



October 15, 2025

Angelo Gaudio, P.E.  
Executive Director  
Albany County Water Purification District  
1 Canal Road, South  
Albany, NY 12204

**RE: ACWPD On-Call Contract  
North Treatment Plant Advanced Grit Removal Project  
CHA Proposal No.: X89902.002**

Dear Angelo,

Per your request, CHA Consulting, Inc. (CHA) is pleased to provide this proposal to the Albany County Water Purification District (District) to prepare the Basis of Design Report (BODR) for the North Treatment Plant Advanced Grit Removal Project. CHA proposes to partner with Hazen and Sawyer (Hazen) on this task assignment based on their extensive experience with the design, construction, and operation of the recommended grit removal technology. Hazen's reputation is founded on providing high quality technical services to meet the needs of the water quality and water supply industries. Key personnel resumes with specific experience relevant to this assignment are included with this proposal. Our proposed project background, scope of services, project schedule, and professional fee are presented below for the Board's consideration.

#### **PROJECT BACKGROUND**

The Albany CSO Pool Communities Corporation is an organization comprised of Capital Region municipalities with a focus on developing and implementing water infrastructure projects that will improve the water quality of the Hudson River and its tributaries. In 2014, six (6) Capital Region municipalities (i.e., Albany, Cohoes, Green Island, Rensselaer, Troy, Watervliet) joined the Albany County Water Purification District and Rensselaer County Sewer District to create this partnership. The Corporation is responsible for developing and executing the Albany Pool CSO LTCP, which is mandated by a NYSDEC Administrative Order (DEC Case # CO 4-20120911-01) to protect and improve water quality in the Capital Region, and is charged with facilitating infrastructure improvements for wastewater systems in a fiscally and environmentally sound way.

The District owns and operates the North and South Wastewater Treatment Plants, along with the associated conveyance interceptors, serving a combined population of over 190,000 residents. The North Plant is located at 1 Canal Road South in the City of Albany, serving to treat wastewater flows from several Albany Pool CSO communities (i.e., Albany, Cohoes, Green Island and

Watervliet). The District currently operates the North Plant under SPDES Permit Number NY0026875 which was recently modified, effective date of March 1, 2025. DEC, Region 4 staff conducted an annual inspection at the District's north and south wastewater treatment plants on March 20, 2024. On June 21, 2024, DEC, Region 4 subsequently issued a Notice of Violation (NOV) to the District. Based on the annual inspection, the North Plant was assigned an "unsatisfactory" rating in part due to concerns of the overall condition and age of critical equipment.

A Capital Improvement Plan (CIP) and Engineering Report was developed on behalf of the District in May 2024. This document evaluated the current condition and criticality of the treatment train process units in order to assess risk of failures and prioritize capital improvements for a ten-year period. Critical assets at the North Plant have exceeded their anticipated service life and are experiencing increasing maintenance issues. The CIP recommended replacement equipment and other system improvements to address current operational challenges and threats; and identified remedial measures or actions necessary to improve the resiliency of critical assets in consideration of climate change.

The proposed new grit system improvements will increase the resiliency of the plant operations by reducing operational issues currently being experienced. Specifically, the improvements will abate existing limitations and potential failures of the existing grit system which result in solids carry-over of the headworks treatment process; and which require long down-time periods due to the complications of securement of materials for the old system and extensive time needed for repairing these types of mechanical failures. Furthermore, the advanced grit system will enhance the sludge processing operations by reducing the inert material currently being conveyed to the incinerators, thereby reducing energy costs. Maintaining the District's North Plant operations is a critical component for treatment of wet weather flows in the region, and for ultimately achieving water quality compliance.

## **SCOPE OF SERVICES**

The District's goal is to design, permit, bid, construct, and place into operation a new grit removal facility at the North Plant. This preliminary assignment is intended to develop the BODR which will outline the geotechnical conditions, site design, hydraulic modeling, structural design, mechanical design, electrical design, instrumentation design, communications design, and consideration for maintenance of operations during construction. It is our understanding that the District would like to abandon the existing grit removal system and construct new grit removal facilities. The preferred location of the new grit removal facilities will need to be determined as part of this work assignment. The Scope of Work includes the following major elements:

- New high-performing stacked tray grit removal system, including: HeadCell® Grit Concentrator Units, grit washing and dewatering units, grit pumps and other accessory equipment.
- Design and construction of a new grit and screening loadout facility and accessory equipment.

- Evaluation of the existing plant water system (PWS) to deliver PW to the new grit removal facility.
- Provisions to bypass the primary influent channel for the new grit system for maintenance purposes.
- Provisions for Maintenance of Operations of the existing facility during construction.
- Modifications to the site to provide access to the grit removal facility and grit load out facility.

### **Task 1 - Project Management and QA/QC**

The subtasks listed under Task 1 – Project Management and QA/QC shall cover the duration of the Project and engineering services outlined herein.

#### **1.1 General Project Management Activities**

CHA shall provide general project management throughout the project to include oversight and coordination of all subconsultant(s) efforts, staffing/personnel administration in executing this project internally and with the District. CHA shall monitor scope, schedule, and budget. General project management shall include developing and maintaining the project schedule, monthly status updates, and monthly invoices.

#### **1.2 Meetings and Workshops**

CHA shall conduct all meetings and workshops to be held at the North Plant and/or via Teams. The workshops shall be attended by CHA, subconsultant(s), District personnel and others as appropriate, and shall be conducted as a forum for discussion and resolution of issues critical to the success of the Project. As appropriate, CHA shall prepare materials for review by the District during the workshop as required for the team to have informed discussions and make decisions. Meeting materials may include, but are not limited to, agenda, PowerPoint presentations, and other supporting materials. CHA shall prepare minutes for each of the meetings summarizing and documenting the attendees, major points of discussion, decisions made, and action items for team members.

##### **1.2.1 Project Kickoff Meeting**

The kickoff meeting shall be conducted at the beginning of the project to discuss the design scope of work, project schedule, and project procedures.

#### **1.3 Quality Assurance/Quality Control (QA/QC)**

CHA and our subconsultant(s) will provide QA/QC review of the project work products and deliverables to check for completeness, correctness, accuracy, conformance to design standards



and validity of assumptions, and design criteria.

### **Task 2 - Grit Characterization Study**

This task includes conducting a grit characterization study to better understand the composition of grit in the wastewater streams, as exhibited in the raw influent downstream of the primary treatment mechanical screens. Results of the grit characterization will allow the design team to evaluate the design removal properties and efficiencies required for the proposed grit removal system. The Grit Characterization Study will be conducted as follows:

- Capture of dry weather flows for grit from two (2) locations in the flow stream, over a period of approximately four hours of a given dry weather flow day. Sampling will begin in the morning prior to the first influent peak of the day. Grit samples will be collected and tested for at least three (3) sampling times to evaluate diurnal flow impacts on grit concentrations. It is assumed that samples will be obtained prior to and downstream of the existing grit chambers.
- Capture of wet weather flows for grit from two (2) locations in the flow stream, over the period of a wet weather event. Sampling will be scheduled based on the weather forecast and radar data in an effort to capture first flush for the event. Subsequent sampling times will be based on the expected duration of the event and will include collection and testing of wet weather grit samples for at least three (3) sampling times. Again, it is assumed that samples will be obtained prior to and downstream of the existing grit chambers.
- All samples will be transported off-site for sieve and settling velocity testing.
- The grit characterization analysis will include physical size distributions, settling velocities, and grit characterization (in sand equivalent size utilizing the ViCAs method (i.e., a 2-meter settling column).
- Review and analysis of any additional historical records and/or data for grit being collected at the plant.

Following completion of this task, a review meeting will be conducted to present the key findings. This meeting will be attended by CHA, subconsultant(s), District staff, and others as appropriate. CHA in conjunction with our team members will prepare the agenda, presentation materials, and draft and final meeting minutes. A Grit Classification Technical Memorandum (TM) will be developed to document the findings of the grit characterization evaluation. The TM will include a grit characterization data analysis, and conclusions and summary of impacts on design. Our team will submit the draft TM to the District for review and comment, approximately two weeks prior to the Task Completion meeting. The Grit Classification TM will be finalized following receipt of the District comments for inclusion in the BODR.

### **Task 3 - Field Investigations and Desktop Assessments**

The task includes the activities required to inform the design of the grit removal facilities and new grit loadout facility. The following field investigations and assessments will be conducted:

#### **3.1 Site Visit and Condition Assessment**

CHA will coordinate with District staff to determine a date and time that the flow to the North Plant can be temporarily stopped such that an inspection of the existing grit effluent and primary clarifier influent channels can be accessed and visually inspected for structural deficiencies. As part of this subtask, CHA will collect measurements and available data pertaining to the normal channel operating depths for dry weather and wet weather conditions. We anticipate that the inspection of these channels can be completed within 2 hours or less. Furthermore, this subtask will evaluate the current and planned land uses in the vicinity of the existing grit tanks to evaluate alternatives for the citing of the new grit removal facilities.

#### **3.2 Geotechnical Investigation**

Under this subtask, CHA will conduct a desktop assessment of the existing geological data and information available for the site. Specifically, CHA will collect and review available soil boring information for the North Plant, as documented in the original design plans and as developed for previous District projects, as well as publicly available geologic mapping and geotechnical reports contained in CHA's geotechnical archives near the project site. All findings will be summarized in a Geotechnical TM along with preliminary recommendations pertaining to the subsurface foundation(s) types including anticipated lengths and estimate of allowable axial capacity; excavation support system options based on the planned excavation depths, groundwater levels and soil conditions; seismic design parameters in accordance with NYS Building Code; anticipated requirements for construction dewatering operations; and recommendations pertaining to the potential need for additional on-site subsurface exploration. CHA will submit the draft TM to the District for review and comment; and will subsequently complete the final Geotechnical TM following receipt of any District comments for inclusion in the BODR.

#### **3.3 Base Mapping**

Base mapping for the BODR to be used for preliminary modeling efforts and design concepts will be based on the available record plans for the North Plant (e.g., original record drawings, plans and/or mapping developed for previous improvement projects). Any impacts to buried utilities will be evaluated based on a desktop assessment, and additional investigations and/or testing will be recommended for the design phase of the project. As part of this subtask, CHA will verify record plans by taking depth and width measurements of the existing grit effluent and primary clarifier influent channels assuming that the flow can be stopped temporarily at the North Plant.

### 3.4 Hazardous Materials Survey

Under this subtask, CHA will perform inspection of the primary treatment building, in areas potentially impacted by the project, for the presence of potentially hazardous materials. Samples of any potential hazardous materials will be collected and analytical testing will be performed in accordance with the applicable material standards. All findings will be summarized in a Hazardous Material Survey TM along with any pertinent analytical results and abatement recommendations. CHA will submit the draft TM to the District for review and comment; and will subsequently complete the final Hazardous Material Survey TM following receipt of any District comments for inclusion in the BODR. Any abatement of identified hazardous materials will be completed outside of the scope of this current assessment.

### **Task 4 - Basis of Design Report**

The North Plant currently experiences a wide range of flows covering normal dry weather periods and wet weather conditions for the CSS. Current wastewater loadings have over-burdened the existing grit removal tanks causing failures of the chain flight system, resulting in excessive cleaning and maintenance efforts and costs. Additionally, the limitations of the existing grit system removal capabilities allow smaller particle size inert solids to pass through the grit system and settle in the primary clarifiers impacting the primary clarifier performance and causing sludge pump blockages. The North Plant has experienced significant grit accumulation, especially during and after wet weather events, from combined sewer flows. With the existing equipment, plant staff must routinely drain the grit tanks and remove grit buildup in the bottom of the channels via shovels and buckets. This is a very labor-intensive process requiring multiple staff to be directed away from other duties onsite.

Based on current recommendations, the preferred alternative for advanced grit removal for the North Plant is the installation of the HeadCell® grit concentration units. It is anticipated that the implementation of the preferred alternative utilizing the HeadCell® grit concentrator units will provide advanced grit removal (i.e., 95% high-efficiency removal for particle sizes down to 75 microns) which will best serve to protect downstream treatment processes and equipment. Specifically, the advanced grit removal system is needed to continue to support the higher solid loadings experienced during more extreme wet weather events. This task includes the development of a BODR to document current conditions and provide the final definition of the design elements to gain regulatory approval of the project, prior to advancing into the preliminary and final design phases.

#### 4.1 Basis of Design Report

Improvements associated with the recommended alternative shall be summarized in a BODR including preliminary design criteria, operational and maintenance requirements, maintenance of plant operations (MOPO) staging, construction materials, conceptual layout drawings, site plan, preliminary one line drawings, preliminary P&IDs, and system hydraulics. The report will

summarize the findings from the TM's, with inclusion of the TM's in the Appendices. Lastly, the BODR will include an Association for the Advancement of Cost Engineering (AACE) Class IV opinion of probable project cost for the recommended alternatives.

#### 4.2 Design Workshop

CHA, and its subconsultant(s), shall conduct a design workshop to review the submittal package and to solicit the District's feedback. The design review workshop shall utilize the 3D model or renderings to facilitate discussions. The design team shall prepare and present materials, including the use of 3D design models/images to review the concept for the grit system design. Items to be developed by the design team in preparation of the Workshop include:

- 3D model and/or renderings
- Preliminary P&IDs
- Opinion of Probable Project Cost (ACCE Class IV)
- Preliminary MOPO Considerations

CHA shall incorporate feedback from the District into the final BODR and submit the BODR to the regulatory and funding agencies for review and approval. CHA will conduct a meeting, if required, with the regulatory and funding agencies.

### PROJECT DELIVERABLES

Deliverables for the project will include Draft and Final Basis of Design Reports, for owner review and comment, which will include the following:

- Grit System Equipment Specifications
- Identification and Evaluation of Alternative Layouts for the Equipment
- Concept Detailing
- Hydraulic Modeling Results
- BIM/Revit Modeling of the Grit System
- Grit Classification Technical Memorandum
- Structural Technical Memorandum
- Electrical Technical Memorandum
- Geotechnical Technical Memorandum
- Hazard Materials Technical Memorandum
- Order of Magnitude Costs

### PROJECT QUALIFIERS

- The District will provide any available existing reference drawings, and maintenance logs for use in developing recommendations.
- Assessments shall be based upon visual observations and information provided by the owner, no functional or performance testing will be performed by CHA.



- The BODR defined in this proposal will meet the new requirements defined in the new Engineering Report Outline for New York State Wastewater Infrastructure Projects, as prescribed by the EFC, dated October 1, 2025.
- The task assignment will comply with the State Revolving Fund Mandatory Terms and Conditions, dated October 1, 2023, should it be requested by the District.
- It is anticipated that the design and construction services for the project, beyond those services specifically prescribed in this proposal, will be defined based on the BODR and will be negotiated at a future date.

## PROJECT SCHEDULE

The District is currently in the process of closing a subsidized financing agreement, under the New York State Clean Water State Revolving Fund (CWSRF), for Phase 1 improvements for the North and South Plants (IUP Project No. C4-5419-08-00). Furthermore, the District should receive notice of any potential grant funding through the EFC WIIA program by December 2025. CHA is available to begin work immediately upon receipt of notice to proceed (NTP) from the District. It is currently anticipated that this contract will be executed in late 2025 or early 2026, and that the BODR can be developed within 6 months from the NTP.

## PROPOSAL FEE

CHA proposes to be compensated on a lump sum basis in a total fee amount of Two-Hundred and Sixty-Two Thousand and Five Hundred Dollars (\$262,500.00). It is understood that CHA will not exceed the established budget amount without specific authorization from the District.

Task Description	Fee & Expenses
Task 1 - Project Management and QA/QC	\$35,000
Task 2 - Grit Characterization Study	\$22,500
Task 3 - Field Investigations and Desktop Assessments	\$35,000
Task 4 - Basis of Design Report	\$170,000
<b>Total Budgeted Professional Fee &amp; Expenses</b>	<b>\$262,500</b>

We trust that this information is consistent with your project goals and objectives. **CHA is ready to expedite this work upon authorization to proceed.** We would like to thank the Albany County Water Purification District for consideration of CHA Consulting, Inc. in support of this project. Please do not hesitate to contact me at (518) 369-8991 or [mmiller@chasolutions.com](mailto:mmiller@chasolutions.com) if you have any questions. We look forward to working with you towards the successful completion of this project.

Sincerely,



Michael F. Miller, P.E.  
Vice President

cc: R. Ostapczuk, Hazen