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
South Treatment Plant Advanced Grit Removal Project
CHA Proposal No.: X89902.001

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 South Treatment Plant Advanced Grit Removal Project. CHA previously assisted the District with the preparation of a Preliminary Engineering Report (PER), dated July 2025, as well as supplemental grant application materials in support of the project. It is understood that the BODR will advance the recommendations and concepts presented in the previous documents.

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 South Plant is located at 209 Church Street in the City of Albany (serving 90 percent of the City of Albany as well as the Port of Albany); and functions to treat wet weather flows from the City's combined sewer system (CSS). The District currently operates the South Plant under SPDES Permit Number NY0026867 which was recently modified, effective date of March 1, 2025. The South Plant was issued an Administrative Order on Consent (DEC Case# R4-2017-0426-210) for operation of the sewage sludge incinerators at the South plant under Title V permit 4-0101-00020/00012. In addition, 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 South 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 South 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 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).

Since the issuance of the CIP and Engineering Report, the operations of the grit removal system at the South Plant have been further impacted by actions mandated under the implementation of the Albany Pool CSO LTCP, including the required increase in influent flows and loadings (up to 45 mgd, as negotiated as part of the CSO LTCP and recent SPDES permit modifications). In addition, operation of the Beaver Creek Satellite Treatment Facility (BCSTF) includes draining and heavy cleaning of the contact tanks following storm events. It is during these cleaning events that a substantial concentration and volume of inert solids are washed down and conveyed to the District's South Plant, which have created operational and compliance issues.

The PER for the South Plant Advanced Grit Removal Project was previously developed by CHA to amend the original assessment and to specifically develop recommended actions to advance the replacement of the South Plant grit removal system, which has been designated as a high priority by the District. The PER documented the existing operational conditions and challenges for the South Plant and updated the recommendations pertaining to the grit removal system. The proposed 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 South 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 South 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 adjacent to the existing Preliminary Treatment Building. This 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 and as collected at the BCSTF. 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 at the South Plant. 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 at the South Plant. 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.

- After a wet weather event, two (2) samples of grit will be collected from the BCSTF. The first sample will be an influent sample prior to draining the contact tank and a second sample will be a raw solids sample of the materials that settled in the contact tank prior to flushing the tanks.
- 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 South 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.

3.2 Wastewater Treatment Plant Tours

CHA, its subconsultant(s), and District staff shall conduct a site tour of the grit removal facility at Onedia County's Wastewater Treatment Plant and/or schedule virtual meeting(s) with Onedia

County staff that operate the facilities to provide the District's staff with an opportunity to inquire about vendor responsiveness, system performance and operational experiences.

3.3 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 South 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 potential 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.

3.4 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 South 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 South Plant.

3.5 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 South Plant currently experiences multiple flow regimes covering normal dry weather periods, wet weather conditions for the CSS, and post-event draining and flushing associated with the BCSTF. 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 from the BCSTF to pass through the grit system and settle in the primary clarifiers. Aside from impacts to the primary clarifier performance and sludge pump blockages, the introduction of inert solids received from the BCSTF has also negatively impacted sludge processing at the plant. During BCSTF flushing operations the combined sludge volatile solids concentration is reduced significantly, 49% volatile solids as compared to 70% during dry weather conditions. The reduction in volatile organics to the incinerator results in increased natural gas consumption as more gas is needed to maintain adequate operating temperatures. Additionally, the decreased volatility has resulted in higher percent solids of 35-37%, as compared to 22-24% under normal conditions from the belt press dewatering system. This has resulted in the District incurring an increased number of weight limit exceedances in violation of the Title V permit.

The existing grit system is not capable of safeguarding downstream treatment processes and has experienced unplanned failures as the system has become overloaded. The South Plant experiences significant grit accumulation, especially during and after wet weather events, from combined sewer flows delivered from the City of Albany's collection system and BCSTF. 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 in the PER, the preferred alternative for advanced grit removal for the South Plant is the installation of the HeadCell® grit concentration units constructed on the east-side of the preliminary treatment building. Implementation of the proposed advanced grit removal system will serve to protect downstream treatment processes and equipment; and allow the District to effectively treat the various wastewater flow conditions experienced at the plant. 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, as well as the BCSTF operations for the post-event draining and flushing of the contact tanks.

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. Furthermore, the BODR will specifically include narrative which defines the maintenance and operations at the South Plant as necessitated by the BCSTF. Labor and material costs associated with the BCSTF will be presented for potential inclusion in the Inter-Municipal Agreement currently being developed to address the ongoing O&M for the BCSTF. 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.

OPTIONAL SUPPLEMENTAL ENGINEERING SERVICES

CHA proposes the following supplemental engineering services in support of the development of a consolidated solids collection and management facility. The consolidated solids area would involve the expansion of the existing garage area on the north-side of the preliminary treatment building. This Scope of Work includes the following major elements:

- Evaluation of the existing structural issues for the preliminary treatment building and definition of permanent structural measures.
- Planned expansion of the garage or loadout area on the east-side of the building.
- Identification of any electrical system modifications and/or replacements, including the ATS for the standby generator to facilitate construction of the expanded grit and screenings loadout facility. For the purposes of this proposal, it is assumed that the electrical improvements

and/or relocations may need to be coordinated through the third-party engineering firm currently supporting the high-voltage improvements project.

- Additional site work to enhance the access and management of materials for hauling.
- Reconfiguration of the screening conveyor and collection system to allow for the placement and operation of the ancillary equipment for the grit removal system.

Additional Background Information

In November 2018, CHA performed a visual structural assessment of the South Plant Preliminary Treatment Building roof framing and associated supporting elements. The inspection was performed to observe and document existing conditions of the roof framing movement, building column and beam cracks, wall cracks and temporary roof shoring structure. Observed structural conditions were summarized in a Technical Memorandum issued by CHA in April 2019, and preliminary recommendations were presented.

Based on the fact that there was no discernable cracking in the exterior concrete masonry wall, brick veneer, and interior concrete walls and columns, the movement of the roof appeared to be due to the failure of the perimeter L-beams bearing on the precast columns. CHA recommended reconfiguring and replacing the roof tees to allow for an expansion joint in the roof that is in alignment with the floor expansion joints. This would necessitate the installation of new columns and new perimeter beams.

The precast columns that have cracked may be able to be repaired, but it was stated that further investigation would be required when the connection to the beam is exposed. In addition, investigating if there is a positive connection on the topside of the single tee on the east and west walls was recommended. If there is not a positive connection, one should be provided to transfer the diaphragm shear into the perimeter L-beams. CHA also recommended repairing the spall and crack at the foundation wall in the southwest corner and replacing the concrete masonry wall on the north-side where the conveyor and door lead out to the garage area. Lastly, replacement of expansion joint material was recommended in locations where the material is damaged or missing.

Optional Scope of Services

CHA would recommend that the existing preliminary treatment building be reinspected to document whether or not there has been further movement or changes in structural conditions. Under this task, CHA will specifically confirm needed actions to provide long-term structural support for the building roof system; and evaluate the feasibility for expansion of the garage area with the goal of creating one common solids collection and management area for the screening operations and grit removal system. As part of this task, the solids collection and management area would be reconfigured to best support both operations, considering a two-story configuration to improve access for equipment inspection and maintenance. All work completed under this task would be summarized in a Structural TM which would be referenced in the BODR. These optional services will also include the inspection and development of an equipment inventory for any

required relocation and/or replacement of electrical equipment associated with this alternative. The electrical inspection findings, inventory of potentially impacted electrical equipment and recommendations will be summarized in an Electrical TM.

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
- Layout of Equipment and Concept Detailing
- Hydraulic Modeling Results
- BIM/Revit Modeling of the Grit System
- Grit Classification Technical Memorandum
- Structural Technical Memorandum
- Geotechnical Technical Memorandum
- Hazard Materials Technical Memorandum
- Order of Magnitude Costs

Optional Supplemental Services Deliverables

- Building expansion layout and configuration figures
- Expanded Structural Technical Memorandum pertaining to the current structural conditions of the primary treatment building and potential garage expansion
- Electrical Technical Memorandum pertaining to displaced electrical equipment associated with a potential building expansion
- 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 supplement the previously developed PER to 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 DEC WQIP and/or EFC WIIA programs 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 Eighty-Seven Thousand and Five Hundred Dollars ($287,500.00), including both the base and optional supplemental services. 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	$25,000
Task 3 - Field Investigations and Desktop Assessments	$35,000
Task 4 - Basis of Design Report	$150,000
Task 5 - Optional Supplemental Engineering Services	$42,500
Total Budgeted Professional Fee & Expenses	**$287,500**

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 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