or adjacent areas, and assist Owner in consultations and discussions with Construction Administrator concerning correction of any such defective Work and any needed repairs.
- (2) Together with Owner and Construction Administrator, visit the Project within one month before the end of the Construction Contract's correction period to ascertain whether any portion of the Work or the repair of any damage to the Site or adjacent areas is defective and therefore subject to correction by Contractor.
- (3) The Post-Construction Phase services may commence during the Construction Phase and, if not otherwise modified in this Agreement, will terminate twelve months after the commencement of the Construction Contract's correction period.
- (4) Prepare an operations & maintenance manual for the new facilities at the Binghamton Johnson City Joint Sewage Treatment Plant. The manual will be subdivided by major process equipment. At a minimum the manual will include:



Work Order-07 Amendment 1

Plant Restoration and Rehabilitation Construction Phase Services

Provide recommendations to Owner regarding whether Contractor should correct such Work or remove and replace such Work, or whether Owner should consider accepting such Work as provided in the Construction Contract Documents.

- (6) **Compatibility with Design Concept:** If Engineer has express knowledge that a specific part of the Work that is not defective under the terms and standards set forth in the Construction Contract Documents is nonetheless not compatible with the design concept of the completed Project as a functioning whole, then inform Owner of such incompatibility, and provide recommendations for addressing such Work.
- (7) **Clarifications and Interpretations:** Accept from Contractor and Owner, via the Construction Administrator, submittal of all matters in question concerning the requirements of the Construction Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Construction Contract Documents. With reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Construction Contract Documents.
- (8) **Non-reviewable Matters:** If a submitted matter in question concerns the Engineer's performance of its duties and obligations, or terms and conditions of the Construction Contract Documents that do not involve (1) the performance or acceptability of the Work under the Construction Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Construction Administrator that Engineer will not provide a decision or interpretation.
- (9) **Field Orders:** Subject to any limitations in the Construction Contract Documents, Engineer may approve Field Orders, prepared by the Construction Administrator, requiring minor changes in the Work.
- (10) **Change Orders and Work Change Directives:** Recommend Change Orders and Work Change Directives to Owner, as appropriate, and prepare Change Orders and Work Change Directives as required.
- (11) **Shop Drawings, Samples, and Other Submittals:** Review and approve or take other appropriate action with respect to Shop Drawings, Samples, and other required Contractor submittals, but only for conformance with the information given in the Construction Contract Documents and compatibility with the design concept of the completed Project as a functioning whole as indicated by the Construction Contract Documents. Such reviews and approvals or other action will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions and programs incident thereto. Engineer shall meet any Contractor's submittal schedule that Engineer has accepted.
- (12) **Substitutes and "Or-equal":** Evaluate and determine the acceptability of substitute or "or-equal" materials and equipment proposed by Contractor, but subject to the provisions of Paragraph D.3 of this Scope of Services.
- (13) **Change Proposals and Claims:** (a) Review and respond to Change Proposals. Provide the Owner and Construction Administrator a technical and contractual review of each duly submitted Change Proposal from Contractor and, within 14 calendar days after receipt of the Contractor's supporting data, provide the Owner and Construction Administrator the Engineer's recommendation of the acceptability of the Change. Such actions shall be in writing. If the Change Proposal does not involve the design (as set forth in the Drawings,



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Plant Restoration and Rehabilitation Construction Phase Services

- (a) Flow schematics.
 - (b) "Nameplate" design data including number of units, capacity, motor horsepower, manufacturer/model, etc.
 - (c) Operation and control descriptions (functional description of major equipment in narrative format). Descriptions will include functionality in the manual and/or automatic modes, as applicable.
 - (d) Startup procedures.
 - (e) Routine troubleshooting.
 - (f) Alarms and remedial actions.
 - (g) Other operations/maintenance information necessary for individual equipment items necessary for WPCP operators.
 - (h) Provide this information, electronically, to the Construction Administrator to compile and produce the hard copy and electronic copy of the operations & maintenance manual.
- (5) Prepare Record Drawings, and furnish such Record Drawings to Construction Administrator.
 - (6) Assist the Owner during the one-year warranty period following issuance of substantial completion to the Contractor. These services may include but are not limited to:
 - (a) Coordinating with the Construction Administrator and Contractor and/or equipment suppliers for any operational or maintenance issues that arise during the one-year warranty period. Coordinate with the Construction Administrator to ensure proper remedial action is provided by the Contractor.

A4. Contingency for Project

- (1) A contingency fund shall be created to pay for the continuation of engineering services during delays of any kind to the project schedule. This contingency fund will be administered by the Owner. The contingency fund shall be sufficient to cover engineering services for three months.

A5. Additional Services Requiring Owner's Written Authorization

- (1) If authorized in writing by Owner, Engineer shall provide Additional Services of the types listed below. These services are not included as part of Basic Services and will be paid for by Owner.
- (2) Contractor Claims – When a Contractor disagrees the Owner's final determination on disputed work or proposed contract modifications; the following services may be requested of the Engineer by the Owner as Additional Services, all in coordination with the Construction Administrator:
 - (a) Claims Analysis: The Engineer shall analyze the Contractor's claims for extension of time and cost impact, using the schedule reports and provide recommendations to the Construction Administrator.



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Plant Restoration and Rehabilitation Construction Phase Services

- (b) Evaluate Claim Cost: The Engineer will review and provide comment on Construction Administrator's alternate estimates based on varying scenarios of the claim cause.
 - (c) Legal Advice: The Engineer shall work with the Owner's attorney in a joint defense with the Owner and Construction Administrator in the analysis of contract determinations, negotiation strategies, communications and resolution.
 - (d) Contractor Claims Negotiations: The Engineer will make a recommendation to the Construction Administrator concerning settlement or other appropriate action.
- (3) Preparation of applications and supporting documents (in addition to those furnished under Basic Services) for private or governmental grants, loans, or advances in connection with the Project; preparation or review of environmental assessments and impact statements; review and evaluation of the effects on the design requirements for the Project of any such statements and documents prepared by others; and assistance in obtaining approvals of authorities having jurisdiction over the anticipated environmental impact of the Project.
- (4) Services to make measured drawings of existing conditions or facilities, to conduct tests or investigations of existing conditions or facilities, or to verify the accuracy of drawings or other information furnished by Owner or others.
- (5) Services resulting from significant changes in the scope, extent, or character of the portions of the Project designed or specified by Engineer, or the Project's design requirements, including, but not limited to, changes in size, complexity, Owner's schedule, character of construction, or method of financing; and revising previously accepted studies, reports, Drawings, Specifications, or Construction Contract Documents when such revisions are required by changes in Laws and Regulations enacted subsequent to the Effective Date or are due to any other causes beyond Engineer's control.
- (6) Services resulting from Owner's request to evaluate additional Study and Report Phase alternative solutions beyond those agreed to in this Scope of Services.
- (7) Services required as a result of Owner's providing incomplete or incorrect Project information to Engineer.
- (8) Providing renderings or models for Owner's use, including services in support of building information modeling or civil integrated management.
- (9) Undertaking investigations and studies including, but not limited to:
- (a) detailed consideration of operations, maintenance, and overhead expenses;
 - (b) the preparation of feasibility studies (such as those that include projections of output capacity, utility project rates, project market demand, or project revenues) and cash flow analyses, provided that such services are based on the engineering and technical aspects of the Project, and do not include rendering advice regarding municipal financial products or the issuance of municipal securities;
 - (c) preparation of appraisals;
 - (d) evaluating processes available for licensing, and assisting Owner in obtaining process licensing;



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Plant Restoration and Rehabilitation Construction Phase Services

- (e) detailed quantity surveys of materials, equipment, and labor; and
 - (f) audits or inventories required in connection with construction performed or furnished by Owner.
- (10) Furnishing services of Consultants for other than Basic Services.
- (11) Providing the following services:
- (a) Services attributable to more prime construction contracts than specified.
 - (b) Services to arrange for performance of construction services for Owner by contractors other than the principal prime Contractor, and administering Owner's contract for such services.
- (12) Services during out-of-town travel required of Engineer, other than for visits to the Site or Owner's office as required elsewhere in this Scope of Services.
- (13) Preparing for, coordinating with, participating in and responding to structured independent review processes, including, but not limited to, construction management, cost estimating, project peer review, value engineering, and constructibility review requested by Owner; and performing or furnishing services required to revise studies, reports, Drawings, Specifications, or other documents as a result of such review processes.
- (14) Preparing additional bidding-related documents (or requests for proposals or other construction procurement documents) or Construction Contract Documents for alternate bids or cost estimates requested by Owner for the Work or a portion thereof.
- (15) Assistance in connection with bid protests, rebidding, or renegotiating contracts for construction, materials, equipment, or services.
- (16) Preparing conformed Construction Contract Documents that incorporate and integrate the content of all Addenda and any amendments negotiated by Owner and Contractor.
- (17) Providing Construction Phase services beyond the original date for completion and readiness for final payment of Contractor, but only if such services increase the total quantity of services to be performed in the Construction Phase, rather than merely shifting performance of such services to a later date.
- (18) Supplementing Record Drawings with information regarding the completed Project, Site, and immediately adjacent areas obtained from field observations, Owner, utility companies, and other reliable sources.
- (19) Conducting surveys, investigations, and field measurements to verify the accuracy of Record Drawing content obtained from Contractor, Owner, utility companies, and other sources; revise and supplement Record Drawings as needed.
- (20) Preparation of operation, maintenance, and staffing manuals.
- (21) Protracted or extensive assistance in refining and adjusting of Project equipment and systems (such as initial startup, testing, and balancing).



Work Order-07 Amendment 1

Plant Restoration and Rehabilitation Construction Phase Services

- (22) Assistance to Owner in training Owner's staff to operate and maintain Project equipment and systems.
- (23) Assistance to Owner in developing systems and procedures for (a) control of the operation and maintenance of Project equipment and systems, and (b) related recordkeeping.
- (24) Preparing to serve or serving as a consultant or witness for Owner in any litigation, arbitration, lien or bond claim, or other legal or administrative proceeding involving the Project.
- (25) Overtime work requiring higher than regular rates.
- (26) Providing construction surveys and staking to enable Contractor to perform its work other than as required under Paragraph A.8 of this Scope of Services; any type of property surveys or related engineering services needed for the transfer of interests in real property; and providing other special field surveys.
- (27) Providing more extensive services required to enable Engineer to issue notices or certifications requested by Owner.
- (28) Extensive services required during any correction period, or with respect to monitoring Contractor's compliance with warranties and guarantees called for in the Construction Contract (except as agreed to under Basic Services).
- (29) Other additional services performed or furnished by Engineer not otherwise provided for in this Agreement.

A6. Additional Services Not Requiring Owner's Written Authorization

- (1) Engineer shall advise Owner that Engineer is commencing to perform or furnish the Additional Services of the types listed below. For such Additional Services, Engineer need not request or obtain specific advance written authorization from Owner. Engineer shall cease performing or furnishing such Additional Services upon receipt of written notice to cease from Owner.
- (2) Services in connection with Work Change Directives and Change Orders to reflect changes requested by Owner.
- (3) Services in making revisions to Drawings and Specifications occasioned by the acceptance of substitute materials or equipment other than "or equal" items; services after the award of the Construction Contract in evaluating and determining the acceptability of a proposed "or equal" or substitution which is found to be inappropriate for the Project; evaluation and determination of an excessive number of proposed "or equals" or substitutions, whether proposed before or after award of the Construction Contract.
- (4) Services resulting from significant delays, changes, or price increases occurring as a direct or indirect result of materials, equipment, or energy shortages.
- (5) Additional or extended services arising from (a) the presence at the Site of any Constituent of Concern or items of historical or cultural significance, (b) emergencies or acts of God endangering the Work, (c) damage to the Work by fire or other causes during construction, (d) a significant amount of defective, neglected, or delayed Work, (e) acceleration of the



Work Order-07 Amendment 1

Plant Restoration and Rehabilitation Construction Phase Services

progress schedule involving services beyond normal working hours, or (f) default by Contractor.

- (6) Services (other than Basic Services during the Post-Construction Phase) in connection with any partial utilization of the Work by Owner prior to Substantial Completion.
- (7) Evaluating unreasonable or frivolous requests for interpretation or information (RFIs), Change Proposals, or other demands from Contractor or others in connection with the Work, or an excessive number of RFIs, Change Proposals, or demands.
- (8) Reviewing a Shop Drawing or other Contractor submittal more than three times, as a result of repeated inadequate submissions by Contractor.
- (9) While at the Site, compliance by Engineer and its staff with those terms of Owner's or Contractor's safety program provided to Engineer subsequent to the Effective Date that exceed those normally required of engineering personnel by federal, State, or local safety authorities for similar construction sites.

III. DELIVERABLES

- (1) Conformed Set drawings
- (2) Record drawings
- (3) Electronic operations and maintenance manual
- (4) Report that indicates that the work was completed substantially in accordance with Construction Contract Documents and/or identification of deficiencies.
- (5) Storage of construction video (camera installations by Construction Administrator)

IV. KEY PERSONNEL

Representative of Owner	Engineering Team
Gary Holmes	Michael Tamblin
Cathy Young	Howard LaFever
	Bruce Munn
	John LaGorga
	John Revette
	Dan Lalande
	Lauren Scanlan

V. SCHEDULE

Task	Completion Date
Bid Phase	11/20/2015
Substantial Completion	3/30/2019
Final Completion	5/30/2019



Work Order-07 Amendment 1

Plant Restoration and Rehabilitation Construction Phase Services

VI. COMPENSATION

- A. The Owner will be billed for actual labor hours charged at the billing rates contained in Attachment A, plus direct project expenses (e.g., identifiable reproduction costs, shipping charges). The compensation for the Scope of Services outlined in Section II is estimated to be \$1,707,000 as indicated in the Fee Schedule in Table 1.
- B. Payments for the work will be due monthly on the basis of statements submitted by GHD Consulting Services Inc. for the work performed during the period.
- C. Additional services beyond the Scope of Services will be considered extra work and will necessitate additional compensation.

VII. STANDARD TERMS AND CONDITIONS

The services described above will be completed as Work Order-07 Amendment 1 under the Terms and Conditions of the Agreement dated September 30, 2014 between GHD Consulting Services Inc. and the City of Binghamton.

VIII. NEW YORK CLEAN WATER STATE REVOLVING FUND CONTRACTING REQUIREMENTS

GHD Consulting Services Inc. will comply with the applicable provisions of "Required Terms for Project Contracts and Subcontracts" as defined in the NY State Revolving Fund Bid Packet for Non-construction Contracts and Service Providers, as prepared by the New York State Environmental Facilities Corporation. Refer to Attachment B.

This Work Order is duly executed between Consultant and Client by signature or City Resolution (Attachment C). Upon execution of this Work Order, Consultant is authorized to proceed with the work.

CONSULTANT:

CLIENT:

GHD CONSULTING SERVICES INC.

CITY OF BINGHAMTON

By: _____
Michael E. Tamblin, P.E.

By: _____

Title: _____
Principal

Title: _____

Date: _____

Date: _____



Work Order-07 Amendment 1

Plant Restoration and Rehabilitation Construction Phase Services

ATTACHMENT B

**Required Terms for Project Contracts and Subcontracts as defined in the NY State Revolving
Fund Bid Packet for Non-construction Contracts and Service Providers**



Work Order-07 Amendment 1

Plant Restoration and Rehabilitation Construction Phase Services

ATTACHMENT A RATE SCHEDULE

1.1 GHD CONSULTING SERVICES HOURLY RATES

CLIENT shall pay Compensation for labor based on CONSULTANT's rate schedule below. The Rate Schedule provided below shall be in effect through completion of this Work Order:

Labor Category	Hourly Rate
Project Director	\$220.00
Senior Technical Advisor	\$210.00
Technical Advisor	\$180.00
Senior Project Manager	\$170.00
Senior Engineer	\$160.00
Project Manager	\$140.00
Project Engineer II	\$130.00
Project Engineer I	\$120.00
Engineer or Scientist II	\$110.00
Engineer or Scientist I	\$100.00
Architect	\$110.00
Managing Designer	\$140.00
Senior Designer	\$110.00
Designer	\$100.00
Senior Drafter	\$85.00
Drafter	\$70.00
Technician	\$65.00
Construction Engineer Representative	\$110.00
Construction Project Representative	\$90.00
Secretarial/Word Processing	\$70.00

1.2 JL RICHARDS HOURLY RATES

CLIENT shall pay Compensation for labor based on CONSULTANT's rate schedule below. The Rate Schedule provided below shall be in effect through completion of this Work Order:

Labor Category	Hourly Rate
Project Director	\$190.00
Technical Advisor	\$185.00
Senior Project Manager	\$185.00
Senior Engineer	\$160.00
Project Manager	\$140.00
Project Engineer	\$120.00
Designer-Drafter	\$110.00
Secretarial/Word Processing	\$70.00



Work Order-07 Amendment 1

Plant Restoration and Rehabilitation Construction Phase Services

1.3 Non-salary expenses and outside services attributable to the Project

CLIENT shall pay Compensation for expenses based on CONSULTANT's rate schedule below. The Rate Schedule provided below shall be in effect through completion of this Work Order:

- 1.3.1 Actual receipted cost of accommodations (not to exceed \$120 US per night)
- 1.3.2 A per diem for meals and expenses: \$46 US (overnight) or \$28 (full day) or \$16 (partial day).
- 1.3.3 Mileage calculated at the federal reimbursement rate established by the U.S. General Services Administration for privately owned vehicles in effect on the date of the occurrence;
- 1.3.4 The identifiable costs of reproduction, printing, and binding and postage and shipping applicable to the Project;
- 1.3.5 The actual cost of outside services and subcontractors;
- 1.3.6 Actual receipted cost of field equipment rental supplied by a vendor for use on the Project;
- 1.3.7 The actual cost of permits and fees required for the project and paid by CONSULTANT;
- 1.3.8 The actual cost for additional insurance required by the Owner in excess of CONSULTANT's normal coverage's or limits;
- 1.3.9 The actual cost of premiums paid on overtime worked.



Work Order-07 Amendment 1 Construction Phase Services

WORK ORDER NO. - 7 Amendment 1
BJCJSTP Restoration and Re
Construction Phase Services

TABLE 1

October 1, 2015

Description	Project Management	Meetings Contract CA	Hrs	Billing Rate	Total Cost	Subtotals
<u>GHD Consulting Services</u>						
Project Director	80	40	162	\$220.00	\$35,640.00	
Senior Technical Advisor	80	40	138	\$210.00	\$28,980.00	
Technical Advisor	20	20	56	\$180.00	\$10,080.00	
Senior Project Manager	1000	500	500	\$170.00	\$255,000.00	
Senior Engineer			168	\$160.00	\$26,880.00	
Project Manager			0	\$140.00	\$0.00	
Project Engineer II	2000		360	\$130.00	\$306,800.00	
Project Engineer I		280	740	\$120.00	\$88,800.00	
Engineer/Scientist II		280	620	\$110.00	\$288,200.00	
Engineer/Scientist I			240	\$100.00	\$24,000.00	
Architect			88	\$110.00	\$9,680.00	
Managing Designer			0	\$140.00	\$0.00	
Senior Designer			190	\$110.00	\$20,900.00	
Designer			300	\$100.00	\$39,000.00	
Senior Drafter			590	\$85.00	\$50,150.00	
Drafter			0	\$70.00	\$0.00	
Technician			0	\$65.00	\$0.00	
Construction Project Representative			0	\$90.00	\$0.00	
Field Technician			0	\$60.00	\$0.00	
Secretarial/Word Processing			0	\$70.00	\$0.00	
						\$1,184,110.00
<u>J.L. Richards</u>						
Project Director	20	10	104	\$190.00	\$19,760.00	
Technical Advisor	20	10	44	\$185.00	\$8,140.00	
Senior Project Manager	5	5	37	\$185.00	\$6,845.00	
Senior Engineer	50	20	1015	\$160.00	\$162,400.00	
Project Manager			120	\$140.00	\$16,800.00	
Project Engineer		60	405	\$120.00	\$48,600.00	
Engineer/Scientist		60	350	\$70.00	\$24,500.00	
						\$287,045.00
Subtotal Labor	\$484,425.00	\$189,475.00	1317			\$ 1,471,155.00
Direct Expenses						
Travel	\$0.00	\$0.00			\$152,000.00	
Reproduction/Plotting	\$0.00	\$0.00			\$3,000.00	
Office Expenses	\$0.00	\$0.00			\$0.00	
Subcontractors	\$0.00	\$0.00			\$80,000.00	
Subtotal Disbursements	\$0.00	\$0.00				\$235,000.00
PROJECT TOTAL	\$484,425.00	\$189,475.00				\$1,706,155.00
						\$1,707,000.00



Legislative Branch

RL Number:	_____
Date Submitted:	_____

City Clerk, City Hall, Binghamton, NY 13901 607-772-7005

REQUEST FOR LEGISLATION

Requests for Legislation (RLs) may be submitted to the City Clerk's Office for consideration at City Council Work Sessions. RLs generated from within City Hall departments must be submitted to the Mayor, Comptroller and Corporation Counsel for review before submission. RLs generated by citizens may be submitted directly to the City Clerk's Office.

Applicant Information

Request submitted by: Gary R. Holmes, P.E.

Title/Department: Acting City Engineer, Engineering Dept.

Contact Information: grholmes@cityofbinghamton.com

RL Information

Proposed Title: A Resolution Granting an Easement to NYSEG for Installation of the Main

Service Line into the Terminal Pumping Station at the BJCJSTP

Suggested Content: A resolution granting an easement to NYSEG for installation of the Main Service

Line into the Terminal Pumping Station at the BJCJSTP.

Additional Information

Does this RL concern grant funding? Yes No

If 'Yes', is the required RL Grant Worksheet attached? Yes No

Is additional information related to the RL attached? Yes No

Is RL related to previously adopted legislation? Yes No

If 'Yes', please provide Permanent Ordinance/Resolution/Local Law number(s): _____

OFFICE USE ONLY	
Mayor:	<u></u>
Comptroller:	<u></u>
Corporation Counsel:	<u></u>
Finance <input type="checkbox"/>	Planning <input type="checkbox"/> MPA <input type="checkbox"/> PW/Parks <input type="checkbox"/> Employees <input type="checkbox"/> Rules/Special Studies <input type="checkbox"/>



September 25, 2015

Coughlin and Gerhart
Attn: Jeff Jacobs
99 Corporate Drive
Binghamton, NY 13905

RE: Electric Service for New Sewage Pump Station
3936 Gates Road
Town of Vestal, Broome County
Tax Map #: 143.17-1-3

Dear Mr. Jacobs:

I was referred to you by Brian Seachrist of the Binghamton City Legal Department with regard to the following. NYSEG has received request for electric service at the above referenced location. To comply with this request, NYSEG wishes to extend its facilities across the property as stated in the enclosed easement and shown on the enclosed sketch.

If acceptable, please have a person empowered by the Village of Johnson City Government sign the easement in the presence of a Notary Public.

I will be happy to pick the easement up at your earliest convenience to be forwarded on the Mr. Ken Frank for the City of Binghamton signature.

If you have any concerns, feel free to contact me at 607-762-6238. Thank you for your cooperation in this matter.

Sincerely,

Kristine A. Franz
IUSA Networks - NYSEG Right of Way

Enclosures

4425 Old Vestal Road, P.O. Box 3607, Binghamton, NY 13902-3607



An equal opportunity employer

EASEMENT

THIS INSTRUMENT WITNESSETH THAT CITY OF BINGHAMTON by

and VILLAGE OF JOHNSON CITY by

hereinafter called the Grantor(s), being the owner(s) of or having an interest in land situate in the TOWN of

VESTAL, County of BROOME, State of New York, fronting on the street or

highway known as GATES ROAD, bounded NORTHERLY

by lands of N/F SUSQUEHANNA RIVER and SOUTHERLY IN PART

by lands of N/F WALSH, for and in consideration of the sum of One and

No/100 Dollars (\$1.00), the receipt of which is hereby acknowledged, does hereby grant and release unto NEW YORK STATE ELECTRIC & GAS CORPORATION, a corporation organized under the laws of the State of New York, having an office at 18 Link Drive in the Town of Kirkwood, County of Broome, State of New York, hereinafter called the Grantee, its lessees, licensees, successors and assigns forever, a permanent easement and right of way, with the right, privilege and authority to construct, reconstruct, relocate, extend, operate, inspect, maintain, repair, replace, and at its pleasure, remove any poles or lines of poles, supporting structures, cables, crossarms, overhead and underground wires, guys, braces, communications facilities and other fixtures and appurtenances which the Grantee shall require now and from time to time for the transmission and/or distribution of electric current and/or for communication purposes, for public or private use, in, upon, over, under, and across said land and/or the highways abutting or running through said land.

The easement and right of way hereby granted and released is -30- feet in width throughout its extent, situate, lying and being as follows:

THE CENTERLINE OF SAID EASEMENT AND RIGHT OF WAY ENTERS GRANTOR'S LAND ON THE NORTH AS IT ABUTS THE SOUTHERLY LIMITS OF THE DEAD END ROAD OFF GATES ROAD AND THE SHORE EDGE OF THE SUSQUEHANNA RIVER; THENCE SAID EASEMENT AND RIGHT OF WAY EXTENDS IN A SOUTHERLY DIRECTION TO A POINT, SAID POINT BEING GRANTEE'S NEW POLE NUMBER 101-4 OF ELECTRIC LINE NUMBER 573, TO BE LOCATED ABOUT TWENTY SEVEN (27) FEET SOUTHERLY OF THE CENTERLINE OF SAID DEAD END ROAD AND ABOUT EIGHTEEN (18) FEET WESTERLY OF GRANTOR'S EASTERLY PROPERTY LINE; THENCE SAID EASEMENT AND RIGHT OF WAY CONTINUES SOUTHERLY TO GRANTEE'S NEW POLE NUMBER 101-5 OF SAID ELECTRIC LINE, TO BE LOCATED ABOUT ONE HUNDRED FOURTEEN FEET (114) FEET SOUTHERLY OF SAID DEAD END ROAD AND ABOUT TWENTY (20) FEET WESTERLY SAID PROPERTY LINE; THENCE SAID EASEMENT EXTENDS OVER, UPON AND ACROSS GRANTOR'S LANDS IN A WESTERLY DIRECTION TO GRANTEE'S NEW POLE NUMBER 17-2 OF GRANTEE'S EXISTING ELECTRIC LINE NUMBER 1913. TOGETHER WITH THE RIGHTS FOR NECESSARY GUYING FACILITIES AND SERVICE EXTENSIONS OUTSIDE THE STATED EASEMENT WIDTH.

THE GRANTEE, its successors and assigns, are hereby expressly given and granted the right to assign this easement and right of way, or any part thereof, or interest therein, and the same shall be divisible among two or more owners, as to any right or rights created hereunder, so that each assignee or owner shall have the full rights and privileges herein granted, to be owned and enjoyed either in common or severally.

TOGETHER with rights for free ingress and egress over the easement and right of way and other lands of the Grantor(s) for all of the above purposes and the right now and from time to time to trim, cut, burn, treat and/or remove by manual, mechanical and chemical means trees, brush, structures and other obstructions within said easement and right of way and such other trees adjacent to the right of way that, in the opinion of the Grantee, may interfere with the construction, operation and maintenance of its line or lines.

PROVIDED, however, that any damage (other than for trimming, cutting, treating, burning and/or removing trees, brush, structures and other obstructions as above provided) to the property of the Grantor(s), caused by the Grantee in the exercise of its rights under this instrument shall be borne by the Grantee.

RESERVING, however, to the Grantor(s) the rights to cultivate the ground between said poles, towers and supporting structures and beneath said wires and fixtures, and the right to cross and recross said easement and right of way provided that such use of said ground shall not interfere with, obstruct or endanger any rights granted as aforesaid and shall not disturb the grade of said ground as it now exists, and provided that no structure shall be erected, no trees shall be grown, cultivated or harvested, and no excavating, mining or blasting shall be undertaken within the limits of the easement and right of way without written consent of the Grantee. Grantor(s) in said use of said ground shall maintain a clearance of -15- feet or more from Grantee's aerial wires with vehicles, machinery and equipment.

This Instrument shall be binding on and inure to the benefit of the parties hereto and their respective heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF, the Grantor(s) ha hereunto set hand(s) and seal(s) this day of

IN PRESENCE OF:

(L.S.)

Address:

(L.S.)

Address:

(L.S.)

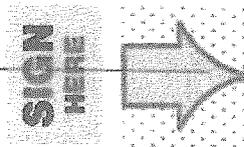
Address:

(L.S.)

Address:

(L.S.)

Address:



NYSEG

NEW YORK STATE
ELECTRIC & GAS CORP.
COUNTY: BROOME
TOWN: VESTAL

JOB TITLE: JC PUMP STATION
SEWAGE TREATMENT PLANT

DRAWN BY: RLR

PM NOTIFICATION # 10300068701

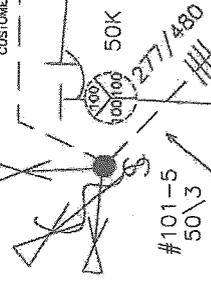
WORK ORDER #801000033501&801000033508

DSNY for pole 17-2 Line 1913 and poles 101-4 and 101-5 Line 573

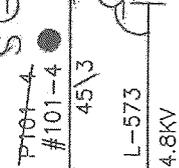
- 1) Address: 3925 Gates Rd, Town of Vestal
- 2) Cross Roads: Commerce rd
- 3) Where on property is excavation? 2 poles are 15' feet from pavement 3rd pole about 75' from pavement
- 4) Is the dig site within 25' off edge of pavement or in road? Yes and No
- 5) Dig site greater than 400' from roadside? No
- 6) Install two 45' poles and 1 50' with anchor

NUNJS... Time Warner Cable and Telephone fiber..

THIS WILL BE
CONNECTED AT A
LATER DATE
CUSTOMER OWNED U/G 277/480V



TEMPORARY
JOB TO COME
DOWN SOON
FOR CUSTOMER
POLE



GOUDEY 722 #101-3

FULLER HOLLOW 616

L-1913
#17

4.8KV



78' 4" O BAAAC
PRIMARY SERVICE
SOLID BLADES

CUSTOMER OWNED U/G
4.8KV

#17-2
45/3

REAL ESTATE

POLE 101-4 27' OFF CL
APPROX. 18' OFF E PL

POLE 101-5 114' OFF CL
APPROX. 20' OFF E PL

JC SEWAGE PUMP STATION

GATES RD

GATES RD

80KV

L-573
4.8KV

EASEMENT

Line 573 & 1913 POLES 17-2& 101-4, 101-5
Auth. 9400020264 Parcel No.
Area Cost Center No. RC21000034
Construction W.O. No. 801000033501 & 508

TO
NEW YORK STATE ELECTRIC
& GAS CORPORATION

Dated
STATE OF NEW YORK
COUNTY OF ss:

Recorded on the day of
at o'clock M.
in Book of Deeds at
Page and examined.
(Clerk)

Consideration on this document
is less than \$100.00

NOTARIZE

(Personal or Corporate Acknowledgment)

STATE OF NEW YORK
COUNTY OF ss:

On the day of
, before me, the undersigned, a Notary
Public in and for said State, personally appeared

personally known to me or proved to me on the
basis of satisfactory evidence to be the
individual(s) whose name(s) is (are) subscribed to
the within instrument and acknowledged to me that
he/she/they executed the same in his/her/their
capacity(ies), and that by his/her/their signature(s)
on the instrument, the individual(s) or the person*
upon behalf of which the individual(s) acted,
executed the instrument.

Notary Public

(Personal or Corporate Acknowledgment)

STATE OF NEW YORK
COUNTY OF ss:

On the day of
, before me, the undersigned, a Notary
Public in and for said State, personally appeared

personally known to me or proved to me on the
basis of satisfactory evidence to be the
individual(s) whose name(s) is (are) subscribed to
the within instrument and acknowledged to me that
he/she/they executed the same in his/her/their
capacity(ies), and that by his/her/their signature(s)
on the instrument, the individual(s) or the person*
upon behalf of which the individual(s) acted,
executed the instrument.

Notary Public

(Subscribing Witness Acknowledgment)

STATE OF NEW YORK
COUNTY OF ss:

On this day of
, before me personally came

the subscribing witness to the foregoing
instrument, with whom I am personally acquainted,
who being by me duly sworn, did depose and say
that he reside(s) at
in the
that he knew
to be the individual described in and who
executed the foregoing instrument that he, said
subscribing witness, was present and saw
execute the same; and that said witness, at
the same time, subscribed h name as witness
thereto.

Notary Public

TAX MAP NUMBER

Section 143.17 Block 1 Lot 3

RETURN TO
PROPERTY MANAGEMENT
RECORDS CENTER
NEW YORK STATE ELECTRIC & GAS CORP.
POST OFFICE BOX 5224
BINGHAMTON, NEW YORK 13902-5224

* "For the purposes of this section, the term
"person" means any corporation, joint stock
company, estate, general partnership (including
any registered limited liability partnership or foreign
limited liability partnership), limited liability
company (including a professional service limited
liability company), foreign limited liability company
(including a foreign professional service limited
liability company), joint venture, limited
partnership, natural person, attorney in fact, real
estate investment trust, business trust or other
trust custodians, nominee or any other individual
or entity in its own or any representative capacity."

* "For the purposes of this section, the term
"person" means any corporation, joint stock
company, estate, general partnership (including
any registered limited liability partnership or foreign
limited liability partnership), limited liability
company (including a professional service limited
liability company), foreign limited liability company
(including a foreign professional service limited
liability company), joint venture, limited
partnership, natural person, attorney in fact, real
estate investment trust, business trust or other
trust custodians, nominee or any other individual
or entity in its own or any representative capacity."



Legislative Branch

RL Number:	_____
Date Submitted:	_____

City Clerk, City Hall, Binghamton, NY 13901 607-772-7005

REQUEST FOR LEGISLATION

Requests for Legislation (RLs) may be submitted to the City Clerk's Office for consideration at City Council Work Sessions. RLs generated from within City Hall departments must be submitted to the Mayor, Comptroller and Corporation Counsel for review before submission. RLs generated by citizens may be submitted directly to the City Clerk's Office.

Applicant Information

Request submitted by: Gary R. Holmes, P.E.

Title/Department: Engineering - Acting City Engineer

Contact Information: grholmes@cityofbinghamton.com

RL Information

Proposed Title: Work Order No. 8 With GHD Consulting Services for Solids Handling, Outfall and Lab Renovation Final Design on the BAF Restore/Rehab at the BJCJSTP.

Suggested Content: Work Order No. 8 with GHD Consulting Services for Solids Handling, Outfall and Lab Renovation on the BAF Restore/Rehab at the BJCJSTP. The amount of Work Order No. 8 is \$1,551,000.00. The amount of \$1,163,250.00 in budget line HX8150.500200.J11NN and \$387,750.00 is available in budget line HX8150.500200.J11FF.

Additional Information

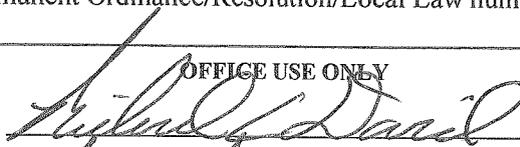
Does this RL concern grant funding? Yes No

If 'Yes', is the required RL Grant Worksheet attached? Yes No

Is additional information related to the RL attached? Yes No

Is RL related to previously adopted legislation? Yes No

If 'Yes', please provide Permanent Ordinance/Resolution/Local Law number(s): _____

OFFICE USE ONLY	
Mayor:	<u></u>
Comptroller:	<u></u>
Corporation Counsel:	<u></u>
Finance <input type="checkbox"/>	Planning <input type="checkbox"/> MPA <input type="checkbox"/> PW/Parks <input type="checkbox"/> Employees <input type="checkbox"/> Rules/Special Studies <input type="checkbox"/>



Work Order-08

Solids Handling, Outfall and Lab Renovation Final Design

I. DESCRIPTION

An engineering evaluation of the Binghamton Johnson City Joint Sewage Treatment Plant (BJCJSTP) is currently being completed for the solids handling process, the plant outfall and renovating the on-site laboratory. Based on preliminary findings of these evaluations the solids handling process requires a significant restoration and upgrade, and the plant outfall requires replacement in-kind and modifications to the river near the outfall.

A general summary of work for the solids handling process includes:

- Develop Emergency Solids Handling Plan
- Restoration of Digester No. 3
- New Dual Membrane Covers For Existing Digesters
- Replace Existing Digested Sludge Pumps and Grinders (update previous GHD design)
- Replace Sludge Heat Exchangers Hx-1 and Hx-2 (update previous GHD design)
- Replace/Service Equipment In Existing Digester Building (update previous GHD design)
- Digester Gas Treatment and Energy Recovery Building
- Digester Gas Treatment and Energy Recovery Equipment
- Sludge Thickener Building
- Sludge Thickener Equipment
- New Digester Sludge Feed Pumps and Grinders
- Replace One Dewatering Centrifuge
- Reconfiguration of Sludge Discharge Conveyors
- Replace Post-Lime Sludge Stabilization System

A general summary of work for the plant outfall includes:

- Removal of Gravel Bar
- In-Stream Deflectors
- River Modeling
- Wetland Delineation and Threatened/Endangered Species Evaluation
- Outfall Design
- Permit Preparation

A general summary of work for the laboratory renovation includes:

- Renovate existing 60-ft by 25-ft administration/laboratory area in Building 10 as a new laboratory
- Demolish and rebuild of interior walls. Exterior walls to remain the same
- Provide new doors and windows
- Provide new roof

II. SCOPE OF SERVICES FOR FINAL DESIGN

A. Solids Handling Design

1. Digesters No. 1 and No. 2
 - a. Rehabilitate existing digester by completing non-structural concrete repairs.
 - b. Install new dual-membrane digester covers
 - c. Construct digester overflow boxes to allow digesters to operate at constant level
2. Digester No. 3
 - a. Rehabilitate existing digester by sealing cracks and applying waterproofing sealing coating and completing non-structural concrete repairs.
 - b. Install new dual membrane digester cover



Work Order-08 Solids Handling, Outfall and Lab Renovation Final Design

3. Digester Building
 - a. Replace mechanical and electrical equipment, instrumentation and controls that were damaged by flooding that occurred in October 2011.
 - b. Replace existing ductile iron piping installed for digester gas service with welded stainless steel piping
4. Biogas Treatment and Energy Recovery System
 - a. New skid-mounted system designed for treatment and compression of digester gas. Gas treatment will include removal of particulate matter, moisture, hydrogen sulfide, and siloxanes.
 - b. Three new 65 kW integrated combined heat and power (CHP) microturbine modules
5. Sludge Thickening Facilities for Separate Thickening of Sludge from Stage 1 and Stage 2 Biological Wastewater Filter Systems
 - a. Two new thickened sludge blending tanks. Tanks will be of cast-in-place reinforced concrete design and will be equipped with covers and ventilated to existing, on-site odor control facilities
 - b. New sludge pumps and grinders
6. New Building for Sludge Thickeners and Energy Recovery
7. Post Lime Sludge Stabilization Facilities
 - a. Replace existing equipment, instrumentation and controls, including silo for bulk storage of hydrated lime, bin activator and lime feed screw, lime-sludge mixer and associated instrumentation and controls.
8. Centrifuge
 - a. Replace existing Centrifuge model 505
9. Sludge Discharge Conveyors
 - a. Remove existing sludge screw auger system. Install two new screw augers, one each for Centrifuge No. 1 and Centrifuge No. 2. Install one new sludge pump for Centrifuge No. 1 and Centrifuge No. 2. Install one new sludge pump for Centrifuge No. 3. Connect to Post Lime Sludge Stabilization Facilities
10. Site-Civil grading and yard piping
11. Structural and architectural design for the facilities
12. Electrical design for the facilities
13. Instrumentation design for the facilities. Equipment will be PLC based and "SCADA ready," for integration into the existing plant-wide SCADA network
14. HVAC design for the facilities. The building will be in accordance with applicable codes (10-States Standards and NFPA 820)
15. Meetings
 - a. Four general client meetings
 - b. two regulatory meetings
 - c. three design review meetings (60%, 90% and 100%)

B. Plant Outfall Design

1. Field Reconnaissance
 - a) Two site visits
2. Bathymetric Survey
 - a. 550-ft x 650-ft
 - b. One survey before and one survey after gravel bar removal
3. Design of gravel bar removal
4. Design of in-stream deflectors
5. Design of in-river diffuser pipe
 - a. Replace diffuser pipe in-kind
6. Hydraulic Modeling
 - a. 2-dimensional



Work Order-08

Solids Handling, Outfall and Lab Renovation Final Design

- 7. Permitting
 - a. Wetland and stream delineation
 - b. RTE species habitat evaluation
 - c. Wetland and stream permitting (DEC and Army Corp, only)
- 8. Meetings
 - a. three general client meetings
 - b. two regulatory meetings
 - c. two design review meetings (60% and 100%)

C. Laboratory Renovation Design

- 1. Site Visit and Planning with Staff
 - a. One site and planning visit
 - b. Two design review meeting
- 2. Laboratory Design
 - a. 60-ft x 25-ft area (demo and new floor plans and elevations)
 - b. Interior wall structural analysis. Exterior walls to remain the same
 - c. HVAC and plumbing
 - d. Low voltage electrical
- 3. Roof, Doors and Windows
 - a. Replace existing roof and doors and windows of 60-ft x 25-ft structure

D. Other Services

- 1. Provide Project Management, including:
 - a) This task allows for the project planning, routine management, administration, and coordination of the work efforts for the final design activities. Included in this task is the appropriate coordination with the City, the Plant Staff and engineering team members, management of the project, monitoring of budget and schedule, and administrative assistance for NYSDEC and EFC.
- 2. This Work Order does not include bidding and construction phase services; the fees for these services will be presented in amendment to this Work Order upon completion of the final design when the schedule and scope can be better defined.

III. DELIVERABLES

- A. Two Work Plans: (1) Solids Handling and (2) Plant Outfall
- B. 30 Percent, 60 Percent and 100 Percent Solids Handling Design Bid Documents
- C. 60 Percent and 100 Percent Plant Outfall Design Bid Documents
- D. Plant Outfall Permitting Documents as City as Applicant

IV. KEY PERSONNEL

Representative of Owner	Engineering Team
Gary Holmes	Michael Tamblin
Cathy Young	Howard LaFever
	Bruce Munn
	John LaGorga
	John Revette
	Brain Swift
	Jeff Daniel
	George Fowler



Work Order-08

Solids Handling, Outfall and Lab Renovation Final Design

V. SCHEDULE

Task	Completion Date
Solids Handling 100 Percent Design Bid Documents	360 days from Notice to Proceed
Plant Outfall Permit Documents	90 days from Notice to Proceed
Plant Outfall 100 Percent Design Bid Documents	180 days from Notice to Proceed

VI. COMPENSATION

- A. The Owner will be billed for actual labor hours charged at the billing rates contained in Attachment A, plus direct project expenses (e.g., identifiable reproduction costs, shipping charges). The compensation for the Scope of Services outlined in Section II is estimated to be \$1,551,000, as indicated in the Fee Schedule in Table 1.
- B. Payments for the work will be due monthly on the basis of statements submitted by GHD Consulting Services Inc. for the work performed during the period.
- C. Additional services beyond the Scope of Services will be considered extra work and will necessitate additional compensation.

VII. STANDARD TERMS AND CONDITIONS

The services described above will be completed as Work Order-08 under the Terms and Conditions of the Agreement dated September 30, 2014 between GHD Consulting Services Inc. and the City of Binghamton.

VIII. NEW YORK CLEAN WATER STATE REVOLVING FUND CONTRACTING REQUIREMENTS

GHD Consulting Services Inc. will comply with the applicable provisions of "Required Terms for Project Contracts and Subcontracts" as defined in the NY State Revolving Fund Bid Packet for Non-construction Contracts and Service Providers, as prepared by the New York State Environmental Facilities Corporation. Refer to Attachment B.

This Work Order is duly executed between Consultant and Client by signature or City Resolution (Attachment C). Upon execution of this Work Order, Consultant is authorized to proceed with the work.

CONSULTANT:

CLIENT:

GHD CONSULTING SERVICES INC.

CITY OF BINGHAMTON

By: _____
Michael E. Tamblin, P.E.

By: _____

Title: _____
Principal

Title: _____

Date: _____

Date: _____



Work Order-08

Solids Handling, Outfall and Lab Renovation Final Design

ATTACHMENT A RATE SCHEDULE

1.1 GHD CONSULTING SERVICES HOURLY RATES

CLIENT shall pay Compensation for labor based on CONSULTANT's rate schedule below. The Rate Schedule provided below shall be in effect through completion of this Work Order:

Labor Category	Hourly Rate
Project Director	\$220.00
Senior Technical Advisor	\$210.00
Technical Advisor	\$180.00
Senior Project Manager	\$170.00
Senior Engineer	\$160.00
Project Manager	\$140.00
Project Engineer II	\$130.00
Project Engineer I	\$120.00
Engineer or Scientist II	\$110.00
Engineer or Scientist I	\$100.00
Architect	\$110.00
Managing Designer	\$140.00
Senior Designer	\$110.00
Designer	\$100.00
Senior Drafter	\$85.00
Drafter	\$70.00
Technician	\$65.00
Construction Project Representative	\$90.00
Field Technician	\$60.00
Secretarial/Word Processing	\$70.00

1.2 JL RICHARDS HOURLY RATES

CLIENT shall pay Compensation for labor based on CONSULTANT's rate schedule below. The Rate Schedule provided below shall be in effect through completion of this Work Order:

Labor Category	Hourly Rate
Project Director	\$190.00
Technical Advisor	\$185.00
Senior Project Manager	\$185.00
Senior Engineer	\$160.00
Project Manager	\$140.00
Project Engineer	\$120.00
Designer-Drafter	\$110.00
Secretarial/Word Processing	\$70.00



Work Order-08

Solids Handling, Outfall and Lab Renovation Final Design

1.3 Non-salary expenses and outside services attributable to the Project

CLIENT shall pay Compensation for expenses based on CONSULTANT's rate schedule below. The Rate Schedule provided below shall be in effect through completion of this Work Order:

- 1.3.1 Actual receipted cost of accommodations (not to exceed \$120 US per night)
- 1.3.2 A per diem for meals and expenses: \$46 US (overnight) or \$28 (full day) or \$16 (partial day).
- 1.3.3 Mileage calculated at the federal reimbursement rate established by the U.S. General Services Administration for privately owned vehicles in effect on the date of the occurrence;
- 1.3.4 The identifiable costs of reproduction, printing, and binding and postage and shipping applicable to the Project;
- 1.3.5 The actual cost of outside services and subcontractors;
- 1.3.6 Actual receipted cost of field equipment rental supplied by a vendor for use on the Project;
- 1.3.7 The actual cost of permits and fees required for the project and paid by CONSULTANT;
- 1.3.8 The actual cost for additional insurance required by the Owner in excess of CONSULTANT's normal coverage's or limits;
- 1.3.9 The actual cost of premiums paid on overtime worked.



Work Order-08
Solids Handling, Outfall and Lab Renovation Final Design

ATTACHMENT B
**Required Terms for Project Contracts and Subcontracts as defined in the NY State Revolving
Fund Bid Packet for Non-construction Contracts and Service Providers**



Work Order-08

Solids Handling, Outfall and Lab Renovation Final Design

WORK ORDER NO. - 8
October 1, 2015

Fee Estimate
Solids Handling and
Plant Outfall Final Design

TABLE 1

Description	Solids Handling	Plant Outfall	Renovate Laboratory	QA/QC, Management, Meetings, EFC	Total Hrs	Billing Rate	Total Cost	Subtotals
GHD Consulting Services								
Project Director	120	4	4	40	168	\$220.00	\$36,960.00	
Senior Technical Advisor	160	60	4	40	264	\$210.00	\$55,440.00	
Technical Advisor	160	80	4		244	\$180.00	\$43,920.00	
Senior Project Manager	160			250	410	\$170.00	\$69,700.00	
Senior Engineer	720			80	800	\$160.00	\$128,000.00	
Project Manager	240				240	\$140.00	\$33,600.00	
Project Engineer II	720	120	100	500	1440	\$130.00	\$187,200.00	
Project Engineer I	720				720	\$120.00	\$86,400.00	
Engineer/Scientist II	720	16			736	\$110.00	\$80,960.00	
Engineer/Scientist I	720	200	160	80	1160	\$100.00	\$116,000.00	
Architect	480		80		560	\$110.00	\$61,600.00	
Managing Designer	400		80		480	\$140.00	\$67,200.00	
Senior Designer	0				0	\$110.00	\$0.00	
Designer	1600				1600	\$100.00	\$160,000.00	
Senior Drafter	0				0	\$85.00	\$0.00	
Drafter	2400	80	80		2560	\$70.00	\$179,200.00	
Technician	0				0	\$65.00	\$0.00	
Construction Project Representative	0				0	\$90.00	\$0.00	
Field Technician	0				0	\$60.00	\$0.00	
Secretarial/Word Processing	80	40	24		144	\$70.00	\$10,080.00	
					0	\$185.00	\$0.00	
					0	\$185.00	\$0.00	
					0	\$160.00	\$0.00	
					0	\$140.00	\$0.00	
					0	\$120.00	\$0.00	
					0	\$110.00	\$0.00	
					0	\$70.00	\$0.00	
Subtotal Labor	\$1,038,400.00	\$73,640.00	\$58,720.00	\$145,500.00	11526			\$1,170,760.00
Direct Expenses								
Travel	\$15,000.00	\$2,000.00	\$1,000.00	\$400.00			\$18,400.00	
Reproduction/Floping	\$5,000.00	\$1,000.00	\$200.00	\$300.00			\$6,500.00	
Office Expenses	\$20,000.00	\$10,000.00					\$30,000.00	
Subcontractors	\$250,000.00	\$65,000.00	\$10,000.00				\$325,000.00	
Subtotal Disbursements	\$290,000.00	\$78,000.00	\$11,200.00	\$700.00				\$379,900.00
PROJECT TOTAL	\$1,328,400.00	\$151,640.00	\$69,920.00	\$146,200.00				\$1,551,000.00
ESTIMATED COMPENSATION								\$1,551,000.00



Legislative Branch

RL Number: _____
Date Submitted: _____

City Clerk, City Hall, Binghamton, NY 13901 607-772-7005

REQUEST FOR LEGISLATION

Requests for Legislation (RLs) may be submitted to the City Clerk's Office for consideration at City Council Work Sessions. RLs generated from within City Hall departments must be submitted to the Mayor, Comptroller and Corporation Counsel for review before submission. RLs generated by citizens may be submitted directly to the City Clerk's Office.

Applicant Information

Request submitted by: Gary R. Holmes, P.E.

Title/Department: Engineering - Acting City Engineer

Contact Information: grholmes@cityofbinghamton.com

RL Information

Proposed Title: Amendment No. 1 to Work Order No. 6 With GHD Consulting Services
on the BAF Restoration and Rehabilitation at the BJCJSTP

Suggested Content: Amending Work Order No. 6 with GHD Consulting Services for additional
design services for the BAF Restoration and Rehabilitation at the BJCJSTP. This total amount of Work
Order No. 6 is in the amount of \$2,997,000.00 . The amount of \$2,247,750.00 is in budget line
HX8150.500200.J11NN and \$749,250.00 is available in budget line HX8150.500200.J11FF.

Additional Information

Does this RL concern grant funding? Yes No

If 'Yes', is the required RL Grant Worksheet attached? Yes No

Is additional information related to the RL attached? Yes No

Is RL related to previously adopted legislation? Yes No

If 'Yes', please provide Permanent Ordinance/Resolution/Local Law number(s): _____

OFFICE USE ONLY	
Mayor:	<u></u>
Comptroller:	<u></u>
Corporation Counsel:	<u></u>
Finance <input type="checkbox"/>	Planning <input type="checkbox"/> MPA <input type="checkbox"/> PW/Parks <input type="checkbox"/> Employees <input type="checkbox"/> Rules/Special Studies <input type="checkbox"/>



Work Order-06 Amendment -1

Plant Restoration and Rehabilitation Final Design

I. DESCRIPTION

An engineering evaluation of the Binghamton Johnson City Joint Sewage Treatment Plant (BJCJSTP) was submitted by the City of Binghamton to the New York State Department of Environmental Conservation (NYSDEC) on January 5, 2015. This was done in response to the requirements of the Consent Order. The evaluation was prepared as part of Work Orders No.01 and No. 02.

The evaluations performed in Work Orders No.01 and No. 02 resulted in recommendations for restoring and rehabilitating the BJCJSTP. The design services to restore and rehabilitate the BJCJSTP were completed under Work Order No. 6 and generally included:

- Demolish the existing fine screening building and existing C-BAF cells
- Modify existing N-BAF cells to CN-BAF cells (BIOSTYR DUO Media)
- Construct new CN-BAF cells (BIOSTYR DUO Media)
- Construct new backwash tank
- Convert existing DN-BAF system to BIOSTYR DN-BAF system
- Construct new influent fine screens for Binghamton side and Johnson City side
- Modify SIPS dry well and wet well and replace pumps
- Construct new BAF backwash treatment system
- Modify existing Thickener No. 1 to centrate equalization
- Replace coarse screens in Head House
- Convert existing grit chambers to stacked tray vortex grit chambers
- Construct new aerated influent channels for chemically enhanced primary treatment (CEPT)
- Construct new CEPT system
- Replace all chain and flights and scum removal on all primary clarifiers
- Reconfigure the flow path of Primary Clarifiers No. 7 through No. 10
- Repurposing the Compost Facility as maintenance shops and administration offices
- Replace the motor control center in the Head House

During the design effort, the design team and the BJCJSTP staff met over twenty times. Issues of site and equipment conditions and operation and maintenance were discussed during most of these meetings. With the City's concurrence, many these issues were addressed, which resulted in an increased scope of work for design.

The increase in design scope can be categorized into four major components:

1. Improvement of the original concept design
2. Repair/upgrade to existing equipment (unknown during Work Orders No. 1 and No. 2)
3. Modification in treatment process or equipment for cost savings and environmental benefit
4. Assignment of work (from others)
5. Supporting design

II. SCOPE OF SERVICES FOR FINAL DESIGN

A. Improvement to Original Concept Design

1. During Work Order No. 6, improvements were made to the concept design of some facilities / features. Amendment 1 will provide a final design for the following facilities / features, which have been modified and improved from the original concept design.
 - a) BAF Concrete Design – significant consideration was given to pre-cast concrete versus poured in place concrete - poured in place concrete was the selected type



Work Order-06 Amendment -1

Plant Restoration and Rehabilitation Final Design

- b) New BAF Blower Building (Demo old) – replace the existing building with a new building that can serve as part of the flood protection system - eliminates a section of flood wall
- c) BAF Backwash Tank – the improved tank is larger and of secant pile construction, which reduces significantly the dewatering costs during construction
- d) New Aerated Grit Chambers – design an aerated grit system instead of a Headcell® grit system; aerated grit system improves CEPT performance
- e) New Primary Distribution Box - replace the existing distribution box with a new distribution box; the new box will provide better flow control and simplifies construction
- f) Methanol System - replace the old system with a new system and add fire suppression according to Vestal Fire requirements
- g) New Chemical Building – a new building is a safer alternative than adding new chemicals to an existing building and is preferred by Vestal Fire
- h) New Headhouse Screening Building – replace the old building with new building; the old building is not to code and the new building and layout is better for equipment access and removal of screenings
- i) Thickener No. 1 – design repairs to Thickener No. 1 instead of converting this thickener to a centrate equalization tank. This is a more conservative solids handling design and the centrate equalization tank can be built a later time.
- j) Parking lot and Landscaping at Administration Building – based on the new site security requirements all parking for the plant staff and visitors will be south side of the Administration Building requiring a new larger parking lot and landscaping
- k) Site Security Design – new site security including gates, cameras and lighting
- l) Site-Civil grading and yard piping
- m) Structural and architectural design for the facilities
- n) Electrical design for the facilities
- o) Instrumentation design for the facilities. Equipment will be PLC based and “SCADA ready”
- p) HVAC design for the facilities. The building will be in accordance with applicable codes (10-States Standards and NFPA 820)

B. Repair / Upgrade Design

1. During Work Order No. 6, the design team learned of existing equipment that required repair and or upgrade to meet permit limits or building codes. Amendment 1 will provide a final design for the following facilities / features.
 - a) Thickener Improvements – replace the internal mechanism for Thickeners No. 2 and No. 3 and build a new flow distribution box. These repairs and upgrades will improve the performance of the thickeners
 - b) Odor Control – the existing odor control system is undersized and in poor condition. Replace/Upgrade.
 - c) Electrical Panels and Feeders and Bing and JC MCC as part of Headhouse MCC – the existing panels and feeders and MCC is old and parts are not readily available. Replace/Upgrade.
 - d) PRZ System – the existing pressure reducing zone valve at the feed to the plant is old and is in poor condition. Replace/Upgrade.
 - e) Site-Civil grading and yard piping
 - f) Structural and architectural design for the facilities
 - g) Electrical design for the facilities
 - h) Instrumentation design for the facilities. Equipment will be PLC based and “SCADA ready”
 - i) HVAC design for the facilities. The building will be in accordance with applicable codes (10-States Standards and NFPA 820)



Work Order-06 Amendment -1

Plant Restoration and Rehabilitation Final Design

C. Modification to Treatment / Equipment Design

1. During Work Order No. 6, opportunities for treatment modifications and new facilities became warranted based on other design elements. These modifications and new facilities provide operation and maintenance cost savings. Amendment 1 will provide a final design for the following facilities.
 - a) Plant Water System – a new plant water system will be installed that pumps and conveys disinfected effluent to equipment (fine screens and BAF). This system re-uses water instead of using fresh water from the water supply, saving operation and maintenance dollars. The new plant water system includes: three, 20-HP pumps, approximately 800 linear feet of 8-inch plant water distribution mains and approximately 500 linear feet of 2-,3-,4-inch building services.
 - b) UV Disinfection - the existing chlorination system will be replaced with a UV system. The new UV system avoids repair costs needed for the existing chlorination system. The new UV system has a lower annual operation and maintenance cost. The new UV system discharge fewer chemicals to the environment. The new UV system includes: conversion of existing chlorine contact tank to UV facility, eight (8) inclined UV banks, new UV building including an new electrical room, new level control weir trough tank.
 - c) Site-Civil grading and yard piping
 - d) Structural and architectural design for the facilities
 - e) Electrical design for the facilities
 - f) Instrumentation design for the facilities. Equipment will be PLC based and “SCADA ready”
 - g) HVAC design for the facilities. The building will be in accordance with applicable codes (10-States Standards and NFPA 820)

D. Assigned Work Design

1. During Work Order No. 6, some design work was assigned to GHD. The decision to do so was based on keeping the construction work in a signal construction contract for quality control and easy of construction management. Amendment 1 will provide a final design for the following facilities / features.
 - a) South Flood Protection System – the original design (by others) included a flood gate across Old Vestal Road and a flood wall on the south side of Old Vestal Road. By assigning the design work to GHD it allowed the flood wall to be integrated into treatment tank wall, thus simplifying construction and reducing construction costs. The South Flood Protection System includes: approximately 5,000-sq ft sheet pile, approximately 250-ft long concrete wall – 1-ft thick with foundation “t”.
 - b) SW System and SW PS No 4 - the original design (by others) included a large stormwater pump station. . By assigning the design work to GHD it allowed the pump station to be reduced in size and integrated into new structures, thus simplifying construction and reducing construction costs. The new stormwater pump station includes: two, 15-HP pumps, four control valves, a control weir and a 20-ft x 20 ft vault.
 - c) Traffic Management Design - the original design (by others) was not started. Because the South Flood Protection System was assigned to GHD the traffic management design also needed to be assigned. The traffic management design entails the shut-down of one lane of Old Vestal Road during most of the construction duration.
 - d) SCADA Integration – new programming to integrate individual PLCs into SCADA network. For reason of continuity this work was assigned to GHD. After the hardware design and schematic package is completed, the Control System Narrative will be developed. This narrative document will detail the automation and monitoring software requirements for all of the PLCs, HMIs, and the SCADA system. It also defines the communication structures and protocols that will be used for all of the vendor and OEM PLCs. Once this narrative document is reviewed and accepted by the Client, then the development of the software packages can begin. Customized PLC software will be required to control and/or interface a total of 22 PLC's.



Work Order-06 Amendment -1

Plant Restoration and Rehabilitation Final Design

- e) Site-Civil grading and yard piping
- f) Structural and architectural design for the facilities
- g) Electrical design for the facilities
- h) Instrumentation design for the facilities. Equipment will be PLC based and "SCADA ready".
- i) HVAC design for the facilities. The building will be in accordance with applicable codes (10-States Standards and NFPA 820)

E. Supporting Design

The design work detailed above requires supportive design work. This type of supportive design work was completed in Work Order No. 6, but due to the increased scope additional supportive design was required.

1. Provide Process Safety Management Plan. The work is anticipated to include:
 - a) Conduct a Process Hazard Analysis (PHA).
 - b) Prepare written Process Safety Management Plan to confirm with regulations
2. Provide hazardous material survey for the following buildings. This work will subcontracted to Shumaker Engineering, Binghamton.
 - a) Old Blower Building
 - b) East Scrubber Building
 - c) West Scrubber Building
 - d) Chlorination Building
 - e) DN Building
3. Provide environmental permitting. This work will be subcontracted to EDR, Syracuse.
 - a) Modify SWPPP based on modified backwash tank design. SWWP will be in compliance with the NYSDEC State Pollution Discharge Elimination
 - b) Provide additional wetland permitting assistance based on modified backwash tank design for potential impacts to adjacent waters of the United States.
4. Provide a final design for geotechnical. This work will be subcontracted to Brierley Associates, Syracuse. The final design for geotechnical is anticipated to include:
 - a) Interpret existing soils data for new/modified facilities identified above.
 - b) Prepare foundation designs for new/modified facilities identified above.

F. Other Services

1. Provide Bid Phase Services, including:
 - a) Prepare and issue necessary addenda based upon regulatory agency or contractor questions or comments.
2. Provide Project Management, including:
 - a) This task allows for the routine management, administration, and coordination of the work efforts for the final design activities. Included in this task is the appropriate coordination with the City, the Plant Staff and engineering team members, management of the project, monitoring of budget and schedule, and administrative assistance for NYSDEC and EFC.
3. The engineering team will participate in ADDITIONAL progress meetings with the Owner and the NYSDEC. The ADDITIONAL anticipated meetings include:
 - a) By-weekly meetings with the Owner (5 meetings)
 - b) NYSDEC meetings (2 meetings)
 - c) Vestal Fire (2 meetings)



Work Order-06 Amendment -1

Plant Restoration and Rehabilitation Final Design

III. DELIVERABLES

- A. 30 Percent Design Bid Documents
- B. 60 Percent Design Bid Documents
- C. 100 Percent Design Bid Documents

IV. KEY PERSONNEL

Representative of Owner	Engineering Team
Gary Holmes	Michael Tamblin
Cathy Young	Howard LaFever
	Bruce Munn
	John LaGorga
	John Revette
	Dan Lalande
	Lauren Scanlan

V. SCHEDULE

Task	Completion Date
100 Percent Design Bid Documents	11/20/15

VI. COMPENSATION

- A. The Owner will be billed for actual labor hours charged at the billing rates contained in Attachment A, plus direct project expenses (e.g., identifiable reproduction costs, shipping charges). The compensation for the Scope of Services outlined in Section II is estimated to be \$2,997,000, as indicated in the Fee Schedule in Table 1.
- B. Payments for the work will be due monthly on the basis of statements submitted by GHD Consulting Services Inc. for the work performed during the period.
- C. Additional services beyond the Scope of Services will be considered extra work and will necessitate additional compensation.

VII. STANDARD TERMS AND CONDITIONS

The services described above will be completed as Work Order-06 Amendment -1 under the Terms and Conditions of the Agreement dated September 30, 2014 between GHD Consulting Services Inc. and the City of Binghamton.



Work Order-06 Amendment -1

Plant Restoration and Rehabilitation Final Design

VIII. NEW YORK CLEAN WATER STATE REVOLVING FUND CONTRACTING REQUIREMENTS

GHD Consulting Services Inc. will comply with the applicable provisions of "Required Terms for Project Contracts and Subcontracts" as defined in the NY State Revolving Fund Bid Packet for Non-construction Contracts and Service Providers, as prepared by the New York State Environmental Facilities Corporation. Refer to Attachment B.

This Work Order is duly executed between Consultant and Client by signature or City Resolution (Attachment C). Upon execution of this Work Order, Consultant is authorized to proceed with the work.

CONSULTANT:

CLIENT:

GHD CONSULTING SERVICES INC.

CITY OF BINGHAMTON

By: _____
Michael E. Tamblin, P.E.

By: _____

Title: _____
Principal

Title: _____

Date: _____

Date: _____



Work Order-06 Amendment -1

Plant Restoration and Rehabilitation Final Design

ATTACHMENT A RATE SCHEDULE

1.1 GHD CONSULTING SERVICES HOURLY RATES

CLIENT shall pay Compensation for labor based on CONSULTANT's rate schedule below. The Rate Schedule provided below shall be in effect through completion of this Work Order:

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Project Manager	\$140.00
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Project Engineer I	\$120.00
Engineer or Scientist II	\$110.00
Engineer or Scientist I	\$100.00
Architect	\$110.00
Managing Designer	\$140.00
Senior Designer	\$110.00
Designer	\$100.00
Senior Drafter	\$85.00
Drafter	\$70.00
Technician	\$65.00
Construction Project Representative	\$90.00
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Secretarial/Word Processing	\$70.00

1.2 JL RICHARDS HOURLY RATES

CLIENT shall pay Compensation for labor based on CONSULTANT's rate schedule below. The Rate Schedule provided below shall be in effect through completion of this Work Order:

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Project Manager	\$140.00
Project Engineer	\$120.00
Designer-Drafter	\$110.00
Secretarial/Word Processing	\$70.00



Work Order-06 Amendment -1

Plant Restoration and Rehabilitation Final Design

1.3 Non-salary expenses and outside services attributable to the Project

CLIENT shall pay Compensation for expenses based on CONSULTANT's rate schedule below. The Rate Schedule provided below shall be in effect through completion of this Work Order:

- 1.3.1 Actual receipted cost of accommodations (not to exceed \$120 US per night)
- 1.3.2 A per diem for meals and expenses: \$46 US (overnight) or \$28 (full day) or \$16 (partial day).
- 1.3.3 Mileage calculated at the federal reimbursement rate established by the U.S. General Services Administration for privately owned vehicles in effect on the date of the occurrence;
- 1.3.4 The identifiable costs of reproduction, printing, and binding and postage and shipping applicable to the Project;
- 1.3.5 The actual cost of outside services and subcontractors;
- 1.3.6 Actual receipted cost of field equipment rental supplied by a vendor for use on the Project;
- 1.3.7 The actual cost of permits and fees required for the project and paid by CONSULTANT;
- 1.3.8 The actual cost for additional insurance required by the Owner in excess of CONSULTANT's normal coverage's or limits;
- 1.3.9 The actual cost of premiums paid on overtime worked.



Work Order-06

Amendment -1

Plant Restoration and Rehabilitation Final Design

ATTACHMENT B

**Required Terms for Project Contracts and Subcontracts as defined in the NY State Revolving
Fund Bid Packet for Non-construction Contracts and Service Providers**



Work Order-06 Amendment -1

Plant Restoration and Rehabilitation Final Design

WORK ORDER NO. - 6 - Amendment 1
October 1, 2015

Plant Restoration and Rehabilitation Final Design

Fee Estimate

TABLE 1

Description	Improved Design Scope	Repair and Upgrades	Plant Water	UV Treatment	Flood Wall and SW PS	Traffic Control	SCADA Integration	Support Design	QA/QC, Management, Meetings, EFC	Total Hrs	Billing Rate	Total Cost	Subtotals
GHD Consulting Services													
Project Director	60	32	4	40	16			32	80	264	\$220.00	\$58,080.00	
Senior Technical Advisor	80	60	8	80	24			60	120	432	\$210.00	\$90,720.00	
Technical Advisor	80	60	8	80	24			60	120	432	\$180.00	\$77,760.00	
Senior Project Manager	80	60	8	80	24	8		60	120	440	\$170.00	\$74,800.00	
Senior Engineer	360	360	40	360	120		500	300	450	2490	\$160.00	\$398,400.00	
Project Manager	120	80	8	120	16			80	80	504	\$140.00	\$70,560.00	
Project Engineer II	360	360	40	400	80		1290	80		2610	\$130.00	\$339,300.00	
Project Engineer I	360	240	32	240	60		2724	80		3736	\$120.00	\$448,320.00	
Engineer/Scientist II	360	240	40	360	80					1080	\$110.00	\$118,800.00	
Engineer/Scientist I	360	240	32	360	80					1072	\$100.00	\$107,200.00	
Architect	240	180	32	240	60					752	\$110.00	\$82,720.00	
Managing Designer	200	120	16	176	32					544	\$140.00	\$76,160.00	
Senior Designer	0	0	0	0	0					0	\$110.00	\$0.00	
Designer	800	600	80	800	200					2480	\$100.00	\$248,000.00	
Senior Drafter	0	0	0	0	0					0	\$85.00	\$0.00	
Drafter	1200	900	120	900	300					3420	\$70.00	\$239,400.00	
Technician	0	0	0	0	0					0	\$65.00	\$0.00	
Construction Project Representative	0	0	0	0	0					0	\$90.00	\$0.00	
Field Technician	0	0	0	0	0		80			80	\$60.00	\$4,800.00	
Secretarial/Word Processing	40	40	8	40	8				120	256	\$70.00	\$17,920.00	\$2,452,940.00
J.L. Richards													
Project Director	40									40	\$190.00	\$7,600.00	
Technical Advisor	40									40	\$185.00	\$7,400.00	
Senior Project Manager	80									80	\$185.00	\$14,800.00	
Senior Engineer	80									80	\$160.00	\$12,800.00	
Project Manager										0	\$140.00	\$0.00	
Project Engineer	120									120	\$120.00	\$14,400.00	
Designer-Drafter	120									120	\$110.00	\$13,200.00	
Secretarial/Word Processing										0	\$70.00	\$0.00	\$70,200.00
Subtotal Labor	\$599,400.00	\$397,840.00	\$52,240.00	\$481,240.00	\$125,440.00	\$1,360.00	\$579,380.00	\$119,840.00	\$176,400.00	21072			\$2,523,140.00
Direct Expenses													
Travel	\$10,000.00	\$5,000.00	\$400.00	\$5,000.00	\$800.00		\$10,000.00	\$5,000.00	\$10,000.00			\$46,200.00	
Reproduction/Plotting	\$2,000.00	\$1,000.00	\$300.00	\$1,000.00	\$600.00			\$500.00	\$500.00			\$5,900.00	
Office Expenses												\$0.00	
Subcontractors	\$10,900.00					\$25,000.00		\$385,500.00				\$421,400.00	
Subtotal Disbursements	\$22,900.00	\$6,000.00	\$700.00	\$6,000.00	\$1,400.00	\$25,000.00	\$10,000.00	\$391,000.00	\$10,500.00				\$473,500.00
PROJECT TOTAL	\$612,300.00	\$403,840.00	\$52,940.00	\$487,240.00	\$126,840.00	\$26,360.00	\$589,380.00	\$510,840.00	\$186,900.00				\$2,997,000.00