

**RESOLUTION APPROVING BUDGET MODIFICATION TO JACOBS FOR
SERVICES DURING CONSTRUCTION FOR THE PURAC PHASE 3 PROJECT**

MOTIONED BY: Gardiner

SECONDED BY: Friedrich

WHEREAS, the North Hudson Sewerage Authority (hereinafter "Authority") is a public body, duly formed under the Sewerage Authorities law, constituting Chapter 138 of the Laws of New Jersey of 1946, as amended (Chapter 14A of Title 40 of the New Jersey Statutes Annotated) and possesses the powers set forth therein; and

WHEREAS, JACOBS has been selected under resolution 17-106 to provide engineering services during construction for the PURAC Phase 3 Project; and

WHEREAS, JACOBS has submitted a request (Exhibit "A") for additional compensation in the amount of \$103,680 related to additional engineering services performed for out of scope items related to the Purac Phase 3 Project; and

WHEREAS, the Authority has determined to undertake, and hereby amend the scope of, the Purac Phase 3 Project as described in Appendix B hereto (the "Project") pursuant to Resolution No. 17-106 adopted on December 14, 2017;

WHEREAS, the Authority has determined that the total estimated cost of the Project will be an amount not to exceed \$1,371,350; and

WHEREAS, the Chief Financial Officer has certified that funding is available through the Authority's Capital Improvement Program; and

WHEREAS, the capital budget of the Authority is hereby amended to conform with the provisions of this resolution to the extent of any inconsistency herewith; and

WHEREAS, the Facilities Review Board has reviewed the proposal and recommends the approval of the request.

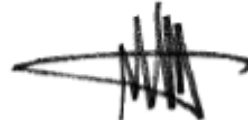
NOW THEREFORE, BE IT RESOLVED that the Authority, as recommended by the Facilities Review Board, approves of JACOBS provision of additional professional engineering and construction services as outlined in Exhibit "A" and shall be compensated in an amount not to exceed an additional \$103,680.

DATED: APRIL 15, 2021

RECORD OF COMMISSIONERS' VOTE

	YES	NO	ABSENT
Commissioner Soares	x		
Commissioner Kappock	x		
Commissioner Marotta			x
Commissioner Gardiner	x		
Commissioner Friedrich	x		
Commissioner Guzman	x		
Commissioner Velazquez			x
Commissioner Barrera	x		
Commissioner White	x		

THIS IS TO CERTIFY THAT THIS RESOLUTION WAS DULY ADOPTED BY THE NORTH HUDSON BOARD OF COMMISSIONERS ON APRIL 15, 2021.



SECRETARY

April 1, 2021

Mr. Fredric J. Pocci, P.E.
Authority Engineer
North Hudson Sewerage Authority
1600 Adams Street
Hoboken, New Jersey 07030

Subject: Services During Construction for PURAC System Upgrades Phase 3
SRF Loan S340592-30
Budget Increase Letter

Dear Mr. Pocci:

CH2M was awarded Engineering Services During Construction for the PURAC Phase III Improvements Project under Resolution 17-106 for \$1,267,670. In addition, under Resolution 20-062 an additional \$138,000 was provided for the oversight of AWC's contract and COVID related coordination.

Notice to Proceed for the project was issued on August 27, 2018, with a Substantial Completion date of January 3, 2021, and a Final Completion date of March 4, 2021. As of February 15, 2021, Rapid Pump & Meter Service Co., Inc (RPM) has completed approximately 90% of the Work. The latest progress schedule received from RPM on January 5, 2021 has a projected final completion date of June 17, 2021. In order for CH2M to continue to provide Resident Engineer (RE) oversight for the extended project schedule we are asking for an additional 4 months of the RE's time until the Contractor is complete. This will require a fee increase of \$103,680.

If you have any questions or require additional information regarding this proposal, please contact me at 862.242.7067.

Sincerely,
CH2M



Shivani Patel, P.E.
Client Service Manager

**RESOLUTION DIRECTING WORK TO CH2M
FOR PROFESSIONAL ENGINEERING SERVICES DURING CONSTRUCTION
FOR THE PURAC PHASE III IMPROVEMENTS PROJECT**

MOTIONED BY: Assadourian

SECONDED BY: Velazquez

WHEREAS, the North Hudson Sewerage Authority (hereinafter "Authority") is a public body, duly formed under the Sewerage Authorities law, constituting Chapter 138 of the Laws of New Jersey of 1946, as amended (Chapter 14A of Title 40 of the New Jersey Statutes Annotated) and possesses the powers set forth therein; and

WHEREAS, CH2M has been selected under resolution 16-135 to provide engineering services for various capital projects required throughout its service area that must be performed in order to maximize the performance of its waste water treatment facility, the capacity of its combined sewer system and/or to comply with its New Jersey Pollution Discharge Elimination System (NJPDES) permit; and

WHEREAS, CH2M has submitted a proposal (Exhibit "A") to provide Engineering Services During Construction for the PURAC Phase III Improvements Project; and

WHEREAS, the Facilities Review Board has considered this request and proposal and recommends the approval of the full Board.

NOW THEREFORE, BE IT RESOLVED that the Authority, as recommended by the Facilities Review Board, directs CH2M to provide professional engineering services during construction for the PURAC Phase III Improvements Project as outlined in Exhibit "A" and shall be compensated in an amount not to exceed \$1,267,670.00.

DATED: DECEMBER 14, 2017

RECORD OF COMMISSIONERS' VOTE

	YES	NO	ABSENT
Commissioner Assadourian	x		
Commissioner Gardiner	x		
Commissioner Kappock	x		
Commissioner Marotta			x
Commissioner Friedrich	x		
Commissioner Sanchez	x		
Commissioner Velazquez	x		
Commissioner Roque	x		
Commissioner Zucconi	x		

**THIS IS TO CERTIFY THAT THIS RESOLUTION WAS DULY ADOPTED BY THE
NORTH HUDSON BOARD OF COMMISSIONERS ON DECEMBER 14, 2017**



ASST. SECRETARY



Mr. Fredric J. Pocci, P.E.
Authority Engineer
North Hudson Sewerage Authority
1600 Adams Street
Hoboken, New Jersey 07030

Via e-mail: fpocci@nhudsonsa.com

December 8, 2017

Subject: Proposal for Engineering Services PURAC Phase III Bid & Award and Engineering Services During Construction

Dear Mr. Pocci:

CH2M HILL Engineers, Inc. (CH2M) is pleased to provide this proposal to the North Hudson Sewerage Authority (Authority) to undertake the bid phase services and services during construction for the Purac Phase III Project. The Engineering Services CH2M will provide are in accordance with the Request for Proposal released on November 8, 2017 and due December 8, 2017.

Project Understanding

CH2M is the design engineer for all three phases of upgrades to the PURAC secondary treatment process of the Adams Street Wastewater Treatment Plant (WWTP). This project is the third and final phase of the reconstruction effort. It includes a complete overhaul and rehabilitation of the Ten (10) PURAC Filter Cells and replacement of and installation of new equipment for the cells and position indicators for the new valves being installed. We've approached the design and this proposal for engineering services during construction with an understanding and appreciation of the complicated nature of the construction work and the importance of the project, particularly the urgency of the construction schedule as successful performance of this process system is essential for meeting the discharge permit limitations.

Key Success Factors that CH2M offers the Authority

- **Direct Experience with this Purac DAF/Flo-filter System**—The Authority gets the only team that has troubleshooted the original system failures, modified the system previously and worked through the repairs and understands the unique operational nature of this DAF/Flo-filter Process.
- **Comprehensive understanding of the design intent, process performance and operational needs including the necessary streamlined construction sequencing to make this last phase of the project a success.**
- **Timely Decision Making in Construction**—Unique understanding of the required quality control and full-time resident inspection procedures for the installation of the DAF underdrain and system components.

Scope of Work

Engineering services to be performed by CH2M under this proposal will include the tasks listed below from the Request for Proposal:

- Task 1: Contract Execution and Pre-Construction Meeting
- Task 2: Construction Observation and Documentation
- Task 3: Authority’s Agent During Construction
- Task 4: Construction Administration
- Task 5: Special Inspections

CH2M’s project team prepared the scope of services with a knowledge and understanding of the Authority’s objectives, the requirements of the project, and the operational requirements of the Adams Street wastewater treatment plant. The Scope of Work in the request for proposal will be executed as written and included as **Attachment 1**.

Cost Estimate for Engineering Services

CH2M proposes to provide Engineering Services in accordance with the Request for Proposal. Services will be provided on a Time and Material basis in accordance with the terms of our most recent On Call Services agreement with the Authority and the proposed changes submitted to the Authority via letter dated June 30, 2017. We have calculated our fees based on the level of effort we estimate it will take to administer the work, with the construction work being performed by a competent contractor who will complete the work in accordance with the times noted in the Contract Documents. Our fee for Engineering Services is shown in **Table 1** below.

TABLE 1
Tabulation of Engineering Costs and Hours

Phase	Task Description	Proposed Hours	Proposed Cost (\$)
Bid Phase Services			
	Bid Services—Labor	109	\$ 20,170
	Bid Services—Other Direct Costs and Printing		\$ 4,000
Construction Phase Services			
1.	Resident Engineering	4,792	\$ 648,730
2.	RFI’s and Submittals	384	\$ 78,315
3.	Project Administration	1,083	\$ 269,375
4.	Record Drawings	216	\$ 23,385
5.	Operations and Maintenance Manual	204	\$ 28,570
6.	Other Direct Costs		\$ 7,400
Special Inspections			
	Special Inspections	370	\$ 27,725
Design Engineer Professional Services			
	CH2M Services		\$160,000 ⁽¹⁾
Project Totals		7,158	\$1,267,670

Note 1. CH2M Services include submittal reviews and response to Requests for Information (RFI) for the specification sections Division 3, 11 and 13, and 15202 - Process Valves and Operators. Services also include responding to design intent questions for these same divisions.

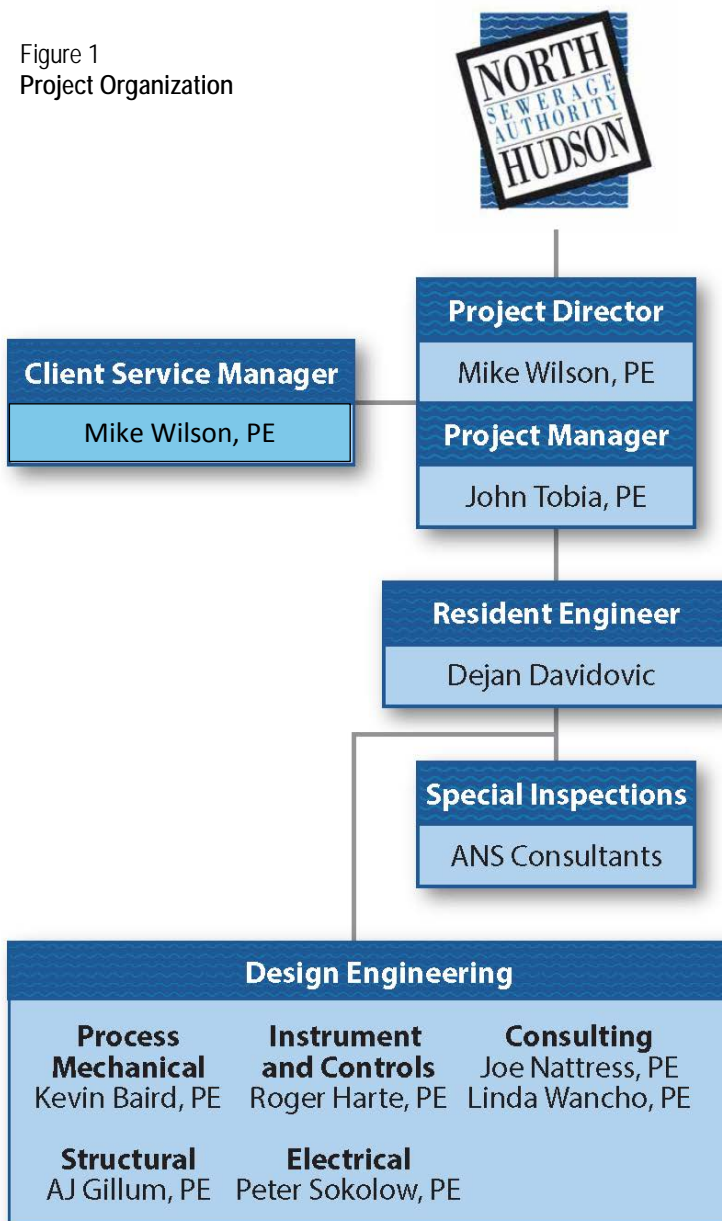
Project Schedule

CH2M anticipates that the time required to complete this project will be approximately 32 months from SDC engineer notice to proceed, anticipated December 14, 2017. The construction is anticipated to require approximately 28 months. Bidding phase work will commence immediately upon receipt of the notice to proceed. A detailed description of the approach including the sequencing of filter cell replacements is provided in **Attachment 2** with a detailed project schedule GANTT.

Key Project Dates:

Action	Date
Update for Advertisement to NJEIT	December 11, 2017
Resolution to Award SDC Sent to NJEIT	December 28, 2017
Advertise Equipment Contracts 2 and 3	December 28, 2017
Receive Authorization to Advertise from NJEIT	January 4, 2018
Advertise General Construction Contract 4	January 9, 2018
Award Pre-purchase Contracts 1, 2, and 3 Outside this Contract	February 15, 2018
Receive Bids on Construction Contract 4	February 20, 2018
Resolution to Award Construction Contract 4	March 15, 2018
Issue Notice-to-Proceed to General Contractor	April 23, 2018
Substantial Completion	July 2, 2020
Final Completion	September 2, 2020

Figure 1
Project Organization



Personnel Assigned to the Project

We are proposing an experienced and efficient project team to provide Services During Construction for the PURAC Phase III Project. All team members have demonstrated experience in wastewater treatment plant construction and rehabilitation projects. Our construction team includes the same technical staff who worked on the detailed designs of phases 1, 2, and 3 of the PURAC improvements projects, and the maintenance of plant operations and constructability concepts in the Phase 3 design. Team members also include staff familiar to the Authority, who have provided on-site services during construction for the Authority's capital improvements projects at the Adams Street WWTP, the River Road WWTP and pump stations, and the award winning H1 Wet Weather Pump Station and the H5 Wet Weather Pump Station.

Our proposed project team will be led by **Mike Wilson, PE** as the Project Director—Mike was the project director of all three phases of the PURAC replacement designs. **John Tobia, PE** will be the Project Manager—John is the signing engineer on the PURAC Phase III design, as well as Phases 1 and 2. **Dejan Davidovic** will be the Resident Engineer. They will be supported by an engineering team that designed the PURAC Phase III upgrades, as well as Phases 1 and 2. **Mike Wilson, PE** will serve as the Client Services Manager. The organization of the project team is shown in **Figure 1**.

Relevant Experience of the Firm and Proposed Team

CH2M is a leader in wastewater services in the United States and abroad. We have partnered with the Authority for over 28 years on programs and projects. For the Purac Phase III Engineering Services During Construction we have developed a bidding approach that saves both time and money for the Authority on the required DAF/Flofilter System Upgrades. Our team members have over 28 years combined experience with this Purac System and over 40 years combined experience in DAF Systems in both water and wastewater processes. **This DAF process experience will provide the Authority with the best answers during the construction phase for this critical upgrade.** As the industry's No. 1 Ranked Sewer/Wastewater Treatment firm (Engineering News-Record, June 2017), CH2M has worked with municipal, national, and industrial clients worldwide for over 71 years to provide comprehensive high-quality engineering services for wastewater treatment facilities, collection systems, and pumping stations. With our combined staff of over 20,000 people worldwide, CH2M delivers a full range of services that satisfy client needs for progressive engineering, design, consulting, program management, and construction management. The CH2M team has provided engineering services for the Authority for more than 28 years and brings a wealth of knowledge about the Authority's system as well as broad world-class treatment and conveyance system experience. Under the General Engineering Services Contract, we were responsible for assisting the Authority in achieving and maintaining permit compliance at its two WWTPs, acting as the Authority's agent with the New Jersey Department of Environmental Protection (NJDEP), EPA, and other agencies, and assisting the Authority in securing financial bonds. CH2M has regularly assisted the Authority in securing and maintaining State Revolving Fund (SRF) loans for capital improvement projects via the New Jersey Environmental Infrastructure Trust (NJEIT) using our experience with agency representatives and demonstrated abilities to secure funding. In addition, we have worked closely with the Authority in the development of its capital plan. This experience and knowledge with the Authority's organization, standards, wastewater facilities, and tools provides a team that will successfully assist the Authority plan for and implement improvements efficiently and successfully. **Attachment 3** provides a detailed description of CH2M's experience in general and particularly our project team.

CH2M looks forward to providing continuing service to the North Hudson Sewerage Authority, and we thank you for your consideration of this proposal. If you have any questions or require additional information regarding this proposal, please contact Mike at 617-320-8049.

Sincerely,

CH2M HILL Engineers, Inc.



Russell Ford, PE
Vice President



Michael Wilson, PE
Client Services Manager

Attachments:

Attachment 1—Scope of Work

Attachment 2—Project Approach

Attachment 3—Experience and Project Team

Scope of Work

The engineer responsibilities shall be by the Services During Construction Engineer (SDC Engineer) unless specifically identified as the responsibility of the Design Engineer, as identified within **Table 2**, located on page 9, or otherwise specified. The engineer shall provide the following scope of service for the project.

Bid Phase Services

The Engineer will assist the Authority during the bid phase as described below:

- Coordinate with the Authority and prepare a recommendation to advertise the project to the Board.
- Prepare a bid schedule and submit same to New Jersey Department of Environmental Protection (NJDEP).
- Prepare the bid advertisement for publication. The Authority will advertise the project and pay any advertisement costs.
- Notify the following State agencies of the advertisement: NJDEP Municipal Finance and Construction Element, NJDEP Office of Equal Opportunity and Public Contract Assistance and the New Jersey Department of the Treasury Office of Equal Opportunity and Public Contract Assistance.
- Reproduce and distribute Contract Documents for all prospective Plan Holders and plan room service companies. Engineer will also provide copies of Contract Documents for use by the Authority and the Authority's Operations Firm. Assume for reproduction purposes that the following paper copies will be required:
 - 20 sets of specifications;
 - 20 sets of full-size contract drawings; and
 - 40 sets of half-size contract drawings.

Construction documents will be available for the SDC Engineer's use.

- Maintain a detailed list of all Plan Holders and their contact information.
- Keep a record of all inquiries for information requested by, and clarifications made to Plan Holders during the Bid Phase.
- Prepare all clarifications and addenda as required to clarify or modify the Contract Documents.
- Distribute one (1) addendum to all plan holders via fax or overnight mail and keep copies of all distribution records.
- Seek and gain approval by NJDEP for all project addenda prior to issuance to Plan Holders.
- Conduct and attend a pre-bid conference and site tour for plan holders and prospective bidders. Engineer will perform all coordination required for the pre-bid conference, including but not limited to; stakeholder notification, utility notification, Municipal notification and property owner notification.
- Prepare minutes of the pre-bid conference.
- Assist Authority Qualified Purchasing Agent (QPA) in bid opening. Engineers will provide one attendee at the bid opening.
- Evaluate the bids and provide a detailed written recommendation of award to the Authority.
- Present the bid report to the Authority Board at two separate meetings.

- Prepare and submit all bid correspondence to the NJDEP Municipal Finance and Construction Element seeking their authorization to award the project.
- Prepare a notice to the State Comptroller in accordance with NJSA 52:15C-10 advising them of a contract award.

Construction Phase Services

The Engineer will perform services during construction as described below.

Task 1 - Contract Execution and Pre-Construction Meeting

- Prepare all necessary paperwork required for execution of the Contract between the Contractor and the Authority.
- Make all necessary copies required to execute at least five paper copies of the Contract.
- Schedule and conduct a pre-construction conference with the Authority, Contractor, NJDEP, and key stakeholders.
- Prepare minutes of the pre-construction conference and distribute same.
- Prepare and issue a Notice to Proceed to the Contractor.
- Coordination with the pre-purchase DAF/Flofilter System equipment supplier.

Task 2 – Construction Observation and Documentation

- Engineer will provide a resident inspector along with all other required engineers, and other construction specialists to observe the on-site construction work.
- Engineer will provide a full-time resident inspector to observe the on-site construction work, when contractor's field activities require full-time oversight. This particularly includes the removal and reinstallation of each underdrain system within each of the ten (10) cells. The full-time resident shall supplement and be onsite to determine that the manufacturers tolerances and installation of the cells is being completed by the general contractor as per the manufacturers direction. This includes levelness, plumbness, underdrain block tolerance, anchorage, and strength of concrete and grout.
- Engineer will provide a resident inspector to observe the contractor's overnight construction work during shutdowns. Overnight activities will likely be required during the installation of influent isolation gates, valve connections, sand removal, and testing of instrumentation and controls for each cell and for the common systems.
- Engineer will provide a resident inspector to coordinate with the contractor and Plant Operations Staff to plan overnight work to maintain plant operations during the work.
- The Engineer will maintain project records, diaries, daily inspection reports and documents.
- The Engineer will conduct inspections, coordinate work sequences with the plant operations staff and develop punch lists.
- Engineer will witness and record the results of all functional and performance tests.
- Respond to public complaints, including contacting complainants, determining solutions; prepare letters, etc. in accordance with the Authority's policies, which requires timely action by the Engineer.

Task 3 - Authority's Agent During Construction

Engineer will perform the following:

- Act as Authority's Agent with regard to the Authority's and Contractor's compliance with the Authority's and NJDEP's program for Socially and Economically Disadvantaged individuals.
- Generate, review and submit all required forms to NJDEP for this program.
- Act as Authority's Agent with regard to the Authority's and Contractor's compliance with New Jersey Department of Treasury Office of Equal Opportunity and Public Contract Assistance requirements. Engineer will generate, review and submit all required forms to the NJDEP for this program.
- Obtain and keep on file all records related to the NJDEP's program for Socially and Economically Disadvantaged individuals and the New Jersey Department of the Treasury Office of Equal Opportunity and Public Contract Assistance requirements.
- Obtain and keep on file all Certified Payroll records obtained from the Contractor.
- Obtain and keep on file the Initial Project Workforce Report and the Monthly Manning Reports.
- Submit two additional paper copies of the Contractor's complete payment application and two additional paper copies of the Engineer's invoice to provide Services During Construction to the Authority's designated representative on a monthly basis.
- Administer the American Iron and Steel provisions of the contract documents.
- Act as Authority's Agent with regard to coordinating with NHSA's pre-purchased equipment suppliers and the contractor.
- One year after the final acceptance of the Work, prepare, execute and submit to the Authority and NJDEP a Certificate of Performance on NJDEP form CCS-006.

Task 4 - Construction Administration

The Engineer will provide administration of the Contract and represent the Authority in observing Contractor compliance with the Contract Documents. The Engineer will perform the following:

- Review the Contractor's Health and Safety plan.
- Coordinate with the various utility companies.
- Meet with the Contractor's representatives and the Authority to assist in implementing the construction process. Engineer will act as initial interpreter of the requirements of the Contract Documents and judge the acceptability of the work and make decisions on all claims of the Authority and Contractor relating to the acceptability of the work or the interpretation of the requirements of the Contract Documents pertaining to the execution and progress of the work.
- Conduct monthly progress meetings with the Contractor to review and record the progress of the work, and to resolve any problems with the project. Conduct additional meetings as necessary to resolve conflicts or specific problems. A Project Manager for the Engineer will chair all meetings and submit minutes of meetings to all attendees.
- Review, certify and process the Contractor's payment requests on a monthly basis. Prepare a payment application cover letter, engineer's summary payment certificate, Authority payment voucher and submit with recommendations and supporting documentation to the Authority for processing.
- Submit a monthly progress report prepared in accordance with the Authority's format outlining all pertinent activities during the month, including but not limited to work performed, milestones, problems, pending change orders and claims, and time delays. The monthly progress report will contain a financial summary of

the Construction contract as well as a financial summary of the Engineer's contract with the Authority. Submit the monthly progress report to the Authority one week prior to the Board meeting.

- Be available to attend the Authority's Facility Review Board meetings each month to present the monthly report, discuss the progress of the work, identify problems with the project, present construction change orders and answer questions from the Authority on the project.
- Provide Construction Management supervision and control of the resident inspection team to ensure quality control and assist with all problems. The Construction Project Manager, a professional engineer registered in the State of New Jersey, will be designated to provide these services including field trips to the site on a minimum weekly basis while substantial work is in progress.
- Provide technical interpretations of the Contract Documents and evaluate requested deviations from the approved design or specifications per the Division of Work responsibilities for the SDC Engineer and Design Engineer.
- Maintain project records, diaries and documents.
- Respond to all Contractor Requests for Information (RFI), and provide written responses to the Contractor. See **Table 2** below for responsibility of work for the SDC Engineer and Design Engineer.
- Provide technical review of shop drawings, diagrams, illustrations, catalog data, schedules and samples, the results of tests and inspections, and other data which the Contractor is required to submit. See Table 2 below for responsibility of work for the SDC Engineer and Design Engineer. Submitted material will be reviewed for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Such review is not intended as an approval of the submittals if they deviate from the Contract Documents or contain errors, omissions, and inconsistencies, nor is it intended to relieve the Contractor of his full responsibility for Contract performance, nor is the review intended to ensure or guarantee lack of inconsistencies, errors, and/or omissions between the submittals and the Contract requirements.
- Coordinate maintenance of plant operations with the contractor and Plant Operations Staff.
- Prepare and administer all necessary Field Orders.
- Prepare and administer all necessary Work Change Directives.
- Assist in negotiating, with the Contractor, the scope and cost of a reasonable and customary number of change orders. Prepare such change orders as may be required and submit them to the Authority for approval. Following approval by the Authority and the Contractor, administer same with the Contractor. Submit all change orders to the NJDEP Municipal Finance and Construction Element for their review and approval. Major revisions to the Project at the Authority's request, or due to differing site conditions, are not included in this scope of work. Examples of major revisions include the addition of any significant item of work, which increases the amount of time required for the Engineer to administer the services during construction, requires additional design engineering, or an extension of the schedule as stated in this proposal.
- Administer all allowance items in the Contract.
- Meet with representatives of the Authority and appropriate regulatory agencies when requested and necessary for consultation or conferences in regard to construction of the project.
- Recommend the acceptability of the work and issue a Certificate of Substantial Completion along with a punch-list upon the Contractor achieving the project milestones,
- Prepare routine letters, memorandum, reports, change orders and miscellaneous paperwork as directed by the Authority for signature by the Authority.

- Respond to public complaints, including contacting complainants, determining solutions, prepare letters, etc. in accordance with the Authority's policies and procedures, which requires timely action by the Engineer.
- Make a final review of the construction to determine if the Work has been completed in conformance with the intent of the Contract Documents. Facilitate a final inspection of the Work by the Contractor, Authority, NJDEP and other appropriate regulatory agencies so they may make the final observation of the construction.
- Upon final acceptance of the Work, prepare and submit a Certification to the New Jersey State Department of Environmental Protection certifying that the project has been completed in accordance with the intent of the Contract Documents. Engineer will use NJDEP form WQM-005 to certify the work.
- Review record drawings provided by the Contractor of changes to the work.
- Prepare final set of record drawings in electronic format.
- Provide appropriate technical assistance during start-up, functional testing, and performance testing. Verify operation of individual valves, common equipment and individual systems and subsystems. Verify operation of the modified control system and instrumentation.
- Facilitate training of the Authority's Operations Firm by the equipment manufacturer's representatives. Provide training to the Authority's Operations Firm on the operation of the entire facility as a system.
- Prepare a project-specific Operations and Maintenance Manual to include an overall process operational description, ancillary system operational descriptions, and individual maintenance needs.
- Assist in negotiating final payment for construction and submit a final letter report upon which final settlement and termination of the Construction Contract can be based. Document proceedings of all final settlement negotiations and record basis for final payment.
- Prior to recommending release of Final Payment, ensure the Contractor has furnished all administrative items required by the Contract Documents, and verify there are no outstanding liens, or claims.
- Prepare and submit all required close-out documentation required for each permit which has been, or will be, necessary for the project. These include, but are not limited to; local construction permits.
- Engineer will provide the Authority with a complete electronic file in PDF format of all documents that they have prepared on behalf of the Authority that is included in this proposal.

TABLE 2.
Assignment of Specification Sections for RFI Responses and Submittal Review Responsibility to SDC Engineer and Design Engineer

SDC Engineer	Design Engineer (1)
Front Ends (all)	
Division 1 - General Requirements (all)	
Division 2 (all)	
	Division 3 (all)
Division 5 (all)	
Division 7 (all)	
Division 9 (all)	
	Division 11 (all)
	Division 13 (all)
Division 15 (all except 15202)	15202 – Process Valves and Operators
Division 16 (all)	

Note 1. Pre-purchased equipment is reflected in these divisions

Task 5 – Special Inspections

The Engineer will administer and oversee the special inspections and special testing of the Contractor's work, as required by the contract documents. Engineer shall have the proper certifications and licenses to perform the special inspections, or Engineer shall subcontract the work. If work is subcontracted, the subcontractor shall possess a New Jersey Public Works Contractor Registration and New Jersey Business Registration. Subcontractor shall have a minimum of two inspectors on staff qualified by Department of Community Affairs (DCA) for each category of work.

Special inspection reports shall be signed and sealed by a New Jersey Professional Engineer. All special inspection work shall be performed under the direct supervision of a New Jersey Professional Engineer.

Owner testing as required for all special inspections within the contract documents shall be performed by the SDC engineer and shall be included within the engineer's proposal.

Project Approach and Schedule

CH2M worked together with NHTA during the project design to identify means of accelerating the construction schedule because of the worsening physical condition of the existing facilities. The resulting streamlined construction schedule for Phase 3 Physical System’s Upgrades of PURAC system at the Adams Street WWTP is planned for an 802-day period to substantial completion, with 862 days to final completion. This schedule is shown in **Figure 2**. The project is planned for an advertisement date of January 9, 2018 with bids received February 20, 2018. The NHTA can pass resolution to award the project at the March 15, 2018 board meeting and issue Notice to Proceed (NTP) on April 23, 2018.

The streamlined construction schedule is enabled by pre-purchase of several key pieces of equipment needed at the start of construction

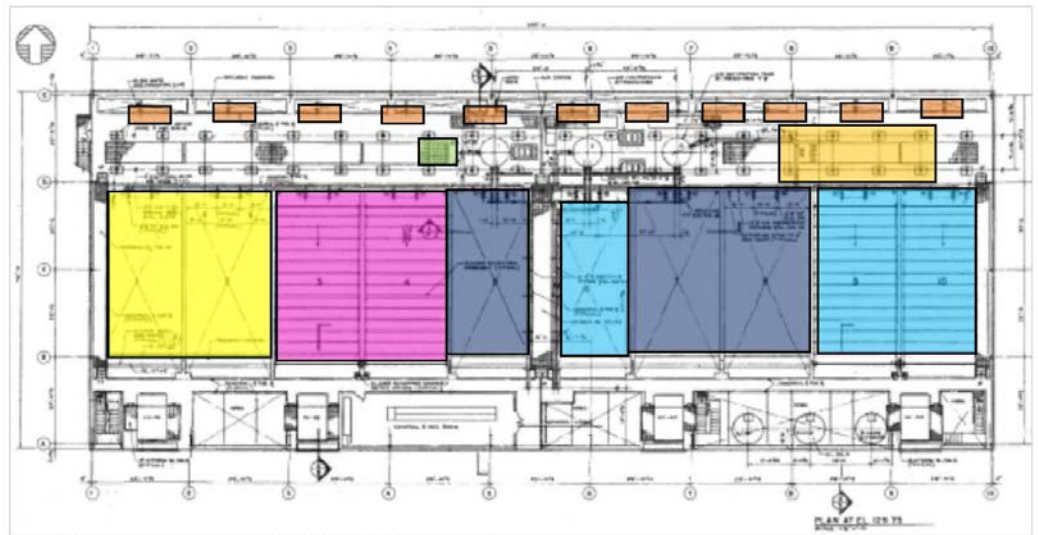
The 802-day construction period represents a streamlined schedule which is enabled by pre-purchase of several key pieces of equipment including:

- Influent slide gates;
- Air scour blowers; and
- DAF/Flo filters.

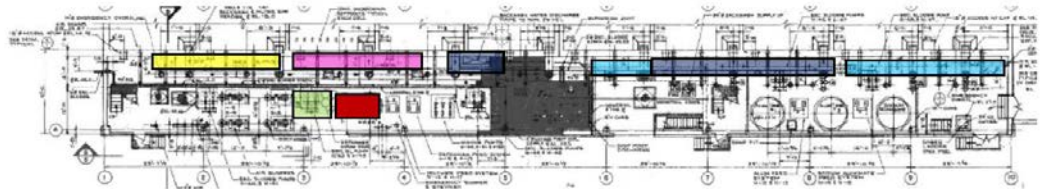
The pre-purchase of equipment is necessary and critical to reduce the timeline for the general construction contract and minimize construction sequencing requirements to maintain plant operations and permit compliance.

The influent slide gates are needed at the very start of construction in order to provide a positive shut down of flow to filter cells being renovated. The lead time for fabrication of slide gates is 12 to 20 weeks (depending on the vendor), and shop

drawings must be submitted and approved prior to start of fabrication. Shop drawing submittal and acceptance is likely to require two months. Thus, pre-purchase of this equipment, rather than having it purchase by the general construction contractor will reduce the construction period by at least four months.



Plan View of the Upper Level of PURAC with Flo-filter construction sequence highlights.



Plan View of the Lower Level of the PURAC with Flo-filter construction sequence highlights.

- Legend**
- Sequence 1 – Air Scour Blowers
 - Sequence 2 – Influent Slide Gates
 - Sequence 3 – Cells 3 & 4, process valves
 - Sequence 4 – Cells 1 & 2, process valves
 - Sequence 5 – Instrument air and Sludge Pumps
 - Sequence 6 – Cells 6,9 & 10, process valves
 - Sequence 7 – Cells 5, 7 & 8, process valves
 - Sequence 8 – Water Booster Pumps

With the influent slide gates in place, demolition of the first two filter cells can commence. Following installation of all upgrades to these two cells, function of the appropriate backwash for media cleaning must be in place prior to the cell being placed into service. Thus, the new air scour blower installation is in the critical path at construction start. As such, the air scour blowers are also being pre-purchased to aid in the construction schedule. The fabrication period for air scour blowers is 10 to 12 weeks. With the pre-purchase of the blowers, installation can begin on the blowers in parallel to renovation of the first two filter cells. This will enable the newly renovated cells to be returned to service upon completion of the upgrades.

Similarly, having the filter underdrains available at completion of demolition of the first two cells is critical for maintaining the accelerated construction schedule. The lead time for the filter underdrains, skimmers, etc. for the DAF/Flo filter renovation is 12 to 14 weeks. Thus, pre-purchase of this equipment is also needed. A supply agreement is currently in place with AWC/DeNora for this equipment. The NHSA will be incorporating the supply agreement into a purchase contract for the equipment. Execution of this contract in January 2018 will enable the equipment to be fabricated and available as needed beginning in September 2018.

As shown in the schedule, Filter cells 3 and 4 will be the first to be renovated. This is driven by the fact that the troughs in cell 4 have currently failed and the cell is out of service. Filter cell 3 shares a skimmer drive mounting with cell 4. Therefore, renovation of the two cells in a pair will facilitate demolition and installation of the skimmers. The demolition work will require one month, with installation of the underdrains, influent flume plate, air backwash piping, baffle walls, air dispersion headers and nozzles, and skimmer mechanisms, filter valves, and upgrades to the instrumentation and control system programming for the new cells will require three months. Once cell renovation is complete, sand will be removed from the clearwell and air saturation tanks prior to placing the new cells in service. This is a critical step which is needed to protect against introducing sand into the air dispersion piping and the underdrains.

Once cells 3 and 4 are complete, work can progress to filter cells 1 and 2. Cells 1 and 2 are a pair sharing mounting for the skimmer drives. Progression to Cells 1 and 2 is proposed because the floor area of the existing flocculators (being removed) for cells 2 and 3 are needed for installation of the new instrument air system. Thus, completion of the demo work and slab infill for cells 2 and 3 will enable construction of the new instrument air system.

Following renovation and return to service of the first four filter cells, work can proceed for 3 filters at a time. Filter cells 5 and 6 are singular cells with independent skimmer drive mounting. Therefore, either of these cells can be included for renovation with the next pair. As shown on the schedule, cells 6, 9 and 10 are identified as the next three for renovation. The same work efforts proceed for the renovation as for previous cells.

The final three cells for renovation will be cells 5, 7 and 8. Upon completion of the ten cells, system performance testing is required to demonstrate the ability to meet the established performance goals. These goals have been established to provide a level of confidence in consistently meeting the discharge permit requirements for the plant.

In addition to the filter cell renovation, air blower and instrument air system renovations described above, the project includes replacement of all plant valves, sludge pumps, service water booster pumps and painting of the interior of the building. The service water booster pumps should be replaced along with renovation of the first two filter cells to enable the appropriate function of the sludge trough spray bars when the cell is returned to service. The new sludge pumps and valve replacement can progress at any time throughout the renovation of the filter cells. Painting of the building interior is planned for completion after the facilities upgrades are complete. This will eliminate interference of work crews and equipment for the process upgrades with the scaffolding and containment needed for the painting effort. It is anticipated that the painting will be completed in a three-month period. With a NTP date of April 23, 2018, the date of substantial completion in 802 days will be July 2, 2020.

Relevant Experience

Throughout our 70 years in business, CH2M has served municipal, state, federal, and private-sector clients in water, wastewater, environmental, transportation, industrial, and related fields. We intend to keep making a difference—achieving and exceeding your expectations and those of the community. We are proud of our commitment to be the best in setting exemplary standards in client satisfaction, social responsibility, technical innovation, leadership, and stakeholder consensus and involvement.

CH2M Qualifications

As the industry's No. 1 Ranked Sewer/Wastewater Treatment firm (Engineering News-Record, June 2017), CH2M has worked with municipal, national, and industrial clients worldwide for over 71 years to provide comprehensive high-quality engineering services for wastewater treatment facilities, collection systems, and pumping stations.

CH2M is a leader in wastewater services in the United States and abroad. We understand the issues the Authority faces with the ever-increasing demands to provide quality service to its communities, renewal of aging infrastructure, and environmental and regulatory requirements. With our unparalleled expertise in wastewater treatment and infrastructure engineering, we progress projects from concept to construction, from initial objective to full operation.



CH2M Has a Proven Record of Delivering Quality Service to the Authority

The CH2M team has provided engineering services for the Authority for more than 28 years and brings a wealth of knowledge about the Authority's system as well as broad world-class treatment and conveyance system experience. As part of the General Engineering Services Contract, which CH2M had the honor to work on for 20 years, we were responsible for assisting the Authority in achieving and maintaining permit compliance at its two WWTPs, acting as the Authority's agent with the NJDEP, EPA, and other agencies, and assisting the Authority in securing financial bonds. CH2M has regularly assisted the Authority in securing and maintaining SRF loans for capital improvement projects via the NJEIT using our experience with agency representatives and demonstrated abilities to secure funding. In addition, we have worked closely with the Authority in the development of its capital plan. CH2M has the background and knowledge required to help the Authority plan for and implement improvements efficiently and successfully.

Representative Relevant Project Experience

The following are brief descriptions of projects relevant to the PURAC Phase III replacement project.

Adams Street WWTP PURAC Improvements Designs - Phases I, II, and III (2014 - present) The PURAC Flo-filter process at the North Hudson Sewerage Authority's Adams Street WWTP is a 25-year old secondary and tertiary treatment process consisting of dissolved air flotation (DAF) followed by sand filtration. A number of components reached the end of their useful life and the process has had a number of failures. CH2M completed a facilities assessment in 2013 and developed a conceptual design of upgrades along with a multi-year capital improvement plan for phased completion of system upgrades. In 2014, CH2M completed Phase 1 of design upgrades for a new instrumentation and control (I&C) system, which was identified as the priority in design to provide for positive process control of the new mechanical equipment being installed with the upgrades in later phases. In 2015 CH2M completed Phase 2 of design upgrades for adding clearwell access to improve sand removal and protect new underdrains that are being installed in Phase 3; the design also included float sludge piping and trough spray

nozzles. Phase 3 design is being completed in 2017 for all remaining mechanical, electrical, I&C and structural replacements and improvements in the PURAC facility. Upgrades for the 10 filter cells include new filter media, underdrains, troughs, air dispersion system, float sludge skimmers and new common systems such as air scour blowers, compressors, sludge pumps, booster pumps for spray systems. To better facility operations, additional I&C was added for optimized valve controls on 86 valves for all mechanical processes, structural concrete treatment to retard chloride degradation, and a structural platform to improve access for valve maintenance. CH2M developed an innovative design and pre-procurement strategy for key process equipment (DAF/Flo-filter, air scour blowers and influent slide gates) needed at the start of construction to accelerate the construction schedule, which required splitting the construction documents into four contracts. CH2M participated in close coordination between the Authority and the New Jersey Department of Environmental Protection for meeting low-interest state loan requirements. CH2M also provided design engineering assistance to the Authority during construction of Phases 1 and 2.



Adams Street WWTW PURAC Filter Cells

CH2M DAF Experience

CH2M has been working since the early 1990s in the testing, design, construction, and startup of DAF facilities—first, standard rate, and more-recently high-rate. Over the past 20 years, CH2M has worked with each of the major DAF manufacturers providing over 20 percent of the current DAF installations in North America, as well as several of the largest high-rate DAF systems in North America. CH2M has incorporated DAF treatment on other water system projects across the world, including for seawater desalination pretreatment, stormwater treatment, wastewater clarification and thickening, and industrial water/wastewater treatment. **Table 3** presents a summary of CH2M’s DAF experience.

TABLE 3
Summary of CH2M HILL DAF Experience

Plant	City	Year	Capacity, mgd	Vendor	Retrofit or New	High Rate?	Pilot	Design/ Construction/ Startup
Yorktown WTP	Yorktown, NY	1994	6	Purac	New	No	✓	
Wachusett Reservoir	Boston, MA	1995	400	custom design	New	No	✓	
Belleville WTP	Belleville, ON, CA	1996	21	custom design	New	No	✓	✓
Lake Washington WTP	Melbourne, FL	1998	15	ITT Leopold	New	No	✓	
Madbury WTP	Portsmouth, NH	2005	8	IDI	Retrofit	Yes	✓	
Lake Deacon WTP	Winnipeg, MB, CA	2009	105	ITT Leopold	New	Yes	✓	✓
New Great Pond WTP	Weymouth, MA	2010	8	ITT Leopold	New	Both	✓	✓
SEWA Layyah SWRO WTP	Layyah, UAE	2008	5	Austep	New	No		✓
Lake Waco WTP	Waco, TX	2010	90	ITT Leopold	New	Yes	✓	✓
Perdue WTP	Chula Vista, CA	2011	40	ITT Leopold	Retrofit	Yes	✓	✓
Whatcom Falls WTP	Bellingham, WA	2011	24	Roberts/ Enpure	Retrofit	Yes	✓	
Bay Bulls Big Pond WTP	St. John’s, NF, CA	2012	33	ITT Leopold	Retrofit	No	✓	✓
Petty Harbour Long Pond WTP	St. John’s, NF, CA	2012	7	Corix	New	No	✓	✓

Lake Whitney Water Treatment Plant, New Haven, CT (2005). CH2M, under the management of Mike Wilson, and as part of a teaming agreement, pilot tested and designed the new Lake Whitney Water Treatment Plant for the South Central Connecticut Regional Water Authority (Authority). The plant, which has a maximum capacity of 20 mgd and a firm capacity of 15 mgd, operates using dissolved air flotation (DAF), ozonation, and deep bed granular activated carbon (GAC) filters. The system design includes provisions for the addition of ultraviolet (UV) disinfection in the future.



After pilot testing, the DAF process was selected based on its ability to remove particulate matter included algae, fine silts, and very low turbidity water that is more susceptible to flotation than to settling. The clarification process operates at a design loading rate of 6 gallons per minute (gpm) per square foot (sf) with a system supplied by Parkson. The treatment facility design includes a ground source heat-pump heating system, a “green” vegetated roof, a natural stormwater and site runoff treatment system, and a number of other ecologically and environmentally friendly features that will make this a notable model for ecological designs.

The Client’s Project Design Committee selected both the architect and landscape architect to work with CH2M on the conceptual design. The architectural features of the plant were designed by a subconsultant and the project has been selected for an international exhibit on Architecture and Water at New York’s Van Allen Institute of Architecture.



CH2M worked with the design team, contractor, and Authority following the construction bid opening to provide value engineering to achieve cost reductions. CH2M also provided services during construction and startup for the new water treatment plant, which was officially dedicated in September 2005. CH2M continues to assist with the optimization of the treatment plant as operations continue.

H5 Wet Weather Pump Station (Design 2014, SDC 2015-2016).

CH2M completed the design of the H5 Wet Weather Pumping Station and then provided services during construction. This stormwater management improvement project consisted of the construction of a 40 mgd pump station for the H5 drainage basin to pump excess wet weather flow to the Hudson River during major storm events that coincide with high tide. The project included a below-grade pump station that intercepts flows from the H5 outfall and pumps the flow back into the existing H5 outfall at the intersection of 11th Street and Sinatra Drive North. Additionally, a below-grade electrical vault was constructed to house the electrical and instrumentation and controls equipment that service the pump station. Lastly, an emergency generator was installed should there be power outage when the pump station is online.



H5 Wet Weather Pumping Station

H1 Screening and Wet Weather Pump Station Design and

Services During Construction (2008 to 2011). CH2M completed the design work and bidding phase of the project, and provided construction oversight. The H1 CSO Screening and Wet Weather Pump Station was placed into successful initial operation in October 2011. The pump station was designed to relieve street flooding in the southwestern portion of Hoboken associated with intense storm events occurring at high tide in the Hudson River. The wet-weather pump station operates during storm events that coincide with high tide, screening and conveying excess combined sewer overflow that would otherwise be trapped in the collection system during these conditions, causing street flooding. CH2M worked closely with important project stakeholders, such as; New Jersey Transit, Port Authority, and the Hudson County Engineer's Office to coordinate acceptable locations for the CSO screens, pump station and electrical support facilities. CH2M performed the permitting services for this project to obtain permits for, or from the following: Waterfront Development, Treatment Works Approval, Soil Erosion and Sediment Control, and U.S. Army Corps of Engineers signoff. The design maximizes the use of existing outfalls and easements to convey the combined storm flow to the river. The project was honored with a 2012 ACEC NJ Engineering Excellence Distinguished Award and a National Recognition Award in the 2012 ACEC Engineering Excellence Awards (EEA) competition.



Completed H1 WWPS Electrical and Controls Building

NHSA WWTP Services During Construction (2007 to 2017)

Our Parsippany office has provided Engineering Services for bidding and services during construction for many of the Authority's projects at its WWTPs. Here is a listing of some of the more recent projects in the past ten years:

- Adams Street WWTP Ultraviolet (UV) Disinfection System Replacement (2009-2012)
- Combined Sewer WWTP and Pump Station Improvements Project (2008 to 2013) - including replacement of three PURAC recycle pumps and isolation valves at the Adams Street WWTP.
- River Road WWTP Emergency Trickling Filter Media Replacement Project (2008 to 2009)
- 2008 WWTP Improvements Project (2007 to 2009)
- Adams Street WWTP Alternative Energy Project (2004 to 2010).
- Adams Street WWTP Mechanical Bar Screen Replacement (2004 to 2006)
- Adams Street Sludge Pump Replacement (2007 to 2008)
- Adams Street WWTP Pump Controls Replacement Project (2004 to 2008)
- Adams Street WWTP Improvements Liquid Treatment Processes Project (2006 to 2011)
- River Road WWTP Mechanical Bar Screen Replacement and Outfall Pier Improvements (2007 to 2009).
- River Road WWTP Improvements to Liquid Treatment Processes Project (2006 to 2011)

Proposed Project Team Experience

CH2M delivers local team experienced with providing services to the Authority, supported by industry experts to deliver exceptional services during construction. CH2M is proposing a project team with a proven track record of success in delivering projects for the Authority – a team that is poised to meet any project challenges that may arise. We are offering a seasoned project team which, because of its experience on similar projects, is able to anticipate issues and potential problems before they occur. Our team members have learned through experience how to solicit the resources they need to solve any given problem, thus protecting the project's cost, schedule, and quality. Our staff has worked on numerous projects for the Authority. We have expert knowledge of the collection system, WWTPs, pump stations, and solids/floatables facilities. More importantly, our staff knows the way the Authority plans and executes projects and knows the Authority's expectations of their consultants.

Management Staff



Mike Wilson, PE—Project Director and Client Services Manager

Mike will serve as the project director and client services manager for this contract to ensure that our project team has the necessary resources that will be needed. Mike is an experienced project director and wastewater engineer with over 30 years of experience that includes program and project management, design (conceptual through final), services during construction, and post-construction services for numerous wastewater treatment facilities. Mike has been lead design engineer on upgrades and modifications to numerous WWTPs. He is experienced in preparing WWTP studies and technical reports. Additionally, Mike has provided resident engineering services on major construction projects. **Mike's experience with the Authority includes: Program Manager, H1 and H5 Wet Weather Pump Stations; On-Call Services Coordination; Park Avenue & 11th Street Siphon Assessments and Design; W1234 Solids/Floatables Design; H6/H7 LTCP Project; and, all three phases of the PURAC replacement designs.**



John Tobia, PE—Project Manager

Mr. Tobia offers exceptionally strong management and leadership experience and will serve as the project manager for this contract, responsible for regular communications with the NHSA and overseeing the efforts of our project team delivering the work. John is a Principal Project Manager with 30 years of experience in the planning, design, and construction of a diverse spectrum of water and wastewater infrastructure improvement projects. Over the past 13 years, Mr. Tobia has worked on all facets of North Hudson Sewerage Authority capital improvement projects; including, project management, Engineer-of-Record responsibilities, construction management, and hands-on startup services. **John is the signing engineer on the PURAC Phase III design. John's construction phase services experience with the Authority includes: Solids/Floatables facilities; H1 Wet Weather Pump Station; H5 Wet Weather Pump Station; Adams Street WWTP Pump Controls Replacement Project; Adams Street WWTP UV Replacement, Adams Street WWTP Sludge Pump Replacement; Adams Street WWTP Mechanical Bar Screen Replacement; Adams Street WWTP Alternative Energy Project; 18th Street Sanitary and Wet Weather Pump Station Improvements; River Road WWTP Mechanical Bar Screen Replacement and Outfall Pier Improvements; River Road WWTP Improvements to Liquid Treatment Processes; River Road WWTP Emergency Trickling Filter Media Replacement Project; and the Kerrigan Avenue Sewer Replacement Project.**



Dejan Davidovic—Resident Engineer

Mr. Davidovic will serve as the resident engineer for this contract and will provide daily inspection tasks to ensure work is in conformance with the contract documents. Dejan has experience in a wide variety of large-scale construction projects locally and internationally with recent project experience as a lead mechanical engineer and assistant resident engineer work at New York City's WWTPs. He reviews installed work and ensures it complies with the project specifications and drawings as well as other relevant codes and standards. He reviews and responds to contractor's RFI and RFC queries to minimize wait time for the contractor. He supports installation and testing of mechanical systems by coordinating with the product vendor and all related contractors to ensure appropriate installation and operation of systems. Finally, he's experienced in weekly reporting of contractor's performance and activities, providing data and analytical input to schedule analyses, pricing change orders and performing risk reviews. For this project, Dejan will coordinate reviews and responses to all RFIs and submittals in addition to his daily site inspection efforts. He will also conduct progress meetings, and review contractor pay applications. Dejan offers 10 years of experience in mechanical engineering, inspection services, and resident engineering, and enjoys strong working relationships with owners, engineers, and contractors.

Design Engineering Staff

The following staff all worked on the PURAC Phase III Design and will continue providing engineering design services to the project team throughout the bidding and construction phases of the project.



Roger Harte, PE—Instrumentation and Controls (I&C)

Roger was instrumental in troubleshooting the Phase I Purac Instrumentation and Control Programming during the summer of 2017 and worked onsite with the Services During Construction Engineer and plant operations to get the system response time satisfactorily tuned. Mr. Harte has 21 years of experience designing the electrical components of federal and commercial facilities for new construction, renovations, and expansion and specializes in building automation and surveillance systems. His diverse background includes water and wastewater automation and control systems, PLCs, HMIs, wireless communications, wired communications, electrical engineering, and project management. In 2015 and 2016, Roger was part of the project team recognized as being instrumental for achieving the highest level of Quality and Client Satisfaction Management Award for Allegheny Ballistics Laboratories, WV Removal Actions. He was also co-author of "A Review of the Effects of Urbanization on Natural Waterways in Northern VA" presented at the Virginia Lakes and Watershed Association's annual meeting.



Arnot (AJ) Gillum, PE—Structural

Mr. Gillum has 20 years of experience in the technical and management for structural design aspects of projects. He is an expert in evaluation and restoration of existing structures and building envelope systems, including performing structural evaluations, repair option analyses, and structural retrofits. His experience includes the evaluation and restoration of precast, post-tensioned and conventionally reinforced concrete structures.



Kevin Baird, PE—Process Mechanical

Mr. Baird is a process mechanical engineer with 9 years of experience. His experience includes design and construction services for both water and wastewater facilities including treatment, pump stations, solids handling, chemical feed systems, HVAC and painting. Kevin is currently leading the mechanical systems design for the Phase III PURAC System Upgrades at the Adams Street WWTP. Kevin also worked on the detailed design of the PURAC Phase I and Phase II improvements. This experience gives him working knowledge and a complete understanding of the PURAC facilities, as well as NHSA's standards and systems.



Peter Sokolow, PE—Electrical

Mr. Sokolow has 48 years of experience with electrical and control system engineering for public and government facilities, including vehicle maintenance facility upgrades. His wide range of experience includes medium voltage substations, low voltage switchgear distribution apparatus and motor control centers, and supervision of electrical apparatus shutdown and alteration to equipment with minimal interruption to plant operations. Peter has worked on several NHSA facilities and infrastructure projects including field investigation services to assess failed equipment at Adams Street WWTP for NHSA that was destroyed in Superstorm Sandy.



Joe Nattress, PE—Senior Technical Process Consultant

Mr. Nattress has 25 years of experience in drinking water, reuse, and tertiary wastewater treatment projects as a process lead and senior technical consultant. He serves as CH2M’s subject matter expert for DAF on water projects used for clarification, and has experience with all the major water DAF vendors. Joe brings firsthand knowledge and understanding of the project, the Authority, and the objectives of the overall project having served as the senior consultant for the initial PURAC rehabilitation design and vendor selection, and worked on the detailed design of the PURAC Phase III improvements.



Linda Wancho, PE—Senior Technical Process Consultant

Ms. Wancho has more than 30 years of environmental engineering experience concentrating on drinking water technology applications that include facility evaluations, bench and pilot studies, design, permitting and facility start up. Ms. Wancho also has experience in security risk assessments and emergency response planning. For NHSA, Ms. Wancho has served as the Project Manager for the PURAC facilities assessment and design of upgrades since 2012. She has played a key role in development of the phased approach for improvements, and has lead the design team in completion of the three design phases. In addition to her role as Project Manager, Ms. Wancho has provided input on the process performance and design. She will offer this historical project knowledge and process input for the project through construction. Most recently, Ms. Wancho is serving as Project Manager for Passaic Valley Water Commission Emergency Standby Generator project at their Little Falls Water Treatment Plant. This \$28 million, 2-year construction project includes: flow through switchgear, four 3 MW emergency generators and supporting systems.

Special Inspections

ANS Consultants, Inc.—Special Inspections

ANS Consultants, Inc. (ANS) is a full-service Engineering Services and Construction Materials Testing Laboratory located in South Plainfield, NJ. ANS has a full-time staff of 60 employees, consisting of Professional Engineers, Senior Engineers, Project Managers and Technicians. ANS Consultants provides Construction Material Testing Services such as concrete, asphalt, and soil testing as well as specialized Engineering Services in NJ, NY, PA, DE, MD, VA, CT and MA. Relevant ANS testing and inspection services include the following:

- Special Inspections of: Concrete placement, reinforcing steel, anchor bolts, and structural steel
- Full time CAWI and CWI welding inspectors
- Certified to perform Ultrasonic testing of welds, magnetic particle testing or liquid dye penetrant testing either on the job or in the laboratory
- Concrete coring and soil sampling inside the building, below floor slab
- Asbestos testing, lead base paint sampling and testing, waste classification of soil samples for TPHC, TCL/TAL
- Concrete Cylinder testing and reporting.