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WASTEWATER DESIGN SERVICES

**CONTACT: Bryan Grogan, PE, Sr. Vice President • bgrogan@pwgrosner.com
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An aerial photograph of a vast green roof installation. The roof is covered with rows of solar panels, interspersed with green vegetation. In the background, a city skyline is visible under a sunset sky with warm orange and yellow tones. A large, semi-transparent green circular graphic with concentric lines is overlaid on the bottom left of the image.

FIRM PROFILE

PWGC: CLIENT DRIVEN SOLUTIONS

MEET PWGC

PWGC was founded by Paul Grosser, PhD, PE, PG, a thought leader who recognized the need for a multi-disciplined engineering and environmental consulting firm that offered a diverse range of services to meet market demand regionally and nationally. Based in Bohemia, NY, PWGC has offices in New York City, Syracuse, Saratoga Springs and Connecticut.

PWGC serves the Northeastern United States and has established an industry recognized reputation for innovative problem solving and providing quality services to municipal, educational, private, public and federal clients. We are dedicated to providing quality products and timely services that result in practical solutions for its clients.

PWGC has a multi-disciplined staff of more than 70 professionals. Our strength lies with these licensed professional engineers, geologists and hydrogeologists, LEED accredited professionals and environmental compliance specialists, which gives PWGC a wealth of experience key to helping bring your project from idea to reality.

CHOOSE PWGC

Whether your objectives are planning, design, redevelopment, remediation or resiliency, PWGC's services are innovative and economical. PWGC is committed to client goals and our dynamic team of professionals provide innovation and flexibility to deliver customized solutions to projects regardless of size, complexity or duration.

THE PWGC DIFFERENCE

What sets us apart is our customized approach to each project, a dedicated, responsive team, our rapport with regulatory agencies and our exceptional project management. PWGC's assets that translate into additional value for you include the following:

- Strong working relationships with key regulatory sector players
- Specialists in regulatory requirements to facilitate quicker approvals
- Highly responsive to budget & time constraints to get your project on line faster
- Project and quality control monitoring to exceed your project needs
- More than 70 dedicated professionals to provide a wide array of services
- Strong understanding environmental compliance standards

Make PWGC's quality environmental consulting and engineering solutions work for you.



PWGC QUICK FACTS

Corporate

- Founded & Incorporated: 1990
- SAM/SBA Registered
- Small Business
- DUNS # 798730966
- Federal ID: 11-3612196

Offices

- Bohemia, NY
- New York, NY
- Saratoga Springs, NY
- Syracuse, NY
- Shelton, CT

Qualifications

- LICENSES - Engineer, Geologist, LSP, NC, NY, NJ, PA, MD, IN, NH, FL, WA
- LEED-AP
- Envision

Service Codes

NAICS

- 562910 Environmental Remediation
- 541330 Engineering
- 541620 Environmental Consulting
- 562998 Waste Management Services
- 541370 GIS Base Mapping
- 237130 Green Services

SIC

- 87489905 Environmental Consulting
- 8711 Engineering Services



SUMMARY LIST OF SERVICES

SEQRA Consulting and Planning Services

- Administration of the SEQRA Process
- Type II Opinion Letters
- Coordinated Review
- Environmental Assessment Forms
- Scoping Documents
- Environmental Impact Statements
- Determinations of Significance
- Findings Statements
- Notices and Assistance with Resolutions
- Land Use and Zoning Assessments

Environmental Services

- Contract Administration
- Petroleum & Chemical Spill Investigation & Remediation
- Remedial Alternative Assessment & Design
- Remedial Construction Management
- Property Transaction Services
 - Due Diligence, RI/FS, PCR
 - Brownfields Redevelopment—Investigation, Remediation, Program Management
 - Phase I, Phase II Environmental Site Assessments
 - NYC E-Designated Sites
 - NYC OER Program Management—Investigations, Remediation, Grant Application
 - Cost Estimating—Property Investigation & Remediation
- Environmental Audits—Assess Environmental Liability
- Environmental Assessment & Contaminant Source Evaluation
- Groundwater Investigation & Remediation
- Aquifer/Pumping Testing
- Risk-Based Approach Solutions
- Site Closure Reports
- UST/AST Management
- Air, Water, Soil & Soil Vapor Sampling/Monitoring Community Air Monitoring
- Environmental & Health Risk Assessment
- Radiological Investigation & Remediation Services
- Hazardous Waste Management
- Soil Management, Certified Clean Fill
- Storm Water Management
- Water Table Evaluation & Flood Mitigation
- Dewatering Design, Permitting & Compliance Sampling

Environmental Compliance/Management

- Air Quality—Title V Permitting, Air Emission Inventories, Tier II & TRI Reporting
- Articles XI & 12 Hazardous Materials Storage Compliance for Nassau & Suffolk Counties, NY
- Chemical/Petroleum Bulk Storage Tanks—Permitting, Audits, Regulatory/Environmental Compliance Management
- Facilities Contingency Plan Development/Management, including SPCC, SWPPP, FRP
- Compliance Review
- Regulatory Compliance Reporting
- FAR 139.321 Fire Safety Inspections
- Fuel Storage Facilities & Mobile Fuel Equipment

Industrial Hygiene

- Asbestos Inspections and Testing
- Indoor Air Quality

- Legionnaire Insoections
- Lead/Mold Testing and Remedial Plans
- Noise Surveys

Expert Counseling/Client Representation

- Expert Testimony, Support & Counsel

Wastewater/Water Supply

- Water Supply/Wastewater—Systems, Planning, Design
- Groundwater Modeling
- Site/System/Feasibility Evaluation, Planning & Technical Assistance
- Water Conservation Plan Development

Natural Resource Studies

- Wetlands Delineation, Permitting & Mitigation Design
- Threatened & Endangered Species Surveys
- Migratory Studies
- Ecological Studies
- Ecological Risk Assessments
- National Environmental Policy Act (NEPA) Studies
- Planning
- Watershed Analysis

Energy/Sustainability Solutions

- Geothermal System Feasibility Analysis, Design, Permitting & Construction Management
- Renewable Energy Design for Solar & Wind
- Carbon Footprint Analysis, Profile & Management
- Alternative Fueling Station Planning & Design, Equipment Specification, Construction Observation, Permitting, Compliance & Facility Commissioning for Compressed Natural Gas, Hydrogen, Biodiesel & Ethanol-85
- Building Due Diligence & Energy Studies
- LEED Administration & Sustainable Design Practices
- High Performance Sustainable Buildings
- Energy Conservation & Energy Recovery Alternatives
- MEP/High Efficiency Equipment Solutions
- Power Generation, Cogeneration & Fuel Cells
- Energy Modeling, Utility Rebate Programs & Tax Incentives
- Green Legislation & ARRA Stimulus Grants
- GIS Based Modeling for Wind, Solar & Carbon Footprint Analysis

Civil/General Engineering

- “Best Economic Alternatives” Evaluation
- Comprehensive Feasibility Studies
- Conservation Plan Development
- Construction Planning, Management, QA/QC
- Drainage Planning, Grading & Design
- Evaluation, Planning & Technical Assistance
- Facility Design & Condition Assessment
- Planning & Design
- Property Condition Report

Geographical Information Systems/Global Position Systems

- Data Collection & Conversion
- Infrastructure & Asset Management
- Wetlands & Endangered Species Delineation
- Digital Elevation Model Analysis
- Customized GIS Applications, GIS/CAD Integration
- Database Development, Conversions, Manual Digitizing
- Website Development
- GPS Field Data Collection & Post-Processing
- Remote Sensing & Image Processing



A photograph of a wastewater treatment plant. In the foreground, a concrete weir structure is visible, with water cascading over it. The water is in motion, creating a blurred effect. In the background, there are large circular tanks, likely clarifiers, and metal railings. The overall scene is industrial and focused on water treatment.

**WASTEWATER DESIGN
SERVICES & EXPERIENCE**

MESCHUTT COUNTY PARK - WASTEWATER TREATMENT UPGRADES

PWGC was selected by Suffolk County Department of Public Works to provide professional engineering services to design an innovative on-site wastewater treatment system to replace the existing outdated sewage disposal systems at the park. As part of the project the possibility of grey water reuse was evaluated, unfortunately due to space and cost constraints could not be included in the project. PWGC met with representatives of Suffolk County Parks, Public Works and Health Services to determine the best location for the proposed system. Once the preferred location was established, PWGC developed the engineering report, design plans and specifications for the proposed wastewater treatment system. PWGC completed the design of the project in three months. The new treatment system was unveiled Memorial Day Weekend 2016 and is in use.

PWGC performed the following services:

Design Services

- Performed a field investigation to evaluate the existing conditions
- Prepared an engineering report and design plans for the wastewater treatment system for SCDHS submission
- Addressed SCDHS comments and revise the drawings as required to obtain an approved treatment system
- Prepared applications for letters of non-jurisdiction from NYSDEC
- Prepared technical specifications and budget estimates for the project
- Obtained sediment samples from the existing sewage disposal structures for analysis for abandonment in accordance with SCDHS regulations

Bid Services

- Prepared design documents to be disseminated to contractors
- Prepared proposal pages and a scope of work for obtaining contractor pricing
- Answered contractor questions and issued addendums
- Attended bid opening

Construction Services

- Answered contractor questions
- Reviewed shop drawing submittals
- Perform construction inspections
- Prepare as-built plans and engineering certifications

SUFFOLK COUNTY DEPARTMENT OF PUBLIC WORKS - SAYVILLE/OAKDALE WASTEWATER INFRASTRUCTURE EXTENSION

Suffolk County's Department of Public Works (SCDPW) selected PWGC to conduct the design and oversee the development of wastewater infrastructure known as the Sayville Extension, which will provide wastewater collection and treatment to the greater Sayville region, including West Sayville and Oakdale. This system will tie into Suffolk County's Sewer District No. 3 - Southwest, and will benefit the region economically and environmentally.

PWGC's familiarity with the greater Sayville region was born of years of study resulting from being selected by the Town of Islip to conduct a sewer feasibility study of the southeast quadrant of Town from Great River in the west to Bayport in the east and south of Sunrise Highway. The goal was the development of a plan that would enable the Town to determine those areas that would most benefit from the installation of modern wastewater infrastructure.

To meet the stringent requirements associated with SCDPW's Request for Proposal PWGC assembled a team of knowledgeable and experienced engineers, surveyors and public relations specialists. These accomplished firms will assist PWGC as it moves forward to expertly deliver services associated with the Sayville Extension project.



PWGC has already started its efforts to fulfill this obligation. Our design and engineering professionals have started the groundwork necessary to manage the myriad of important tasks associated with a project of this scale and complexity. The design of the wastewater collection system in the Sayville Extension will tie into the system being designed by PWGC for the Connetquot River Watershed Project. Once completed, this wastewater collection system will be the catalyst for the revitalization of the greater Sayville region.

SUFFOLK COUNTY DEPARTMENT OF PUBLIC WORKS - LAKE RONKONKOMA COUNTY PARK I/A OWTS WASTEWATER TREATMENT UPGRADES

P.W. Grosser Consulting, Inc. (PWGC) was selected by Suffolk County's Department to provide professional engineering services to design an innovative on-site wastewater treatment system to replace the existing outdated sewage disposal systems at Lake Ronkonkoma County Park. As part of the project the positive use of grey water will be evaluated to determine its viability. PWGC will review the park site with representatives of Suffolk County Parks, Public Works and Health Services to determine the best location for the proposed system. Once the preferred location is established, PWGC will develop the engineering report, design plans and specifications for the proposed wastewater treatment system approved for use. The new treatment system is scheduled to be unveiled September 2017.

PWGC performed the following services:

Design Services

- Performed a field investigation to evaluate the existing conditions
- Prepared an engineering report and design plans for the wastewater treatment system for SCDHS submission
- Addressed SCDHS comments and revise the drawings as required to obtain an approved treatment system
- Prepared applications for letters of non-jurisdiction from NYSDEC
- Prepared technical specifications and budget estimates for the project
- Obtained sediment samples from the existing sewage disposal structures for analysis for abandonment in accordance with SCDHS regulations

Bid Services

- Prepared design documents to be disseminated to contractors
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Construction Services

- Answered contractor questions
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- Perform construction inspections
- Prepare as-built plans and engineering certifications

AMBER COURT ASSISTED LIVING FACILITY - SEWAGE TREATMENT PLANT FACILITY UPGRADE

PWGC provided professional engineering services for the design and construction of a new 30,000 gallon per day sewage treatment plant (STP) at the Amber Court Assisted Living Facility. In addition, PWGC also performed Civil Engineering services for the Site design of the new facility.

PWGC created a detailed report for the site of the proposed facility to evaluate the potential for on-site Sewage Treatment. This report was used to successfully gain all requisite regulatory agency approvals necessary to start the design of the facility. After the initial report was approved PWGC proceeded with detailed design of the treatment system, creating detailed plans and specifications for regulatory approval.

In addition to Treatment Plant design, PWGC was also able to offer Site design services. By designing both the Treatment Facility and Site aspects of the new facility in-house, which included the pre-cast masonry structure that houses the treatment facility. PWGC was able to offer greater coordination between site utilities, the new Treatment facility and the new



Assisted Living Facility; offering the client an expedited design and approval process.

Currently, PWGC is providing Professional Services to oversee the construction of the new Treatment plant. After the new Plant is successfully completed, PWGC will continue to oversee the operation of the Plant as the Engineer of Record, responsible for reviewing monthly treatment results and reviewing Health Department Inspections.

TOWN OF ISLIP - SEWER STUDY

The Town of Islip (Town) commissioned PWGC to perform this study to determine the feasibility of providing sewers to a study area located in the southeast section of the town.

PWGC was commissioned to find balance and responsible strategies that can improve the quality of the groundwater and the surface water bodies in the vicinity through a wastewater infrastructure study. In addition to the environmental benefits that will be derived from the installation of sewers, PWGC determined how the installation of the sewers could revitalize targeted commercial centers within the study area. PWGC took the lead role in the following:

- Review existing prepared engineering reports and documents associated to the study area
- Seek failed septic system opportunities for affordable housing or economic development
- Data collection, management and analysis to support decision making via GIS software
- Creation of system specific data by identifying targeted areas to create a sanitary sewer conveyance infrastructure GIS database
- Complete a comprehensive engineering report that discusses the recommended targeted areas to be sewerred
- Organized and attended mandatory public meetings and continue to meet with Islip officials.

ORENCO SYSTEMS, INC. - INNOVATIVE ALTERNATIVE SEPTIC SYSTEM

The County of Suffolk (county) as part of the recommendations made in the Comprehensive Water Resources Management Plan, commissioned a pilot program to study innovative alternative septic systems for single family houses. In order to participate in the program manufacturers of the innovative alternative septic systems teamed with local engineering firms to develop the required site plans for submission to the Suffolk County Department of Health Services (SCDHS).

PWGC was retained by Orenco, to develop the site plan to upgrade the existing sewage disposal system to utilize Orcenco's AX20 RT treatment unit. To develop the site plan in accordance with the requirements of the SCDHS, PWGC performed the following tasks:

- Reviewed the existing SCDHS approved plans for the existing sewage disposal systems.
- Conducted a field inspection at the site to confirm the information shown on the approved plans and to determine the invert elevations of the existing sewer piping.
- Worked with Orenco and the SCDHS in developing a layout of the proposed systems, including the required sampling locations.
- PWGC prepared an engineering letter report regarding the design calculation for the proposed system.
- PWGC perform a field inspection of the installation of the system and prepared the as-built plans and certifications.

VILLAGE OF SAG HARBOR - SEWAGE TREATMENT PLANT ENGINEERING AND SUPPORT SERVICES

Environmental consulting and engineering services tailored to the village's sewage treatment plant (STP) operations and maintenance.

PWGC conducted a comprehensive site evaluation and STP study.

- PWGC provided on-call, troubleshooting, and scheduled assistance for STP operations, administration, and equipment
- PWGC attended Village Board Meetings and met with regulatory agencies to update, communicate, and discuss STP status and relevant issues
- PWGC support included bringing VSH in compliance with Storm Water Pollution Regulations, and assess the potential to add boat waste to the on-site STP (currently disposed of outside the village, at the public STP).



For the initial evaluation and operational study, PWGC visited and inspected the plant with the plant operators to assess operational processes, spare parts, and equipment.

PWGC further conducted a review of STP operating procedures and records, daily monitoring reports (DMR), operation and maintenance (O&M) manuals, related records, and Suffolk County Department of Health Services (SCDHS) inspection reports.

PWGC conducted monthly plant visits to complete, sign off on, and submit DMRs.

In addition, PWGC met with plant operators to discuss and assist with on-going work activities, operations, status of plant equipment, parts and chemical storage, operational problems and difficulties, SCDHS inspections and regulations, and effluent quality for the past month.

From 2004-2009 PWGC provided the VSH with on-call professional services to assist with design and engineering services for the STP plant such as upgrades, including retrofits and modifications, engineering reports, studies, plans, and specifications, permits preparation, construction oversight and administrative services.

SUFFOLK COUNTY DEPARTMENT OF PUBLIC WORKS - SUNY STONY BROOK SD 21 RECHARGE BASIN GROUNDWATER MODELING

PWGC conducted groundwater modeling to predict the flow path and travel time of Sewage Treatment Plant (STP) effluent discharged from recharge basins located at Stony Brook University in Stony Brook to the Long Island Sound for Suffolk County's Department of Public Works (SCDPW).

PWGC performed 3-D numerical groundwater modeling to estimate flow path and travel time of sewage treatment plant effluent from recharge basins to the Long Island Sound, and prepared an engineering report documenting findings and modeling results.

The Suffolk County groundwater model was utilized to aid in predicting travel times and flow paths of wastewater discharges from the STP at Stony Brook University through a series of recharge basins to groundwater and ultimately to the Long Island Sound. Three recharge rates were modeled, 0 MGD, 1 MGD and 3 MGD. A sensitivity analysis was also performed to assess key model assumptions and determine which parameters or inputs were the most sensitive or that would cause the greatest variation in the model results.

The Suffolk County groundwater model ModFlow version was used to model different recharge scenarios of STP effluent via surface recharge basins at Stony Brook University. The original or initial model input parameters, which included but was not limited to, porosity, hydraulic conductivity, storativity and were modified based on PWGC experience with geologic materials in the Stony Brook area to more accurately reflect actual conditions and to better predict model output results. PWGC coordinated with Stony Brook University's Geology Department for additional input and to corroborate our experience and assumptions. The model was recalibrated on a sub-regional level and then additional sensitivity analyses were performed to evaluate the model input modifications. With the model modified and recalibrated PWGC then used it to predict flow paths and travel times for water particles being discharged in unsaturated conditions at Stony Brook University to the Long Island Sound. The model results were detailed in a report which presented them both numerically and graphically and was submitted to the SCDPW.

BROOKHAVEN NATIONAL LABORATORY - SEWAGE TREATMENT PLANT DISCHARGE MODIFICATION

In order to comply with a New York State Department of Environmental Conservation (NYSDEC) directive to reduce concentrations of metals discharged into the Peconic River from Brookhaven National Laboratory's (BNL) Sewage Treatment Plant (STP), the laboratory decided to upgrade the STP by adding a tertiary treatment component and re-directing the plant effluent away from the Peconic River to groundwater recharge beds. Unique challenges to the project included the careful siting of the proposed



groundwater beds so as not to significantly alter the groundwater flow regime beneath the site. Altering of the flow regime could influence the pathways of several groundwater contaminant plumes that are currently being remedied under CERCLA. Further, the proposed groundwater recharge beds were required to be located close to the existing STP infrastructure, but not so close to the adjacent Peconic River that treated effluent would contribute base flow to the river bed. PWGC worked closely with BNL and their groundwater modeling support team to identify a location for the groundwater recharge beds that would not negatively impact the local groundwater flow regime and Peconic River base flow.

In addition to the design of the groundwater recharge beds, PWGC prepared detailed plans and specifications for the addition of a tertiary treatment system which included two drum filters and drum filter building.

Title I and Title II Engineering Design Services including:

- Performance of hydrogeologic analysis to characterize soil conditions in the proposed recharge area
- Design and location of four new recharge basins
- Evaluation of Tertiary Filtration System options
- Design of Tertiary Filtration System
- Design of flow monitoring station and system controls
- Demolition Plan design and sequencing of existing discharge and monitoring equipment
- Preparation of Construction Cost Estimates
- Preparation of Construction Schedule using Primavera P6 software
- Electrical design including Arc Flash and Lightning Protection analyses and standby power upgrades
- Preparation of Title I Design Report
- Preparation of Title II Design Package including Plans and Specifications

