



Greater New Haven Water Pollution Control Authority

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REGULAR MEETING OF THE
GREATER NEW HAVEN WATER POLLUTION CONTROL AUTHORITY
BOARD OF DIRECTORS
WEDNESDAY, FEBRUARY 12, 2025 6:00 P.M.
260 EAST STREET
NEW HAVEN, CONNECTICUT

AGENDA

1. Approval of minutes of January 8, 2025 – Regular Meeting.
2. Public participation relating to agenda items.
3. Consideration and approval of a resolution authorizing the Executive Director, Sidney J. Holbrook, to grant an abatement of interest, fees and charges to Joseph Shepter.
4. Consideration and approval of a resolution approving the change order to increase the not-to-exceed amount of the agreement with Laydon Industries for on-call professional services, for a revised not-to-exceed amount of \$651,369.93.
5. Consideration and approval of a resolution amending the resolution approved by the Board on March 12, 2019, appropriating \$53,400,000 for engineering, design, and construction of improvements to intermediate term control plan improvements to the East Street Pump Station and East Shore Water Pollution Abatement Facility and authorizing the issuance of \$53,400,000 Clean Water Fund obligations of the Authority under the State of Connecticut Clean Water Fund Program secured solely by revenues of the sewerage system and authorizing the Authority to enter into grant and loan agreements.
6. Consideration and approval of a resolution authorizing the Executive Director, Sidney J. Holbrook, to negotiate, execute and deliver an agreement with CH Nickerson Co. Inc. for professional services related to Project No. CWF 2017-01, Capacity Upgrades of East Street Pump Station for CSO Reduction, for an aggregate amount not to exceed \$65,530,778.

7. Consideration and approval of a resolution authorizing the Executive Director, Sidney J. Holbrook, to negotiate, execute and deliver a task order with Arcadis for engineering services related to Project No. CWF 2017-01, Capacity Upgrades of East Street Pump Station for CSO Reduction, for an aggregate amount not to exceed \$6,542,114.
8. Executive Summary and department updates and presentations.
9. Consideration and approval, as necessary, of any other new business of the Authority.
10. Call to the public.
11. Adjournment.

The Law Office of Nicole Shepter, LLC

87 Whitfield Street, Suite 8

Guilford, CT 06437

203-990-1442

www.shepterlaw.com

Nicole S. Shepter, Esq.

Admitted in CT, NY, and CA

January 4, 2025

Renee Phillips

Greater New Haven Water Pollution Control Authority

260 East Street

New Haven, CT 06511

Re: Account #0077415-00225805 (Camp 61, Mansfield Grove, East Haven)

Dear Ms. Phillips:

This letter is submitted in support of our request to the Greater New Haven Water Pollution Control Authority ("GNHWPCA") for an interest abatement regarding the above.

Background.

Mansfield Grove Campers Association, Inc. (MGCA) is a seasonal community of "camps" on the shoreline of East Haven. My husband, Joseph Shepter, and his sister, Kathleen Scarlett, inherited Camp 61 from their aunt and continue to own the structure, and a share of the MGCA corporation, jointly.

This letter concerns an unpaid bill to Joseph Shepter of approximately \$10,000, roughly half of which is interest and fees. The bill has been accruing for at least 14 years.

The first unpaid bill dates from June 16, 2010. My understanding after our phone conversation in December was that the bill was paid automatically prior to that date, although you were not able to tell me how it was paid (whether by credit card, bank account transfer, etc.) A much more recent bill, dated in May of 2024, shows the mailing address of 1533 Welch Street in Houston, Texas. That same bill also has our last name crossed out and "Shepta" written in. I assume that you have been sending bills to that same Houston address since June 2010.

Joseph Shepter has never lived in Houston, Texas. Kathleen Scarlett used to live at that address, but moved to a different home in Houston in 2008. She left Houston for a work assignment in Jakarta, Indonesia, in March 2010. The bills continued to go to that address for two years, and they were paid until June 2010. I assume that there was an automatic payment set up, which terminated somehow in June 2010.

Since 2010, Joe has paid all the utility bills for Camp 61. All other common utility bills (water, trash, etc.) are paid through MGCA, Inc. and he assumed that sewer was included because he never received a bill from you.

Collection efforts.

Joe and I were not aware that there was a separate sewer bill until July 2024, when the president of MGCA was contacted, and in turn informed us. While we do not contest the payment of the sewer fees themselves, the interest and fees are considerable. The length of time it has taken the GNHWPCA to contact us, and the feeble attempts made to collect on it would be a consideration for a court (see below).

My understanding is that there were some efforts by the GNHWPCA to collect the balance, specifically referring the matter to a collection agency. I cannot understand why this collection agency did not find us (assuming they were looking for Joseph Shepter, and not Joseph Shepta.) Twice in recent memory (in 2020 and 2024) we had medical bills that were not properly sent to our health insurance company go to bill collection agencies. They found us right away, and the bills were resolved. The same thing happened with Joe's father's nursing home in 2008 (although this predates this matter.) The collection agency found him right away, and the matter was resolved.

We are very easy to find. We have been living in this area since 2008 (first Branford, and then in Guilford from 2010 to the present.) I have been an attorney licensed in Connecticut since February 2010. Joe and I both run businesses which feature our last name and can be found through a quick internet search. There are no other individuals named "Joseph Shepter" – the only other was his father, who died in 2007.

I also question why a bill was never sent to Camp 61 itself, because the bills were probably returned to you as undeliverable from the Houston address for fourteen years (and/or there was no response for fourteen years.) Mail is delivered to Camp 61 (the street address is 45 Mansfield Grove Road, Camp 61, East Haven CT). In addition, the governing association, the Mansfield Grove Campers Association, Inc. is a registered corporation in Connecticut, and is also easy to find.

In 2013, The GNHWPCA began placing liens twice a year on Camp 61 through the East Haven Land Office. To date, 22 liens have been placed, but no attempt had been made to contact either Joseph Shepter or the MGCA, Inc. about them, even though both of their addresses are easily available from the town of East Haven.

We were very surprised to learn about these liens because credit checks never indicated their presence. We obtained mortgages in July 2010 and February 2020, without any sort of red flags. The presence of the liens may not have been an issue yet in 2010, but they certainly should have been in 2020.

Request.

We are requesting that the interest, fees and charges that have accrued on the charges for actual sewer use be abated pursuant to Section 17.02(b) of the GNHWPCA Sewer Ordinance (as amended on October 13, 2021.) The balance for actual sewer use would then be paid in full. This is an effort to resolve the matter fully, including a release of the liens.

I believe the circumstances discussed above warrant the exercise of the Executive Director's discretion, specifically the amount of time that passed between the accrual of the debt and GNHWPCA contacting MGCA directly; the lack of good faith efforts by GNHWPCA to either notify us about the bills or liens; the curiously unsuccessful efforts of GNHWPCA's bill collection agency in managing to accomplish anything; and the fact that the bills were addressed to a person who does not exist (Joe Shepta) and were sent to an address where he never lived, and presumably were returned as undeliverable.

These are the same types of equitable considerations that a court would take into consideration if it were called upon to craft a solution, and the defenses of unclean hands and laches would certainly play a role. Homeowners do not have a duty to scan public records on the off chance that a lien has been placed on their property. Moreover, it is axiomatic that a creditor must notify an obligor about a debt to be paid. A debt that is unknown to an obligor cannot be paid.

I thank you in advance for your attention to this matter. Please do not hesitate to contact me at the phone number above.

Sincerely,

A handwritten signature in black ink, appearing to read "Nicole S. Shepter". The signature is fluid and cursive, with the first name "Nicole" and last name "Shepter" clearly distinguishable.

Nicole S. Shepter, Esq.



MEMORANDUM

DATE: February 4, 2025

TO: Sidney J. Holbrook

FROM: Thomas Sgroi, PE
Director of Engineering

RE: Contract Change Order Request
Project No. SSR 2024-04
2024 Pre-lining manhole improvements Laydon Industries

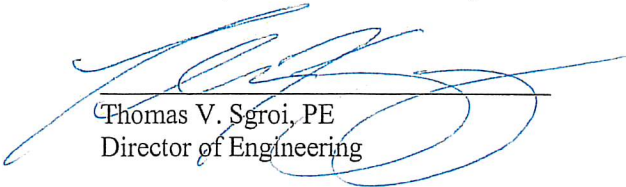
Sid:

I request that the recommendation be added to the February 12, 2025 Board Agenda for resolution.

Prelining manhole work was advertised to the Authority's six on-call contractors, with four bids received and opened on March 4th. Laydon Industries submitted the lowest responsible bid of \$582,000, which was subsequently approved at the March 13, 2024, Board of Directors (BOD) meeting. This project was further amended by the Board of Directors on July 10, 2024 to include contingency for a total amount not to exceed of \$640,400.

The Engineering Department requests **\$10,969.93** in additional funds to accommodate field change orders which exceed the previous Authorization. This amount will facilitate closing the project out as complete for a total amount of **\$ 651,369.93**.

FY25 budgeted funds will be used for this change. This project is consistent with and budgeted from the Authority's FY24 & FY25 Capital Dedicated Infrastructure Renewal Funds.


Thomas V. Sgroi, PE
Director of Engineering

cc: Gabe Varca (e-copy)
Gary Zrelak (e-copy)
Lou Criscuolo (e-copy)
Ricardo Ceballos (e-copy)



MEMORANDUM

DATE: February 4, 2025

TO: Sidney J. Holbrook, Executive Director

FROM: Thomas Sgroi, PE, Director of Engineering

RE: Allocation of Clean Water Funds Recommendation – Amendment
Project No. CWF 2017-01 Capacity Upgrades at East Street Pump Station for CSO Reduction & CWF 2019-04 Nitrogen Upgrades at East Shore Water Pollution Abatement Facility (ESWPAF)

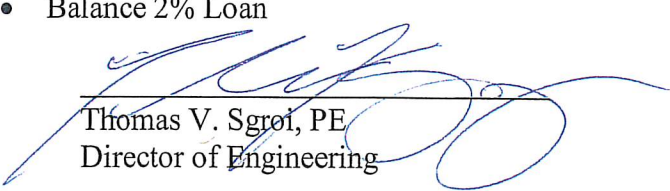
Sid:

I request that the above-mentioned recommendation be added to the February 12, 2024 Board Agenda for resolution.

The Engineering Department requests an amendment to the \$53,400,000 East Street Pump Station Capacity Upgrades and the Nitrogen Improvements at the ESWPAF CWF Agreement approved on March 12, 2019 for engineering, design, and construction. We request an amendment amount of \$ **42,724,690** for a total of **\$96,124,690** of Clean Water Fund obligations under the State of Connecticut Clean Water Fund Program.

This project is 100% DEEP Clean Water Fund (CWF) Eligible as follows:

- DEEP CWF Blended Grant 50% CSO Reduction, 20% Rehabilitation and Replacement
- Balance 2% Loan


Thomas V. Sgroi, PE
Director of Engineering

ecopy: Gabe Varca, Gary Zrelak, Joe Megale
Lou Criscuolo, Nick Stevens

RESOLUTION AMENDING A RESOLUTION APPROPRIATING \$53,400,000 FOR ENGINEERING, DESIGN, AND CONSTRUCTION OF INTERMEDIATE TERM CONTROL PLAN IMPROVEMENTS TO THE EAST STREET PUMP STATION AND EAST SHORE WATER POLLUTION ABATEMENT FACILITY AND AUTHORIZING THE ISSUANCE OF \$53,400,000 CLEAN WATER FUND OBLIGATIONS OF THE AUTHORITY UNDER THE STATE OF CONNECTICUT CLEAN WATER FUND PROGRAM SECURED SOLELY BY REVENUES OF THE SEWERAGE SYSTEM AND AUTHORIZING THE AUTHORITY TO ENTER INTO GRANT AND LOAN AGREEMENTS

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE GREATER NEW HAVEN WATER POLLUTION CONTROL AUTHORITY:

Section 1. Section 1 of the resolution entitled "Resolution Appropriating \$53,400,000 For Engineering, Design, And Construction Of Intermediate Term Control Plan Improvements To The East Street Pump Station And East Shore Water Pollution Abatement Facility And Authorizing The Issuance Of \$53,400,000 Clean Water Fund Obligations Of The Authority Under The State Of Connecticut Clean Water Fund Program Secured Solely By Revenues Of The Sewerage System And Authorizing The Authority To Enter Into Grant And Loan Agreements" approved by the Board of Directors at a meeting held on March 12, 2019 (the "Resolution"), is hereby amended by increasing the amount of the appropriation and bond authorization therein by \$42,724,690 from \$53,400,000 to \$96,124,690, thereby making said Section read as follows:

Section 1: Under and pursuant to the provisions of the Bylaws of the Greater New Haven Water Pollution Control Authority (the "Authority") and all other general or special laws thereto enabling, there be and hereby is approved the appropriation of \$96,124,690 for intermediate term control plan improvement projects, including, but not limited to, the engineering, design, and construction, as applicable, of (i) improvements to the East Street Pump Station to increase the peak capacity from 30 MGD to 65 MGD during storm events, all as more fully set forth in the "City of New Haven Combined Sewer Overflow Long-Term Control Plan Update" dated December 2016, revised March 2018 prepared by Jacobs (f/k/a CH2M Hill) as the same may be amended from time to time; and (ii) improvements to the process air control system for low level nitrogen removal at the East Shore Water Pollution Abatement Facility to optimize the size and number of aeration blowers all as more fully set forth in the March 2019 Technical Memorandum entitled, "Process Air Compressor System Evaluation for Low Level Nitrogen Removal" prepared by Jacobs as the same may be amended from time to time and for engineering, administrative, printing, legal and financing costs related thereto, including but not limited to, trustee fees, credit enhancement and bond funded reserve requirements, as applicable, said appropriation to be inclusive of any and all

State and Federal grants-in-aid thereof (collectively, the "Project").

Section 2. The first sentence of Section 2 of the Resolution is hereby amended by replacing the figure \$53,400,000 therein with the revised figure of \$96,124,690, thereby making said Section read as follows:

Section 2. To meet said appropriation, not exceeding \$96,124,690, interim funding obligations and project loan obligations of the Authority may be issued (hereinafter "Clean Water Fund Obligations") evidencing an obligation to repay any portion of the costs of the Project determined by the State of Connecticut Department of Energy and Environmental Protection to be eligible for funding under Section 22a-475 et seq. of the Connecticut General Statutes, as the same may be amended from time to time (the "Clean Water Fund Program"). The Executive Director is authorized in the name and on behalf of the Authority to apply for and accept any and all Federal and State loans and/or grants-in-aid of the Project and is further authorized to expend said funds in accordance with the terms hereof and in connection therewith to contract in the name of the Authority with engineers, contractors and others. The Executive Director is hereby authorized to execute and deliver to the State in the name of and on behalf of the Authority Project Loan and Project Grant Agreements under the Clean Water Fund Program. The Authority may issue Clean Water Fund Obligations in one or more series and in such denominations as the Executive Director and the Treasurer shall determine. The Executive Director and the Treasurer are hereby authorized to determine the amount, date, maturity, interest rate, form and other details and particulars of the Clean Water Fund Obligations subject to the provisions of the Clean Water Fund Program, and to execute and deliver the same.

Section 3. The remaining provisions of the Resolution shall be applicable to this resolution as of the date of the adoption of this resolution.

Section 4. The remaining provisions of the Resolution are hereby ratified and confirmed.

Section 5. This resolution shall be effective upon its approval by the Board of Directors of the Authority.



MEMORANDUM

DATE: February 4, 2025

TO: Sidney J. Holbrook

FROM: Thomas Sgroi, PE
Director of Engineering

RE: Contract Award Recommendation
CH Nickerson Co. Inc.
CWF 2017-01 Capacity Upgrades of East Street Pump Station for CSO Reduction

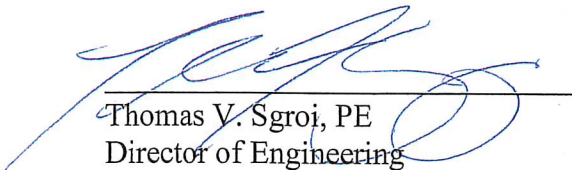
Sid:

I request that the above-mentioned recommendation be added to the February 12, 2025 Board Agenda for resolution.

The project involves the major rehabilitation upgrades to the East Street Pump Station planned as part of the Authority's Long Term Control Plan (LTCP) and is required within DEEP Consent Order 5509. CH Nickerson was the sole bidder on the project. Based on the thorough analysis of the bid by our design consultant ARCADIS, we recommend approval to award the contract to CH Nickerson Co. Inc. of Torrington CT for the amount of \$ **59,573,434** plus a contingency of \$ 5,957,343 for a total not to exceed \$ **65,530,777**.

The project is DEEP Clean Water Fund (CWF) Eligible as follows:

- DEEP CWF Blended Grant 50% CSO Reduction, 20% Rehabilitation and Replacement
- Balance 2% Loan


Thomas V. Sgroi, PE
Director of Engineering

ccopy: Gabe Varca, Gary Zrelak, Joe Megale
Lou Criscuolo, Nick Stevens

[illegible]

SUBJECT

CWF 2017-01 Capacity Upgrade at East Street Pump Station for CSO Reduction – Bid Evaluation and Recommendation for Award

TO

Greater New Haven Water Pollution Control Authority
Nick Stevens, PE

DATE

January 16, 2025

OUR REF

30003039

COPIES TO

Tom Sgroi, PE
Joe Megale
Gary Zrelak

NAME

Vanessa McPherson, PE
vanessa.mcpherson@arcadis.com

Arcadis has completed a bid evaluation for Contract CWF 2017-01: Capacity Upgrade at East Street Pump Station for CSO Reduction. This bid evaluation includes a review of the bid results with a focus on the bid pricing, assessment of market conditions, and bidder's qualifications. This memorandum summarizes the results of Arcadis' bid evaluation and represents our recommendation to the Greater New Haven Water Pollution Control Authority (GNHWPCA).

Review of Bid Form

The Bid Opening was held on December 12, 2024. While there were two registered plan holders, only one bidder attended the pre-bid meeting and submitted a bid (C.H. Nickerson & Company Inc.). The Total Bid (Lump Sum for General Construction, Contingency Allowances and Unit Prices) submitted by C.H. Nickerson was \$59,573,434. The Engineers Estimate of Probable Construction Cost (EoPCC) for the project was \$47,086,375, and is considered AACE Class 1 level, which has a typical accuracy range of -10% to +15% in accordance with AACE Recommended Practice 18R-97 – Cost Estimate Classification System. Much of the cost difference between the bid submitted by C.H. Nickerson and the EoPCC is in the Lump Sum Item for General Construction. C.H. Nickerson shared information on components of the Lump Sum price to allow for comparison of costs and identification of discrepancies between the submitted bid and EoPCC. Based on the information provided, the difference in cost is attributed to several key factors, including project staging / maintenance of pump station operations and site access / laydown area.

Complexity of Staging and Maintenance of Pump Station Operations

Work required to upgrade existing facilities while maintaining operation during construction is inherently complex. Estimating a precise duration required for temporary pumping is difficult as it is highly dependent on the Contractor's means and methods. The cost included in the EoPCC did not align with the Contract requirements for temporary pumping, resulting in a discrepancy between the estimated and as-bid cost for this component of the project. The approximate variance between the temporary pumping costs in the EoPCC and the submitted bid is \$2 million.

Site Access and Limited Laydown Area

Difficult and confined site access, limited laydown area and the inability to stockpile any material on site result in constructability constraints and associated costs on the project that are difficult to quantify. The bid evaluation identified that C.H. Nickerson included significant cost for off-site staging/parking, material storage and laydown which were not accounted for in the EoPCC. The approximate variance between the site access, offsite storage and easement maintenance costs in the EoPCC and the submitted bid is \$3 million.

Other items reviewed which identified discrepancy between the EoPCC and the submitted bid included concrete rehabilitation costs and the provision of a Builders Risk Insurance policy by the Contractor. Each of these items represents approximately \$1M in variance in cost, with the EoPCC lower than the bid pricing.

Based on the analysis of the information provided, Arcadis has confirmed that the submitted bid is valid and reflects the true cost to complete the scope of work identified in the Contract Documents. Accounting for the items reviewed results in an adjusted EoPCC which is within 10% of the submitted bid.

Market Condition Assessment

Market condition drivers include broad-based economic factors such as fuel prices and interest rates, working capital and bond credit availability. Regional factors such as the number of qualified contractors, workloads, commercial product supply availability, and labor and equipment resource availability also drive how a project will be bid and therefore the ultimate cost of construction. At the project level, risk, perceived risk, and specific project requirements such as duration, future inflationary risk, liquidated damages, and Force Majeure, may also affect whether a contractor bids. Lastly, within individual contractors another set of factors comes into play including items like the amount and type of owned equipment that is available, who the contractor has or can make available for project management and key craft positions, and their internal working capital and bond credit considerations. There can be a significant variation from the base estimate due to these factors.

The size of the project is a factor which may have resulted in only one submitted bid. The magnitude of the work is beyond the capacity of most in-state and regionally qualified General Contractors who have the current bandwidth to complete the Upgrades to the East Street Pump Station within the contract terms and timeline. Additionally, the Connecticut Department of Administrative Services (DAS) pre-qualification requirement in multiple categories – Water Treatment Plants, Sewer and Water Lines, and General Building Construction (Group C) impacted the number of Contractors qualified to bid. On other recent large projects, out-of-state companies have shown interest, however this project has logistical considerations that could impact their ability to be competitive; specifically, the complexity of work and long duration. The type of work involved in this project requires a competent, experienced labor force. C.H. Nickerson has the advantage of being able to overlap and complete the site work, demolition, concrete and major mechanical/process piping work with in-house crews.

Bidder Qualification Statement

As part of the bid evaluation, Arcadis conducted a survey of projects referenced in C.H. Nickerson's qualifications statement. C.H. Nickerson has provided the required information with regards to bidder's qualifications.

Reference Survey

Overall, client and past project references have ranged from positive to very positive. All contacts reported positive experiences with C.H. Nickerson and would recommend them for similar work. No concerns have been raised by any of the references. Completed references are included in Attachment A.

All references reported the quality of C.H. Nickerson's final, constructed product as exceptional and all Owners were very pleased with project outcomes. No concerns were raised regarding staffing or supervision in the field and all references confirmed adequate safety programs were adhered to. In multiple interviews with both the Owner and Engineer for the referenced work, each with respect to separate projects, the reference noted C.H. Nickerson's outstanding workmanship during construction and quality documentation. In all interviews conducted, the references noted that C.H. Nickerson's responsiveness to Owner and Engineer requests was adequate, and that they anticipated and responded to issues in the field well, avoiding many potentially costly and time-consuming delays.

N. Stevens
GNHWPCA
January 16, 2025

It is also noted that the C.H. Nickerson's proposed Project Manager and Superintendent are currently working with GNHWPCA on the Compressor Replacement project at the East Shore Water Pollution Abatement Facility. Feedback is that the project is proceeding well/as-planned, and the Contractor's team is proactive and responsive.

Recommendation

Arcadis' review indicates that C.H. Nickerson's submitted bid is valid and reflects the true cost to complete the scope of work identified in the Contract Documents. There are few general contractors in New England capable of completing a project of this size and complexity. The time spent to re-advertise and re-bid the project would escalate costs overall, and there is no indication that a lower bid would be achieved.

C.H. Nickerson is a responsive and responsible bidder that is capable and qualified to complete the Upgrades to the East Street Pump Station. Arcadis recommends that this Contract be awarded to C.H. Nickerson for the submitted bid price. Subsequent to award, a Scope Review Meeting will be arranged and include representatives from all parties (Owner, Engineer and Contractor). The purpose of the meeting will be to discuss the Contractor's approach, opportunities and alternate ideas for executing the work and identify potential areas of savings.



MEMORANDUM

DATE: February 4, 2025

TO: Sidney J. Holbrook

FROM: Thomas Sgroi, PE
Director of Engineering

RE: Task Order Recommendation
ARCADIS – Engineering Services During Construction
CWF 2017-01 Capacity Upgrades of East St Pump Station for CSO Reduction

Sid:

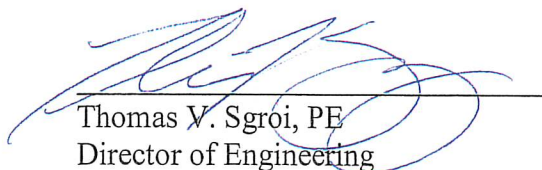
I request that the above-mentioned recommendation be added to the February 12, 2025 Board Agenda for resolution.

The East Street Pump Station is one of the two largest pump stations operated by the Authority. Located in New Haven along the waterfront behind the parking garage at the end of East Street, it pumps flow across Quinnipiac River in a forcemain system shared with its sister Boulevard Station. This major rehabilitation and CSO control project has been designed as a large part of the Authority's Long Term Control Plan (LTCP) and is required within DEEP Consent Order 5509. The rehabilitation will include capacity upgrades of the existing pump station to maximize flow to the ESWPAF per the recommendations of the Dec 2016 LTCP Update. The rehabilitation has been designed to include flood protection, improved reliability and increased pumping capacity from 30 to 65mgd (40mgd until Phase II ESWPAF is completed.)

I recommend approval of the attached ARCADIS Engineering Services During Construction Scope of Services in the amount of \$ 5,947,376 plus a contingency of \$ 594,738 for a total not to exceed \$ 6,542,114.

The project is DEEP Clean Water Fund (CWF) Eligible as follows:

- DEEP CWF Blended Grant 50% CSO Reduction, 20% Rehabilitation and Replacement
- Balance 2% Loan


Thomas V. Sgroi, PE
Director of Engineering

ecopy: Gabe Varca, Gary Zrelak, Joe Megale
Lou Criscuolo, Nick Stevens

GREATER NEW HAVEN WATER POLLUTION CONTROL AUTHORITY
CWF 2017-01 Capacity Upgrades at East Street Pump Station for CSO Reduction

SCOPE OF ENGINEERING SERVICES DURING CONSTRUCTION

Task A – Construction Administration

A.1 General Scope of Work

The engineering services during construction, commissioning, and close-out will generally consist of the following: review submittals; review and respond to requests for information (RFIs) and requests for clarification; interpret contract documents; conduct periodic site visits; attend and facilitate construction project meetings; review progress of construction; develop requests for proposals, change orders, and Work Change Directives; review and evaluate change order proposals; prepare change orders, maintain logs for submittals, RFIs, change order proposals and change orders; provide technical support; monitor contractor's general conformance with the Contract Documents; provide field support during start-up; provide field support during shutdowns; review Operation and Maintenance (O&M) Manual(s) and Standard Operating Procedures (SOPs); coordinate training; participate in technical inspections of the project, substantial completion inspection and final walk-through; review punch list; prepare record drawings; and participate in close-out meeting with the Contractor, the GNHWPCA and their representatives.

The scope of the engineering services during construction, commissioning and close-out services is further described below:

A.2 Engineering Services During Construction

Arcadis shall provide general engineering services during construction for the duration of the construction phase of the project. Arcadis shall attend all project meetings (pre-construction, progress), coordinate attendance, and prepare for agenda items and meeting minutes as required, unless otherwise noted. Arcadis shall provide consultation and advice during construction and provide technical engineering support during construction activities and update or modify the Contract Documents to meet changed project conditions as necessary to supplement and/or provide clarity to the Contract Documents during the construction phase of the project (to address RFIs, Change Orders, and other issues requiring modified Contract Documents).

The duration of Arcadis' engineering services during construction will coincide with the duration of the contract for construction (projected to be 48 months, with 24 months of active construction on site).

A.2.1 Project Management

Task includes monthly invoicing, team and subcontractor coordination, contract

communications, scheduling, and oversight. The duration for overall project management shall be the anticipated duration of construction.

A.2.2 Attend Pre-Construction Conference

A meeting will be held as outlined in the Contract Documents prior to the start of construction to coordinate the start of construction, review any issues, and discuss the expectations of the parties involved. Arcadis shall coordinate the preparation of meeting documents, such as the agenda with the GNHWPCA, distribute information prior to the meeting, and record meeting minutes. Arcadis shall assume two (2) attendees at this meeting.

A.2.3 Construction Progress Meetings

Construction Progress Meetings shall be held as required by the Contract Documents and occur monthly for the project duration, shifting to bi-weekly during active construction. Arcadis has assumed seventy-two (72) one hour progress meetings. Arcadis shall assume two (2) attendees at these meetings (in addition to the Resident Project Representative as outlined in subsequent sections of this Scope).

Arcadis shall facilitate the meetings, prepare a package for each meeting containing agenda, a summary of open submittals, RFIs, and PCO/Change Order to be reviewed at each meeting, and a 2-week look ahead schedule (to be provided by Contractor), and other documentation that may be required for meetings that are not specified. Meeting minutes will be prepared by Arcadis.

A.2.4 Periodic Field Visits

Periodic visits to site will be required by the engineering/design team to observe progress and assure compliance with the contract documents and design intent. Arcadis shall assume a total of twenty-four (24) full day visits, each attended by one (1) representative.

Arcadis shall make visits to the site at intervals appropriate to the various stages of construction as deemed necessary to monitor the Contractor's work for compliance with the Contract Documents as outlined above. The visit may coincide with the progress meeting if the progress meeting is held on site. Such visits and observations are not intended to be exhaustive or to extend to every aspect of the work in progress, or to involve detailed inspections of the work beyond the responsibilities specifically assigned to Arcadis in this scope of services and the Contract Documents, but rather are to be limited to spot checking, selective sampling and similar methods of general observation of the work based on Arcadis' exercise of professional judgment. Based on information obtained during such visits and such observations, and from the RPR and GNHWPCA, Arcadis shall determine in general if such work is proceeding in accordance with the Contract Documents and shall keep the GNHWPCA informed of the progress of the work.

During the site visits, Arcadis shall notify the GNHWPCA if Arcadis believes that work should be rejected because such work will not produce a completed Project that

conforms generally to the Contract Documents or that it will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents.

Arcadis shall coordinate with the RPR and review the RPR's logs and notes as part of the site visits.

A.2.5 Review of Submittals and Shop Drawings

Arcadis shall review all shop drawing submittals prepared by the Contractor along with associated illustrations, samples, and other submittals required by the Contract Documents. Arcadis has assumed 620 submittals (including resubmittals) will be reviewed at an average review time of 4 hours per submittal.

Arcadis shall coordinate and track submittals, including preparing and maintaining a submittal log, and Arcadis will distribute the shop drawings and submittals. Copies of each submittal including subsequent revisions shall be provided to the GNHWPCA.

A.2.6 Respond to Requests for Information (RFI)

Arcadis shall respond to Requests for Information submitted by the contractor. Arcadis shall assume 270 RFIs require response at an average review time of 7 hours.

Arcadis shall coordinate and track RFI's, including preparing and maintaining a RFI log. Copies of each RFI including responses and subsequent revisions shall be provided to the GNHWPCA.

A.2.7 Contractor Change Orders

Arcadis shall review contractor's Change Orders and provide a recommendation to GNHWPCA as appropriate. Arcadis shall assist in the preparation of the final Change Order document, review and evaluate change orders proposed by the contractor and provide a response. Arcadis shall assume 120 proposed change order reviews at an average preparation time of 8 hours.

A.2.8 Develop Requests for Proposal (RFP)

Arcadis shall assume that changes in the project scope will occur during construction that require Arcadis to develop a request with supporting information for the contractor to review and submit a proposal for. Arcadis shall assume that 45 RFPs require development at an average preparation time of 12 hours.

A.2.9 Applications for Payment

The review and recommendation of approval of payment requisitions issued by the Contractor will generally be covered by the RPR assigned to the project. However, Arcadis shall provide assistance when requested for clarification or interpretations of the Contract Documents are necessary. In addition, Arcadis shall review the Schedule of Values which serves as the basis for the Payment Applications when submitted by the Contractor.

A.2.10 Support for the Development of Maintenance of Pump Station Operations (MOPOs) Plans

Arcadis shall support the Contractor in the development of detailed MOPOs that are required to complete this project. The contractor's plans shall build from what has been provided in the contract documents and this support is meant to improve the process and ensure a successful tie-in or shutdown.

A.2.11 Review Vendor Supplied Material

Arcadis shall review vendor supplied equipment operations and maintenance (O&M) manuals, installation reports, and test and certification reports for conformance with the Contract Documents. Based on the Contract Documents, 40 O&M Manuals are required for submittal by the Contractor. Each O&M Manual will have a Preliminary Submittal and a Final Submittal.

A.2.12 Special Inspections and Laboratory Field Testing

Arcadis shall support the special inspections as a liaison among the contractor, the coordinating special inspector and Owner.

A.2.13 Witness Factory Testing

Arcadis shall attend and support the witness factory testing of switchgear, control panels, end suction dry pit centrifugal pumps. Assumed 1 Arcadis employee to participate in Factory Testing.

Task B - Commissioning Services

Arcadis shall provide commissioning services during project startup as outlined below and take the lead role in planning, scheduling, and coordinating commissioning activities.

B.1 Commissioning Team Meetings

Arcadis shall attend meetings with the GNHWPCA, contractors, and any necessary vendors or equipment representatives to coordinate system and equipment startups. Arcadis shall facilitate the meetings, and ensure receipt and approval of all required documentation prior to commissioning (O&M manuals, trainer resumes, proposed lesson plans, etc.)

B.2 Field Support During Start-up

Arcadis shall provide on-site personnel during equipment startups to provide assistance to the contractor and equipment vendors as needed and to confirm that equipment is performing as designed and expected.

Arcadis shall provide technical engineering support and on-site personnel for specific functional and performance testing that may be required by the Contract Documents to confirm that specified process systems are performing as designed and specified. This

shall include providing assistance to GNHWPCA in coordination of required testing with the contractor and other agencies (as may be required). The work associated with this item shall include all the development of start-up plans, testing forms/documentation, scheduling, observing testing, compiling results, and other activities required by the Contract Documents.

B.3 Instrumentation Checkout Services

In coordination with the development of the HMI system (in AESS scope), Arcadis shall perform checkout services of the instrumentation and control equipment installed by the contractor. Arcadis shall witness and document control loop check-outs, perform a check of the control strategy (remote manual/remote auto/final testing), and provide follow-up control systems work as needed after the system is started up and running.

B.4 Develop Operations' Manual Sections

Arcadis shall develop and/or update new Operations Manual sections to be incorporated into the existing Operation's Manual for the facility. The sections developed by Arcadis shall provide process operational and maintenance information that shall compliment the individual vendor O&Ms to be provided by the construction contractor that will provide the detailed equipment operational and maintenance information.

In addition to the O&M sections, Arcadis shall also develop Standard Operating Procedures (SOPs) and/or modify existing SOPs to match new conditions for the processes and equipment installed as part of the project. Arcadis shall provide a list of anticipated equipment and processes that require SOPs, including an indication of the number of SOPs, and those that are new or modified versions. The SOPs shall be developed by appropriately experienced operational staff and be based upon field visits.

B.5 System Operations Training

Arcadis shall provide system operation training in addition to the equipment training that is to be provided by the construction contractor and equipment vendors. All training should be a combination of classroom and 'hands-on' training.

Training classes for each training topic/session shall be provided and the classes shall be scheduled to accommodate the Owner's schedule. Trainers' resumes shall be submitted in advance to GNHWPCA and approved prior to training. A training agenda and copy of training materials shall be provided by Arcadis in electronic format in advance of training and be approved by GNHWPCA. A digital video of select training sessions (maximum 4) shall be provided to GNHWPCA within 30 days of training (2 copies on Thumb Drive).

Task C - Close Out

Arcadis shall provide close out services for the project. This will include receiving, reviewing and transmitting to GNHWPCA with written comments maintenance and

operating instructions, schedules, guarantees, certificates of inspection, tests and approvals, and marked-up record documents (including Shop Drawings, Samples and other approved data, and marked-up record Drawings) which are to be assembled by the Contractor in accordance with the Contract Documents to obtain final payment. Arcadis shall prepare record drawings based on the marked-up documents provided by the Contractor. These services shall include the following:

C.1 Record Drawings

Arcadis shall prepare record drawings based on the Contractor's red-lines and a laser scan of the Operations Building and Inlet Works performed after final completion to reflect as-built conditions. The record drawings will also reflect information provided by GNHWPCA, the construction contractor, and Arcadis' own on-site inspections. Arcadis shall reconcile and log that all construction document changes (i.e., shop drawings, RFIs, Field Change Orders, etc.) have been incorporated into the record drawings. This task will include monthly updates to the BIM model created during design throughout active construction.

C.2 Substantial Completion

Following notice from the Contractor that the Contractor considers the entire work ready for its intended use, Arcadis, the RPR and GNHWPCA, accompanied by the Contractor, shall conduct an inspection to determine if the work is substantially complete. Arcadis shall deliver a certificate of Substantial Completion to the WPCA and Contractor after the resolution of any objections of the WPCA and Arcadis and after it is mutually agreed upon by the WPCA and Arcadis that the certificate of Substantial Completion shall be issued.

Before Arcadis issues a Certificate of Substantial Completion, a list of observed items requiring completion or correction (Punch list) will be issued to the Contractor.

C.3 Final Site Inspection

Arcadis shall perform a final site inspection and walk-through of all the project areas with GNHWPCA, RPR and Contractor to determine final completion status. Arcadis shall prepare a final report and submit it to GNHWPCA for review and acceptance. Arcadis shall assume one half day of effort by two (2) Arcadis employee for this task.

Task D – AESS

D.1 Applications Engineering Support Services (AESS) Meetings

Pre-Submittal Conference

Arcadis shall attend one (1) two-hour meeting with GNHWPCA, contractor, and with the contractor's instrumentation and control subcontractor ("systems supplier") to review the instrumentation and control equipment to be provided by the Contractor on the project and the Human Machine Interface (HMI) programming to be provided by Arcadis. The purpose of the meeting will be to coordinate the work, to review the proposed material to be supplied, and provide Arcadis' expectations for the "systems supplier's" submittals to expedite the submittal process (to avoid lengthy submittal reviews and multiple re-

submittals) and address any equipment compatibility issues. Arcadis shall facilitate the meeting, prepare and distribute an agenda and meeting minutes. Arcadis shall assume two (2) attendees to this meeting.

Additional AESS Meetings

In addition to the Pre-Submittal conference, Arcadis will conduct kickoff, submittal review, and a total of six (6) AESS meetings. Meetings will focus on the programmable controller (PLC) and human-machine interface (HMI) application programming, including proposed control philosophy, manual and automatic control, graphic display layout, alarming, security, trending, reporting, and associated software functions.

D.2 AESS PLC Programming

Provide application programming for the new PLC system provided by the system supplier for monitoring and control of the new equipment.

D.3 AESS HMI Programming

Provide application programming for the new personal computer-based HMI stations at the Pump Station. These services will include definition of monitoring functions for review with GNHWPCA staff, and programming main process graphic displays, and associated popups. The application programming will be provided for:

- Inlet Works Control Panel and Workstation
- Operations Building Control Panel and Workstation

D.4 AESS On-Site Program Testing

Perform testing on-site to verify the proper operation of all PLC and HMI application programming. After the Contractor installs and tests the PLC hardware, AESS will load the PLC and HMI application software, and fully test all functions and features.

D.5 AESS Training

Provide on-site training of operations and maintenance personnel on the use of the PLC and HMI application programming. Training will be provided following each process start-up following software testing and prior to placing the new systems in service.

D.6 AESS Software Documentation

Document all programmable controller and HMI application programming with text descriptions for ease of maintenance and troubleshooting. At the completion of start-up, provide copies of all application programming to GNHWPCA.

D.7 Post-Startup Support

Provide troubleshooting and adjustments as-needed after the project is turned over to operations (before project close-out).

Task E - Resident Project Representative Services

Arcadis shall provide a RPR who is qualified to perform the required duties. GNHWPCA shall review and accept the representative Arcadis proposes for this assignment. The RPR shall have current OSHA-10 certification and all required safety training required. The purpose of the RPR will be to provide GNHWPCA a greater degree of confidence that the completed Work will conform generally to the Contract Documents and that the integrity of the design concept as reflected in the Contract Documents has been implemented and preserved by Contractor.

The RPR is Arcadis' agent at the site, will act as directed by and under the supervision of Arcadis and GNHWPCA, and will confer with Arcadis and GNHWPCA regarding their actions. RPR's dealings in matters pertaining to the on-site Work shall in general be with Arcadis and Contractor, but keeping GNHWPCA advised as indicated below and as appropriate. RPR's dealings with subcontractors shall only be through or with the full knowledge and approval of Contractor, including their superintendent. RPR shall generally communicate with GNHWPCA with the knowledge of and under the direction of Arcadis.

Subcontractors

Geotechnical Engineering Support (Haley & Aldrich)

Haley & Aldrich shall provide geotechnical engineering support for the project to assist Arcadis in the review of geotechnical aspects of the project to ensure conformance with the Contract Documents.

Haley & Aldrich shall provide engineering services during construction for the geotechnical portions of the projects such as excavation, excavation support, dewatering, and foundation support installation. This will include a review of geotechnical related submittals (including but not limited to excavation, excavation support, dewatering, and vibration monitoring), review of RFI's to provide clarifications; attend meetings, and other geotechnical engineering services that may occur in connection with geotechnical aspects of the project.

Haley & Aldrich shall provide part time construction monitoring services during excavation support installation dewatering system installation, removal of soil, soil management, observing subgrade conditions for foundations, and the placement/compaction of structural fills; and shall prepare field reports to document Contractor activities and field observations/recommendations pertaining to the geotechnical aspects of construction.

Environmental and Civil Services (Zuvic)

Zuvic will assist Arcadis as fully described in their proposal attached, including oversight of removal and closure of the existing underground storage tank on site. Additionally, Zuvic will provide support for review of civil related submittals and RFIs.

Energy Incentive Management and Miscellaneous ESDC Support (JKMuir)

JKMuir will continue their project involvement into the construction phase through the following tasks:

- Solar coordination and incentive application management
- O&M / SOP / Training material development
- Field support during startup/commissioning
- Asset Management coordination and material information tracking
- Field support for I/O checkout to assist in AEES
- Construction inspection support as-needed

Permit Compliance (JKB)

JKB shall provide engineering services during construction for the permitting portions of the project. JKB shall conduct monthly Erosion & Sedimentation Control reviews to ensure compliance with stormwater management requirements. Additionally, JKB shall submit notifications to the CTDEEP in association with the FMC approval for work commencement, compliance certification after project completion, and notices of compliance regarding use of stormwater controls. JKB shall also provide other permitting services that may be required in connection with the project.

AEES Support Services (NIC)

NIC Systems Corporation (NIC) shall provide all Services required, as defined in Sections 40 61 96 (Process Control Descriptions) and 40 63 00 (Application Engineering Support Services) of the specifications as related to the AEES scope. Work as defined in these sections of the specification relative to the scope to be provided by the "Application Engineering Support Services"(AEES).

Section 40 61 13: Process Control Systems General Provisions

Section 40 61 96: Process Control Descriptions

Section 40 63 00: Application Engineering Support Services

NIC shall provide AEES engineering services consisting of PLC programming, SCADA programming, Remote Communications, Coordination Meetings, Factory Tests, Field Tests, Start Up Testing, Manuals, Training and Warranty as specified in the above referenced specification sections. NIC shall also provide two (2) Scada PC's and 1 Upgraded Software Package to existing SCADA (Rockwell Automation) and one new software package (Rockwell Automation). New Software will be upgraded to 75 displays

from current 25 displays.

Special Inspections and Materials Testing (Michael Horton Associates)

MHAI shall perform the role of Special Inspections Coordinator in accordance with the Statement of Special Inspections included with the Contract Documents. The duration of the construction activities for trades requiring special Inspections is assumed to be (24) months. These services include monthly site visits to review the overall progress of the project; the review of reports prepared by other inspecting agencies; preparation of interim special inspections reports summarizing the construction progress, as well as any outstanding deficiencies; and preparation of the Final Report of Special Inspections at the conclusion of the project.

Force Main Cathodic Protection System Design (Corrosion Probe)

As part of the upgrade, GNHWPCA wishes to replace the existing cathodic protection (CP) rectifier and anode groundbed that provides corrosion protection to the existing force main. Corrosion probe shall provide a CP system design, details, and specification to be implemented using the Contract Allowance item during construction:

Summary of Rates Used to Develop Cost Information

To prepare the project budget, Arcadis escalated the current 2022 on-call rates through 2029 (anticipated completion date) using a 4% annual increase, in accordance with the terms of the Agreement.

The fee was developed using the 2027 rates as a basis for all labor categories except the Inspector (this category uses 2028 rate based on when the active on-site construction is expected to occur).

The project will be billed on a time and material basis, not to exceed the established amount, using the established rates for the calendar year when the time is charged.

GNHWPCA
CWF2017-01 Capacity Upgrade at East Street Pump Station for CSO Reduction
Arcadis Engineering Services During Construction
Labor Hour Cost Sheet

	Director	Principal Engineer II	Principal Engineer I	Senior Engineer II	Project Engineer	Staff Engineer	Inspector *	Project Assistant	Subtotal Hours	TOTAL \$
Budget Rates (2027 Used for all but Inspector at 2028)	\$ 419.00	\$ 351.00	\$ 296.00	\$ 264.00	\$ 207.00	\$ 175.00	\$ 275.00	\$ 154.00	Hours	\$
Task A: Construction Administration Services	260	1819	1236	2562	1544	636	4	188	8249	\$ 2,250,601.65
A.2.1: Project Management	156	720	0	0	0	0	0	64	940	\$ 327,940.00
A.2.2: Pre-Construction Conference	0	4	0	0	8	0	4	0	16	\$ 4,160.00
A.2.3: Construction Progress Meetings	14	130	0	0	144	0	0	0	288	\$ 81,331.20
A.2.4: Periodic Field Visits	10	38	19	67	48	0	0	0	182	\$ 50,748.80
A.2.5: Review of Submittals and Shop Drawings	0	248	496	992	496	124	0	124	2481	\$ 639,477.75
A.2.6: RFIs	38	151	567	473	284	378	0	0	1890	\$ 486,315.90
A.2.7: Change Orders	0	240	0	480	240	0	0	0	960	\$ 260,640.00
A.2.8: RFPs	0	0	54	216	216	54	0	0	540	\$ 127,170.00
A.2.9: Applications for Payment	0	0	0	128	0	0	0	0	128	\$ 33,792.00
A.2.10: Support for the Development of Maintenance of PS Operations	40	160	40	140	20	0	0	0	400	\$ 125,860.00
A.2.11: Review Vendor Supplied Material	0	8	8	16	40	80	0	0	152	\$ 31,680.00
A.2.12: Special Inspections and Laboratory Field Testing	2	80	12	10	8	0	0	0	112	\$ 36,766.00
A.2.13: Witnessed Factory Test	0	40	40	40	40	0	0	0	160	\$ 44,720.00
Task B: Commissioning Services	64	132	192	220	412	622	0	0	1642	\$ 382,194.00
B.1: Commissioning Team Meetings	8	40	80	80	120	40	0	0	368	\$ 94,032.00
B.2: Field Support During Start-up	12	12	12	70	84	154	0	0	344	\$ 75,610.00
B.3: Instrumentation Checkout Services (ORT)	32	24	0	40	140	200	0	0	436	\$ 96,372.00
B.4 Develop Operation's Manual & SOPs	0	36	100	0	48	200	0	0	384	\$ 87,172.00
B.5 Provide System Operations Training	12	20	0	30	20	28	0	0	110	\$ 29,008.00
Task C: Close Out	0	39	53	44	0	396	0	384	916	\$ 169,418.00
C.1: Record Drawings	0	9	35	0	0	396	0	384	824	\$ 141,944.00
C.2: Substantial Completion	0	10	10	16	0	0	0	0	36	\$ 10,694.00
C.3: Final Site Inspection	0	4	8	16	0	0	0	0	28	\$ 7,996.00
C.4 Final Notice of Acceptability of the Work	0	4	0	8	0	0	0	0	12	\$ 3,516.00
C.5 Close Out Meeting	0	12	0	4	0	0	0	0	16	\$ 5,268.00
Task D: AESS	40	44	56	198	162	4	8	0	511	\$ 137,206.00
D.1: AESS Meetings	24	36	20	20	36	0	0	0	135	\$ 41,064.00
D.2: AESS PLC Programming	4	0	0	38	28	0	0	0	70	\$ 17,504.00
D.3: AESS HMI Programming	8	0	0	36	36	0	0	0	80	\$ 20,308.00
D.4: AESS On-Site Program Testing	0	0	24	48	24	0	0	0	96	\$ 24,744.00
D.5: AESS Training	4	0	2	20	14	4	0	0	44	\$ 11,146.00
D.6: AESS Software Documentation	0	0	0	12	12	0	0	0	24	\$ 5,652.00
D.7: Post Startup Support	0	8	10	24	12	0	8	0	62	\$ 16,788.00
Task E: Resident Project Representative Services	0	0	0	0	0	0	6040	0	6040	\$ 1,661,096.25

CWF2017-01 Capacity Upgrade at East Street Pump Station for CSO Reduction
Arcadis Engineering Services During Construction
Labor Hour Cost Sheet

	Hours								TOTAL
	Director	Principal Engineer II	Principal Engineer I	Senior Engineer II	Project Engineer	Staff Engineer	Inspector *	Project Assistant	Subtotal
Other Direct Costs									\$ 220,000.00
Total Subconsultants									
Zuvic (MBE)									\$ 178,500.00
JKB (WBE)									\$ 46,500.00
Haley & Aldrich									\$ 210,000.00
JKMuir (WBE)									\$ 245,000.00
Michael Horton Associates Inc. (SBE)									\$ 180,000.00
Absolute Video (WBE)									\$ 8,000.00
Corrosion Probe									\$ 15,200.00
NIC									\$ 190,000.00
Subtotal Subconsultants									\$ 1,073,200.00
Markup on Subconsultant Costs (5%)									\$ 53,660.00
Total Subconsultants (w/mark-up)									\$ 1,126,860.00
Totals	364	2,034	1,537	3,023	2,118	1,658	6,052	572	17,358
									\$ 5,947,375.90

Subconsultant List:

Name	Description of work
Zuvic (MBE)	Shop Dwgs/RFI/Record Dwgs
JKB (WBE)	Permitting
Haley & Aldrich	Geotechnical
NIC	AESS
JKMuir (WBE)	Energy Incentives & Misc Eng Support
Michael Horton Associates Inc.	Testing and Special Inspections
Corrosion Probe	Design of Cathodic Inspection
Absolute Video (WBE)	Video Services of training sessions

Engineering Services During Construction & RPR M/WBE Plan

Budget % of	
Goal	Total
MBE	3%
WBE	5%
	3.00%
	5.04%