



Engineers  
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January 22, 2021

Ms. Amber Nowak  
Village Planner  
Village of Mamaroneck  
Village Hall at the Regatta  
123 Mamaroneck Avenue  
Mamaroneck, NY 10543

Re: 1165 Grecean Point Hydrology and Sewer Options

Dear Ms. Nowak:

As per my discussion with Thomas Burt this morning, attached please find my professional resume as well as the resumes of some of my key staff. I will be the lead person working on this project and look forward to working with you.

Please do not hesitate to contact me, should you have any questions.

Very truly yours,

MASER CONSULTING, INC.

A blue ink handwritten signature, appearing to read 'A. Hipolit', is written over the printed name.

Andrew R. Hipolit, P.E., P.P., C.M.E., C.P.W.M.  
Senior Principal

ARH/dw

w/enc

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## ANDREW R. HIPOLIT, PE, PP, CME, CFM, CPWM

Senior Principal/Project Professional/Municipal

### EDUCATION

- B.S. Civil Engineering, New Jersey Institute of Technology, 1990

### PROFESSIONAL REGISTRATIONS

- Professional Engineer (PE) New Jersey, Delaware, New York, Texas, S. Carolina
- Professional Planner (PP) New Jersey
- Certified Municipal Engineer (CME) New Jersey
- OSHA 30 Hr Certified
- Certified Floodplain Manager (CFM)
- Certified Public Works Manager (CPWM)

### PROFESSIONAL AFFILIATIONS

- Math, Science & Engineering Advisory Council, Morris County School of Technology

### CURRENT APPOINTMENTS

- Englewood Cliffs Borough, Planning Board Engineer, Planning Board Planner
- Borough of Montvale, Borough Engineer, Land Use Board Engineer
- Borough of New Providence, Borough Engineer, Planning Board Engineer, Zoning Board Engineer
- City of Summit, Planning Board Engineer, Zoning Board Engineer
- Pequannock Township, Planning Board Engineer, Zoning Board Engineer
- Borough of Tenafly, Borough Engineer

### EXPERIENCE

Mr. Hipolit has extensive experience that spans over 30 years in planning, design, and inspection of municipal, residential, and commercial projects. He has been accountable for the management of municipal projects from concept design through construction as well as the review of plans, reports, and other documents submitted to Planning Boards and Zoning Boards of Adjustment. In addition to being a Professional Engineer and Planner, he is also a Certified Municipal Engineer and a Certified Public Works Manager. His focus of expertise includes the design and oversight of roadway improvements and projects involving the planning and design of municipal buildings, recreational facilities, athletic fields, stormwater and sanitary sewer conveyance systems, and grant administration.

Mr. Hipolit has successfully secured over \$10 million dollars in municipal aid funds from the NJ Department of Transportation Trust Fund for various projects. His extensive knowledge of the permitting process and his established contacts with review agencies facilitates the timely issuance of permits. Mr. Hipolit also has broad experience with the development of the municipal Stormwater Management Plans and ordinance revisions. His comprehensive knowledge has enabled him to provide expert testimony and representation to municipalities' governing bodies, Planning and Zoning Boards, and private clients.

### PROJECTS

#### **Borough of Montvale, Bergen County, NJ**

##### **Borough Engineer**

- **Fieldstone School Athletic Fields**  
Prepared engineering design plans and specifications for grading, and drainage of a synthetic turf field. Provided bidding and construction administration services.
- **Wireless Communications Tower**  
Assisted with the preparation of a request for proposals for the formation of a wireless communications monopole and infrastructure. Performed research and recommendations on various wireless communication requirements and cost estimates.
- **Yearly Road Program**  
Prepares engineering design plans and specifications for an annual road rehabilitation program including milling, paving, microsurfacing, drainage, curb, and sidewalk improvement for various roads within the Borough.



- **Specifications for Outsourcing Municipal Services**  
Prepared specifications for the outsourcing of municipal services including sanitary sewer and storm sewer repairs, garbage, recycling, yard waste, grass-cutting, snow plowing, street sweeping, and various other municipal services.
- **Grant Coordination**  
Applied for and received Local Aid Grants every year since 1995 at a rate of approximately \$150,000 per year. Also applied for and received NJDOT Safe Routes to School and Safe Streets to Transit Grants, Bergen County Open Space, and Bergen County Community Development Block Grants.
- **NJDOT Local Aid Grant Roadway Projects**  
Prepared plans, specifications, bidding services, and construction administration for NJDOT Local Aid Grants for roadway improvements to various streets throughout the Borough including: Akers Avenue, Magnolia Avenue, Memorial Drive, and Terkile Road.

**Borough of New Providence, Union County, NJ**  
**Borough Engineer**

- **Outfall Restoration**  
During Hurricane Irene, the high velocity of uncontrolled stormwater caused accelerated erosion that carved out deep ravines in the terrain of New Providence. Expedited timelines and engineering design modifications to the outfalls enabled the Borough to obtain a FEMA Federal Assistance Grant and General (GP11) permit from the New Jersey Department of Environmental Protection (NJDEP) to reconstruct the outfalls in the wetland. The Borough also received a Somerset-Union Soil Conservation District certification for the bank stabilization to repair the two worst outfalls. The most significant element of this project was the Borough's decision to make modifications to the original outfall design, thereby improving the existing system to withstand future storm damage and keeping the project within the constraints of the NJDEP General (GP11) permit. This decision eliminated the need to trigger a more costly customized NJDEP permit, which would have required a more lengthy approval process without a guarantee of approval. The Borough could not risk losing the funding by missing the FEMA deadline.
- **NJDOT Local Aid Grant Roadway Projects**  
Prepared plans, specifications, bidding services, and construction administration for NJDOT Local Aid Grants for roadway improvements to various streets throughout the Borough including: Central Avenue, Livingston Avenue, Ryder Way, and Floral Avenue.
- **Grant Coordination**  
Applied for and received Local Aid Grants every year since 2003 at a rate of approximately \$200,000 per year. Also applied for and received NJDOT Safe Routes to School and Safe Streets to Transit Grants, Union County Open Space, and Union County Community Development Block Grants.
- **NJDEP Stormwater Coordinator and Flood Plain Manager**  
Serves as the NJDEP Stormwater Coordinator and Flood Plain Manager for the Borough.
- **Sanitary Sewer Improvements**  
Prepares plans and specifications annually for the various repairs to sanitary sewer system including lining, point repair, manhole rehabilitation, and pump station upgrades.
- **Emergency Shelter Generator Installation**  
Prepared plans and specifications for the design and installation of a 300KW emergency generator system to sustain utilities for the municipal, police, emergency shelter, and rescue squad buildings during power outages.
- **Athletic Field Renovations**  
Worked with the Borough of New Providence to renovate Hillview Field, Lincoln Field, Oakwood Park and Grove Field. Hillview Field was an existing grass baseball/soccer field that was modified to include two synthetic turf infields connected by a natural grass outfield. Lincoln Field was an existing natural grass complex, renovated as a natural grass complex, but upgraded to meet current standards for baseball and soccer. Oakwood Park was an existing natural grass athletic complex, modified to include a synthetic turf, multi-use field for baseball, softball, lacrosse, soccer and football and a second baseball field with synthetic turf infield and natural grass outfield.



**Borough of Tenafly, Bergen County, NJ****Borough Engineer**

- **Yearly Micro-Surfacing**  
Provided municipal engineering and construction inspection services for the yearly micro-surfacing project. Micro-surfacing is a mixture of polymer modified asphalt emulsion, mineral filler, water, and other additives that is properly proportioned, mixed, and then spread across a paved surface at 1/4" thickness. Considered to be one of the most versatile tools in "road maintenance," micro-surfacing utilizes a polymer modified cold-mix paving system that is very cost effective and can remedy a wide range of problems on roadways.
- **ADA Recreation Compliance Investigation and Report**  
Performed an inspection and evaluation of all Borough recreational facilities and prepared a comprehensive analysis of the facilities for safety and ADA accessibility compliance. Provided recommendations for improvements to each facility, cost analyses, and timeline for each improvement in accordance with the 2010 amendment to the ADA.
- **NJDEP Stormwater Coordinator and Flood Plain Manager**  
Serves as the NJDEP Stormwater Coordinator and Flood Plain Manager for the Borough.
- **NJDOT Local Aid Grant Roadway Projects**  
Prepared plans, specifications, bidding services, and construction administration for NJDOT Local Aid Grants for roadway improvements to various streets throughout the Borough including: Columbus Drive and Tenafly Road.
- **Yearly Road Program**  
Prepares engineering design plans and specifications for a yearly road rehabilitation program including milling, paving, drainage, curb, and sidewalk improvements for various roads within the Borough.
- **Tenafly Road, Sections 1, 2 & 3**  
Prepared design drawings and construction specifications and provided grant administration for improvements to Tenafly Road, funded through \$300,000 in grants from the NJDOT Municipal Aid Program. Improvements included the replacement of curbs, sidewalks, and concrete driveway aprons and the milling/resurfacing of Tenafly Road. In addition, all ADA curb ramps were reconstructed and detectable warning surfaces installed for compliance with current ADA regulations. Additional items included roadway base repair, resetting of various structures, installation of bicycle safe grates, installation of NJDEP approved curb pieces, reconstruction of drainage structures, and roadway striping.
- **Grant Coordination**  
Applied for and received Local Aid Grants every year since 2010 at a rate of approximately \$200,000 per year. Also applied for and received NJDOT Safe Routes to School and Safe Streets to Transit Grants, Bergen County Open Space, and Bergen County Community Development Block Grants.
- **Lightning Detection System**  
Prepared plans specifications and construction administration for the purchase and installation of the Borough-wide Lightning Detection System, including Board of Education properties.

**Borough of Englewood Cliffs, Bergen County, NJ****Borough Engineer**

Served as the Borough Engineer performing various functions and providing design plans for improvements to roadways, recreational facilities, utilities, and buildings.

- **Area in Need of Rehabilitation**  
Investigated the B1 Zoning District water and sanitary systems to determine which systems are at least 50 years old and in need of repair or substantial maintenance. Prepared a detailed engineering report indicating each Area in Need of Rehabilitation pursuant to the Local Redevelopment and Housing Law (NJSA 40A:12A-14 & 15).

**City of Summit, Union County, NJ****Planning and Zoning Board Engineer**

Reviews Board applications for residential, commercial, and retail developments. Provides the detailed review of all applications for completeness, identification of variances, and compliance with City ordinances.



# ANDREW B. FETHERSTON, PE, CPESC, CFM, CPSWQ

Principal

## EDUCATION

- B.S. Civil Engineering, Manhattan College, 1991
- A.S. Civil Engineering Technology, Norwalk State Technical College, 1988

## PROFESSIONAL REGISTRATIONS

- Professional Engineer (PE) New Jersey, New York, Connecticut, Rhode Island, California

## PROFESSIONAL CERTIFICATIONS

- Certified Professional in Erosion and Sediment Control (CPESC)
- Certified Floodplain Manager (CFM)
- Certified Professional in Stormwater Quality (CPSWQ)

## PROFESSIONAL AFFILIATIONS

- American Society of Civil Engineers
- Association of State Dam Safety Officials

## CURRENT APPOINTMENTS

- Town of Montgomery, Planning Board Engineer

## EXPERIENCE

Mr. Fetherston has over 30 years of experience in all aspects of civil engineering and site design for residential and commercial and industrial developments, golf courses, recreational facilities, warehouses, shopping centers, and subdivisions. His experience also includes roadway and utility design, preparation of plans and reports for drainage, hydrology, stormwater systems, flood studies, sewer and pump station design, design of water distribution systems, and dam design. He has extensive computer modeling experience using Army Corps of Engineers HEC-1 and HEC-RAS programs. Mr. Fetherston has presented before and represented Planning, Zoning, and Municipal boards throughout the Hudson Valley

## PROJECTS

### **Sewer District #1 Extension, Town of Patterson, Putnam County, NY**

Provided engineering reports, plans, details, and permitting for the expansion of the Patterson Sewer District #1. Tasks included review of the sewer treatment plant capacity, calculation of average and peak flows from the district expansion, design of gravity and forced sewer system, review of wetlands and flood plain limits, permitting through the NYCDEP and the Putnam County Department of Health, and coordination with NYSDOT, NYSEG, and Metro North Railroad.

### **Village of Cornwall-on-Hudson Municipal Separate Storm Sewer System (MS4) Permitting**

#### **Village of Cornwall-on-Hudson, Orange County, NY**

Preparation of permit applications, Illicit Discharge Detection studies, SWPPP plans for the Village and the DPW facility, coordination with the Village DPW, the Mayor's office, the Planning Board and the Building Department regarding the requirements of the MS4 permit. Completion of annual permit documents and making regular updates to the plan. Assist the Village by providing training.

### **Johnstons Toyota Dealership & Service Center Town of Wawayanda, Orange County, NY**

Project Manager responsible for professional engineering services for a new car dealership in the Town of Wawayanda, located on approximately 15.8 acres of land along Routes 6 and 56. The development includes a 10,000 SF conversion of the existing showroom into a dedicated used car showroom; 12-car indoor service and delivery drive; 21,000 SF new car showroom with seven service writers, customer lounge, and dedicated children's lounge; and a 10,000 SF vehicle service addition with nine service bays and an automated car wash. Maser Consulting provided complete



services for this project, from initial survey and due diligence to project close-out at the completion of construction. Our professionals developed concept, preliminary, and final site plans, including full landscape and lighting plans. The reconstruction of the existing on-site subsurface sewage disposal system (SSDS) was also required. The existing SSDS was a traditional pipe in trench system and would be over capacity with the additional flows from the proposed dealership. Our redesign utilized an Eljen In-Drain system to treat the estimated 1,315 GPD flows from the site's anticipated 81 full-time employees and customer usage, as well as a new pump station. A permit from the NYSDEC was required for the site's proposed stormwater management facilities and reconstructed SSDS. We also performed construction administration and site inspection and reviewed shop drawings.

**Westchester Torah Academy, City of New Rochelle, Westchester County, NY**

Provided civil engineering services for the site design of a new private school. Worked closely with the school board members, architect, and builders to achieve the most desirable and cost-effective layout. Responsibilities include site design according to local codes, stormwater modeling and design of best management practices, water and sewer utility layout and profiles, and obtaining board approvals in an expedited manner. Additionally, investigated alternates to a sewer pump station and investigation of the City's downstream drainage system to alleviate neighboring properties existing flooding issues.

**Haldane Central School District Drainage Improvements, Cold Spring, Putnam County, NY**

Retrofits of an existing riprap lined drainage channel and two detention basins. Analyzed and prepared a properly sized and stabilized channel, in accordance with the NYS Standards and Specifications. Provided review of the functionality of the receiving detention basins and design of stable rip-rap discharge points. A Stormwater Pollution Prevention Plan (SWPPP) was prepared to mitigate the stormwater runoff from the proposed athletic field improvements. Prepared hydrologic and hydraulic calculations of the existing and proposed fields to determine the extent of retrofits required to the 2 existing stormwater basins.

**Barrett and West Fields at Westchester Community College, Valhalla, Westchester County, NY**

Preparation of a Stormwater Pollution Prevention Plan for the proposed physical education field improvements. Work consisted retrofitting several biofiltration practices to mitigate stormwater runoff as a result of the proposed athletic field improvements. Provided hydrologic and hydraulic design calculations for the biofiltration practices.

**K. Hovnanian Companies Northeast, The Grove at New Windsor, New Windsor, Orange County, NY**

Responsible for design and permitting for over 9,650 ft of new and replacement water transmission, supply, and distribution piping and appurtenances at Stewart Airport. The project involved permitting for water distribution and sewer collection systems to replace the aged utilities and to provide plans for a new 275 townhouse development. Coordination with the neighboring military housing development for upgraded water and sewer mains, and with the Town of New Windsor for the relocation of raw water transmission mains tapping the NYCDEP Delaware Aqueduct. Project also required design and permitting of a pumped water distribution system for potable and fire flows, and Hardy Cross analysis for the proposed water main system's multiple loops, the existing system, and their associated improvements.

**Water Main Extensions, Town of Newburgh, Orange County, NY**

Provided civil engineering services for the design of watermains and appurtenances in the Town of Newburgh Consolidated Water District to extend the existing watermains to service residents affected by private drinking well contamination near Lake Washington. The project involved four separate watermain extensions with work in the NYSDOT, Orange County, and the Town of Newburgh rights-of-way. Responsibilities included project coordination, permitting, preparation of plans, profiles, details, and engineering reports of the new watermains and appurtenances. Additionally, technical specifications and bid documents were prepared for public bid, and engineering cost estimates were developed.

**Carmel Water District # 8 Water Main Replacement, Town of Carmel, Putnam County, NY**

Managed surveying and civil engineering for the design of replacement watermains and appurtenances on various roads within the Carmel Water District Number 8. The project involved 2.4 miles of new watermain. Provided project design, coordination, permitting, prepared easements, plans, sections, profiles, and details of the new water mains and appurtenances. We are contracted to the Town to develop a Storm Water Prevention Plan



(SWPPP); address the State Environmental Quality Review Act (SEQRA); prepare final specifications and bidding documents for the project; and submit to the PCHD for approvals.

**North State Road Sewer, Town of Ossining, Westchester County, NY**

Designed one-mile gravity sanitary sewer, sewer pumping station, and quarter-mile force main, as well as the sewer district's connection to Westchester County Sewer trunk line. Received approvals from Westchester County, NYSDEC, NYSDOT, Town of Ossining, and the Town of New Castle.

**Town Water Facility Analysis, Town of Marlborough, Ulster County, NY**

Provided preparation of a system-wide municipal water distribution study for the Town of Marlborough. Completed a study of the existing water distribution system including phased improvements to the system to improve flows and pressure throughout the system. The Marlborough water system includes one water supply interconnection to the NYCDEP Catskill Aqueduct; two water storage tanks with a total capacity of approximately 0.8 million gallons (mg); a 16.5 mg reservoir; and a transmission/distribution system consisting of approximately 26.5 miles of water mains, valves, pressure reducing valve stations, fire hydrants, service connections, and meters. The Marlborough water system serves approximately 3,350 people through more than 1,150 service connections.

**The Grove at New Windsor, K. Hovnanian Companies Northeast  
Town of New Windsor, Orange County, NY**

Provided full site design for a 275-unit town home development located on 50 acres, including Stormwater Pollution Prevention Plan, and design of seven retention ponds to meet the requirements of the NYSDEC. Project also included design and permitting for over 9,650 ft of new and replacement water transmission, supply, and distribution piping and appurtenances on the former Stewart Army Base. Coordination with the neighboring military housing development for upgraded water and sewer mains, and with the Town of New Windsor for the relocation of raw water transmission mains tapping the NYCDEP Delaware Aqueduct. Project also required design and permitting of a pumped water distribution system for potable and fire flows, and Hardy Cross analysis for the proposed water main system's multiple loops, the existing system, and their associated improvements.

**Residential Development, K Hovnanian Companies Northeast  
Village of Washingtonville, Orange County, NY**

Provided due diligence reports for a 155-acre tract of land for a potential 148-unit residential housing community. Services included analysis of municipal water and sewer systems and subsequent meetings with Town Engineer, Water Department and Sewer Department to determine the feasibility of extending these services to the development. Additional studies involved preparation of multiple conceptual layout drawings, and preliminary investigation of floodplain of the Moodna Creek.

**Riverdale Classic Residence, City of Yonkers, Westchester County, NY**

Provided subsurface drainage system design for a 17-story building.

**Camp LaGuardia Redevelopment, Town of Chester, Orange County, NY**

Formerly a New York City Homeless Facility, the Camp LaGuardia Redevelopment involves civil engineering and utility design and redesign to support a mixed-use redevelopment involving residential housing consisting of 500 multi-family residential units, 300 senior residences, 37 single-family homes, and 70 townhomes. The project also proposes a total of 180,000 SF of commercial, retail, and office space on 255 acres. This project requires the analysis of the existing water supply/distribution and storage system, and design for supplemental water supply, over 5,000 ft of new water distribution piping and appurtenances, and a replacement for an existing elevated water storage tank. Connection(s) to the existing distribution system are in design. This project is presently in the design development phase.

**Bridgeview Townhome Community, Town of Lloyd, Ulster County, NY**

Provided professional surveying and engineering services for the final phase build out of this planned unit development (PUD) of 110 townhomes located on approximately 14 acres. Services included boundary and topographic surveys; design and analysis for utility plans; and profiles and details to upgrade, loop, and extend the existing water and sewer utilities totaling 4,000 ft of new 8- and 10-inch water distribution piping and



appurtenances. Regulatory permitting was performed through the County Health Department for the sanitary sewer and water main extensions.

**Historic Moffat Library Renovation, Village of Washingtonville, Orange County, NY**

Principal-in-Charge of comprehensive engineering services for the restoration and renovation of the historic West Main Building of the Moffatt Library in Washingtonville. The renovated and expanded building features a community meeting room, small conference room for tutoring or home office meetings, teen gathering area, expanded children's room, children's craft/program room, kitchenette for event use, improved access to technology for the whole community, energy saving mechanicals, glassed-in area reading section, park-like landscaped setting, local history display and research area, and ample parking. Services included performing a topographic survey of the site and creating preliminary and final site plans. Traffic counts were performed, and findings were consolidated into a report detailing existing and project traffic volumes. A Storm Water Pollution Prevention Plan was also prepared.

**Department of the Army, Corps of Engineers, Water Resources Support Center  
City of Davis, Yolo County, CA**

Performed beta (pre-release) testing of HEC-HMS (Hydrologic Modeling System) to supersede HEC-1 stormwater modeling software. Services included rain input data, check results and submitted findings for the final revision pending release of the software.

**Avon Corporation****Village of Suffern, Rockland County, NY**

Provided full site design services for the demolition of an existing facility and construction of a new 350,000 SF corporate headquarters. Responsibilities included stormwater plans and permitting through NYSDEC, Rockland County Drainage Agency, and US Army Corp of Engineers, including sand filter for mitigation of stormwater pollutants.

**Route 300 Realty****City of Newburgh, Orange County, NY**

Provided design of site plans for 15,000 SF office building, including subsurface infiltration systems. Site has received waiver from NYSDEC's requirements for peak flow mitigation.

**Aluf Plastics****Town of Orangetown, Rockland County, NY**

Provided design of detention facilities for industrial site meeting NYSDEC requirements.

**Pfizer Pharmaceuticals Arrowwood Conference Center****Village of Rye Brook, Westchester County, NY**

Provided civil and site engineering, design of peak flow attenuation devices, and analysis of the Blind Brook for river peak to site peak flow release comparison, thereby eliminating peak flow mitigation.

**Panattoni Development Company, LLC – New Warehouse****Village of Montgomery, Orange County, NY**

Provided civil engineering, survey, and landscape architectural services for a 455,000 SF warehouse facility and 20,000 SF flex building on ±110 acres. Services included boundary and topographic surveys; hydrogeologic services to address the viability of a long-term sustainable on-site groundwater supply for this warehouse project; 72-hour aquifer pumping testing; monitoring well installation; baseline water quality testing; background water level monitoring; long-term aquifer test; water quality monitoring; water recovery monitoring; and hydrogeologic report. Also provided design and permitting for this water supply, elevated water storage tank, pump design, and distribution system.



## GOVERNMENT PROJECTS

**United States Military Academy at West Point**

- **Golf Training Facility, Hillside Homes & Development Corporation**  
Professional engineering services for the construction of a 5,000 SF golf training facility including full synthetic putting and chipping green, locker rooms and offices. Services included construction stake-out and as-built topographic survey. Stormwater permitting through the West Point DPW MS4 program using the New York State Stormwater Management Design Manual and Erosion Control Standards and Specifications to meet the New York State Pollution Discharge Elimination System (SPDES) Construction Activities General Permit requirements. Maser Consulting prepared plans for the site improvements for water, sewer, drainage, grading, erosion and sediment control plans and details. Maser Consulting also provided construction and erosion control site inspections for this new sports training facility.
- **Anderson Rugby Complex, Baker Barrios Architects, Inc.**  
Maser Consulting was retained to perform professional services for the construction of a 580-seat rugby sports center and memorial park. The facility included a 100,000 SF synthetic turf tournament field and a natural practice turf field, as well as parking and amenities. Services included a full stormwater pollution prevention plan, design for erosion and sediment controls and permitting through USMA DPW. Additionally, erosion and sediment control inspections and construction survey stakeout (building, lighting poles, field and center line of road) were performed.
- **Foley Athletic Center, Howze Field, Baker Barrios Architects, Inc.**  
Maser Consulting provided professional land survey, geotechnical and civil/site engineering services for the construction of the Foley Athletic Center. Deliverables included a topographic survey mapping and the layout and analysis of test borings to assist the project structural engineer in foundation system considerations. We prepared conceptual plans, grading and drainage plans, earthwork and rock excavation estimates through as-built surveys.
- **Worth Place Area Coaches Housing, two projects, Petra Construction**  
Maser Consulting provided professional Land Surveying and civil/site engineering services for a residential development. In 2006, Maser Consulting prepared site plans, a SWPPP, erosion and sediment control plans for the construction of 5 homes. A second project included 5 additional homes on West Moore Loop. Maser Consulting provided land surveying, grading, drainage and utility design, a SWPPP and subsequent inspection services.
- **Malek Press Box, North Athletic Fields, Baker Barrios Architects, Inc.**  
Maser Consulting prepared Civil/Site Design Documents to address water and sewer service, the routing of electric, communication and gas utilities, minor site grading, trenching for these utilities and sediment and erosion control plans.

**Department of the Army, Corps of Engineers, Water Resources Support Center  
City of Davis, Yolo County, CA**

Performed beta (pre-release) testing of HEC-HMS (Hydrologic Modeling System) to supersede HEC-1 stormwater modeling software. Services included rain input data, check results and submitted findings for the final revision pending release of the software.

**Coxsackie Dam, State ID: 209-1154, Medway Dam – State ID: 209-3637, Hazard Class: B (Intermediate Hazard), Town of Coxsackie and New Baltimore, Green County, NY**

Project Manager. In order to address the dam deficiencies noted by the NYSDEC Maser Consulting's Scope of Services included performing a site inspection of the dam and its spillways as well as the downstream road crossings in order to build a hydraulic model to study the various dam breach scenarios for two dams in series. This study included 2 dams in series as well as a crossing of the New York state Thruway. Responsibilities on the project included development of a Hazard Class Assessment of the two existing inline dams. The project included utilizing historic mapping, design reports and plans as well as, GIS lidar data and site inspection measurements and photos, to create a hydraulic and hydrologic model of the two dams. This model was used to study the impacts downstream of the dams in the event of a dam breach during various rainfall events. Based on the impacts downstream to homes, roadways, infrastructure and any potential loss of life, the dam was assigned a



hazard class. Specific to the project, the downstream inundation analysis included working with the New York State Thruway Authority and NYSDEC to evaluate an underground cave system that conveys the stream under the NYS Thruway.



**JORDAN R. VOLK, PE, PMP**

Principal Associate/Assistant Department  
Manager/Water Wastewater

**EDUCATION**

- B.S. Mechanical Engineering,  
Lehigh University, 2002

**PROFESSIONAL REGISTRATIONS**

- Professional Engineer (PE)  
New Jersey, New York
- Project Management  
Professional (PMP)

**PROFESSIONAL AFFILIATIONS**

- New Jersey American Water  
Works Association
- New York Water Environment  
Association

**SOFTWARE SKILLS**

- ArcGIS
- AutoCAD
- WaterGems

**EXPERIENCE**

Mr. Volk has over 18 years of experience in the potable water and wastewater engineering fields, including project management, design, investigation, preparation of plans and specifications, permitting, and construction administration and observation for water and wastewater infrastructure. Specific projects have included water treatment plants, water pump stations, water distribution mains, water storage tanks, supply wells, and chemical feed stations.

Mr. Volk also has experience in hydraulic modeling, site feasibility studies, water system valuations, strategic planning, and asset management practices. His wastewater experience includes the design of wastewater pumping stations, as well as new sanitary sewers and the rehabilitation of existing sanitary sewers. He also has experience in large scale stormwater resiliency and mitigation projects.

**PROJECTS**

**Stewart Air National Guard Base Water System Improvements,  
Air National Guard  
City of Newburgh, Orange County, NY**

Design of a new potable water system for the entire base, including jack and bores and reconnection of existing and new potable water services. Hydraulic analysis was performed to analyze the water main design.

**Water System Upgrades, Shore Owners Estates  
Mahopac, Putnam County, NY**

Project Manager for the design and permitting of well house upgrades. The project included demolition of existing hydropneumatic tanks to be replaced with a new water storage tank, water booster pumps, and a smaller hydropneumatic tank.

**Wastewater Treatment Plant Evaluation and Capital Plan  
Borough of Florham Park, Morris County, NJ**

Preparation of a wastewater treatment plant upgrade evaluation, optimization and capital plan to account for future flow increases in the Borough.

**235th Street Pump Station Reconstruction, New York City  
Department of Environmental Protection  
Bronx Borough, New York City, NY**

Project Manager for the planning and design of a 3.5 MGD combined sewer pump station with an estimated construction cost of \$20M.



**Rebuild By Design - Living With the Bay, Governor's Office of Storm Recovery****Various Locations, Nassau County, NY**

Project Manager for the design of four stormwater resiliency projects with an estimated construction cost of \$50M.

**Long Beach Bulkhead Replacement****City of Long Beach, Nassau County, NY**

Project Manager for the design of a new section of bulkhead along the north shore of Long Beach to provide storm surge resiliency.

**JFK Airport Floodgate Installation, Port Authority of New York and New Jersey****Queens Borough, New York City, NY**

Project Manager for the planning and design of two separate projects with the goal of mitigating storm surge flooding at the airport with an estimated construction cost of over \$50M.

**Water System Study****Town of Marlborough, Ulster County, NY**

Engineer for a hydraulic analysis on the existing water system to determine necessary improvements to remedy problems in the system. A report was prepared detailing the analysis and recommending repairs to the system, as well as additional looping and a new ground tank location.

**Hydraulic Modeling Assignments, Jersey City Municipal Utilities Authority****Jersey City, Hudson County, NJ**

Performed hydraulic modeling of the water distribution system for various scenarios. Scenarios included potential developments and effects of main shutdowns.

**Newark Avenue Bridge Water Main Replacement, Jersey City Municipal Utilities Authority****Jersey City, Hudson County, NJ**

Project Manager for the design and permitting of the replacement of a 36-inch water main and bridge above an active Conrail railroad line.

**Newark Avenue CIPP, Jersey City Municipal Utilities Authority****Jersey City, Hudson County, NJ**

Project Manager for the design of rehabilitation of 4,000 LF of 6-inch, 8-inch, and 12-inch water mains using a structural cured-in-place pipe (CIPP) liner.

**Journal Square North Water Main Rehabilitation, Jersey City Municipal Utilities Authority****Jersey City, Hudson County, NJ**

Project Manager for the design and permitting of rehabilitation and replacement of 20,000 LF of 6-inch and 8-inch water mains within the Journal Square North Ward. Prior to design, water main coupons were taken and analyzed to determine the condition of the existing water main and the best method of rehabilitation or replacement. The design included water main replacement, cleaning and cement mortar lining and structural cured-in-place pipe (CIPP) liner.

**Emergency Water Main Relocation, Jersey City Municipal Utilities Authority****Jersey City, Hudson County, NJ**

Project Manager for the design of solutions for existing water mains conflicts with existing brick sewers. Seven locations were found where existing cast iron water mains ran through the interior of brick sewers. Each location was evaluated, and the most cost-effective solution was designed. The final design consisted of structural cured-in-place pipe (CIPP) lining of the existing brick sewer, replacement of brick sewer with ductile iron pipe, relocation of water mains, or abandonment of the existing water main.

**Pulaski Highway Water Main Replacement, Jersey City Municipal Utilities Authority****Jersey City, Hudson County, NJ**

Project Manager for the construction administration of water main replacement associated with the NJDOT rehabilitation along the Pulaski Highway and Route 139.



## STEPHEN GOMBA, PE, CFM

Project Manager/Civil/Site

### EXPERIENCE

#### EDUCATION

- M.S. Civil and Environmental Engineering, Rowan University, 2004
- B.S. Civil and Environmental Engineering, Rowan University, 2003

#### PROFESSIONAL REGISTRATIONS

- Professional Engineer (PE)  
New Jersey, Pennsylvania

#### PROFESSIONAL CERTIFICATIONS

- Certified Floodplain Manager
- Post-Disaster Safety Assessment Program Evaluator, California Governor's Office of Emergency Services
- Firefighter/EMT/AED Certified

#### PROFESSIONAL AFFILIATIONS

- National Society of Professional Engineers, Member
- New Jersey Association for Floodplain Management, Member
- New Jersey Section American Water Resources Association, Member

Mr. Gomba has 15 years of experience as a design engineer performing project design, plan and report preparation, stormwater management design, hydrologic and hydraulics analyses for bridges and dams, and environmental permitting. He has worked on many governmental and private projects, and his responsibilities have included design of roadway improvement projects, public educational facilities, athletic field facilities, private subdivisions, site development plans, dam rehabilitations, dam safety inspections, dam breach analyses, and development of emergency action plans. Mr. Gomba is also experienced in DEP permit applications, soil erosion and sediment control plans, stormwater management design and traffic control plans, and grant application preparation for municipal aid grants. Additionally, he has managed projects during construction, with responsibility for shop drawing review, managing inspection, pay estimates and change orders.

### PROJECTS

#### **Parkway Town Center Township of Ewing, Mercer County, NJ**

Provided professional design services for Parkway Town Center, a mixed-use town center development on the former decommissioned General Motors manufacturing plant in Ewing Township. The redevelopment of this 80-acre property was designed in close coordination with Township officials to create a town center along Parkway Avenue that combines retail and residential together in a walkable community. The project proposes 109,102 SF of retail space, 12,600 SF of office space; 32,000 SF of self-storage; 1,182 apartments; a town green; and other recreational amenities. In conjunction with the town center design, the design of the Silvia Street Extension, a Township Master Plan roadway with a new at-grade railroad crossing approved by NJDOT and CSX, was also prepared. Permits were secured from the NJDEP, the Township of Ewing, Mercer County, the Soil Conservation District, and the Delaware & Raritan Canal Commission for both the roadway and the town center.

#### **Old York Business Park Bordentown City, Burlington County, NJ**

Provided site design and civil engineering services for a 665,000 SF warehouse and distribution facility, consisting of two buildings with associated loading, parking, access driveways, and three detention basins. The project is located on 60 acres, bounded by CR 660 and NJ I-295. Services included concept plans; utility investigation; preliminary and final major site plan; dimension plan; grading, drainage and utility plans; soil erosion and sediment control; road widening; landscape and lighting plans; stormwater management; earthwork calculations; environmental impact assessment (EIS); tree



protection management plan; Community Impact Statement; regulatory permitting [NJDEP stream encroachment, NJDEP Freshwater Wetlands statewide general # 11 (storm water outfall), # 10 (one road crossing), NJDEP transition area waiver, and soil conservation]; and a traffic impact study. Design services were also provided for the design of a water main extension along Old York Road to the existing 12" water main near the intersection within Rising Sun Road (approximately 2,850 LF), and for a low pressure sanitary sewer system to serve the proposed development, including an off-site force main to the existing gravity sanitary sewer system in Rising Sun Road (approximately 3,175 LF). Other services included regulatory permitting (NJDEP water and sanitary sewer extensions, soil conservation, City of Bordentown Water Department, and Bordentown Township Sewerage Authority).

**Stults Road Manufacturing Facility****South Brunswick Township, Middlesex County, NJ**

Provided professional services for a manufacturing facility located on a 5.97-acre property in the Township of South Brunswick. The proposed project includes a 65,700 SF manufacturing building with 4,350 SF of ancillary office space to support the manufacturing use of the current tenant, PharMEDium. Parking was provided for 100 cars, and six loading docks were provided adjacent to the building. A surface infiltration basin was designed at the rear of the property to mitigate stormwater runoff. Responsibilities included calculating and delineating the flood plain of the property's Devil's Brook through hydrologic and hydraulic analysis. The site was formerly an orchard and was contaminated due to pesticides. The contaminated soils were stripped, and the site was capped in accordance with NJDEP regulations. Because of the proximity to Devil's Brook, approvals were required from both the NJDEP and the Delaware & Raritan Canal Commission.

**Maple Lake Dam Removal****Borough of Kinnelon, Morris County, NJ**

Performed hydrologic and hydraulic analysis to design the breach and removal of the Maple Lake Dam. Prepared a Breach Analysis Report and dam removal plans to NJDEP Dam Safety for permitting.

**Replacement of Ocean County's Thompson Bridge****Jackson Township, Ocean County, NJ**

Managed the hydrologic analysis using TR-55 methodology, PondPack and HEC-1 to calculate curve number and time of concentrations which were used to then calculate the NJ Flood Hazard Area Design Flood peak flow rate. Incorporated hydrologic findings in a hydraulic analysis of the existing bridge versus proposed bridge using HEC-RAS to calculate and minimize the change in water surface elevations. Responsible for obtaining NJDEP Division of Land Use Regulations Program Flood Hazard Area and Fresh Water Wetlands permits, and Ocean County Soil Conservation Service permit.

**Ancora Lake Dam Hydrologic & Hydraulic Analysis****24 NJDOT Dams Formal Inspection****Camden County, NJ**

Performed hydrologic analysis using TR-55 methodology in Hydrocad to calculate curve number and time of concentrations which were used to then calculate the Probable Maximum Precipitation peak flow rate. Incorporated hydrologic findings in a dam overtopping and dam breach analysis using HEC-RAS to calculate water surface elevations necessary to create inundation maps in AutoCAD. Prepared a comprehensive Hydrologic and Hydraulic Analysis and Hazard Classification Report to NJDEP Dam Safety for review.

**Replacement of Monmouth County Bridge A-44, County Route 537 over Slope Brook****Colts Neck Township, Monmouth County, NJ**

Permitting Task Leader providing services to the County of Monmouth for the Replacement of Bridge A-44 over Slope Brook in Colts Neck Township. Managed the hydrologic analysis using TR-55 methodology, PondPack and HEC-1 to calculate curve number and time of concentrations which were used to then calculate the NJ Flood Hazard Area Design Flood peak flow rate. Incorporated hydrologic findings in a hydraulic analysis of the existing bridge versus proposed bridge using HEC-RAS to calculate and minimize the change in water surface elevations. Responsible for obtaining NJDEP Division of Land Use Regulations Program Flood Hazard Area and Fresh Water Wetlands permits, and Freehold Soil Conservation Service permit.



**Johnson Lake Dam Hydrologic & Hydraulic Analysis****24 NJDOT Dams Formal Inspection****Cape May County, NJ**

Performed hydrologic analysis using TR-55 methodology in Hydrocad to calculate curve number and time of concentrations which were used to then calculate the Probable Maximum Precipitation peak flow rate. Incorporated hydrologic findings in a dam overtopping and dam breach analysis using HEC-RAS to calculate water surface elevations necessary to create inundation maps in AutoCAD. Prepared a comprehensive Hydrologic and Hydraulic Analysis and Hazard Classification Report to NJDEP Dam Safety for review.

**Manor Lake Dam Rehabilitation****Parsippany Township, Morris County, NJ**

Performed extensive hydrologic analysis of five sub-drainage areas using TR-55 methodology, PondPack and HEC-1 to calculate curve number and time of concentrations which were used to then calculate the Probable Maximum Precipitation peak flow rate. Incorporated hydrologic findings in a dam overtopping and dam breach analysis using HEC-RAS to calculate water surface elevations necessary to create inundation maps in AutoCAD. Assisted in submitting a comprehensive Hydrologic and Hydraulic Analysis Report to NJDEP Dam Safety for review. Project manager responsible for development of design and permitting plans and specifications for the construction of a replacement dam.

**Replacement of Monmouth County Bridge W-38, Schoolhouse Road over Shark River****Wall & Neptune Townships, Monmouth County, NJ**

Permitting Task Leader providing services to the County of Monmouth for the Replacement of Bridge W-38 over Shark River between the Wall and Neptune Townships. Managed the hydrologic analysis using TR-55 methodology, PondPack and HEC-1 to calculate curve number and time of concentrations which were used to then calculate the NJ Flood Hazard Area Design Flood peak flow rate. Incorporated hydrologic findings in a hydraulic analysis of the existing bridge versus proposed bridge using HEC-RAS to calculate and minimize the change in water surface elevations. Responsible for obtaining NJDEP Division of Land Use Regulations Program Flood Hazard Area and Fresh Water Wetlands permits, and Freehold Soil Conservation Service permit.

**Nummy Lake Dam Hydrologic & Hydraulic Analysis and Rehabilitation****Dennis Township, Cape May County, NJ**

Developed plans, specifications and bid documents for rehabilitation of the earthen dam. Assisted in obtaining permits through NJDEP Dam Safety, NJ Pinelands Commission and Cape Atlantic Conservation District. Project manager responsible for construction administration and oversight of the dam rehabilitation construction.

**Watson Lake Dam Hydrologic & Hydraulic Analysis****24 NJDOT Dams Formal Inspection****Camden County, NJ**

Performed hydrologic analysis using TR-55 methodology in Hydrocad to calculate curve number and time of concentrations which were used to then calculate the Probable Maximum Precipitation peak flow rate. Incorporated hydrologic findings in a dam overtopping and dam breach analysis using HEC-RAS to calculate water surface elevations necessary to create inundation maps in AutoCAD. Prepared a comprehensive Hydrologic and Hydraulic Analysis Report and Hazard Classification Report for submission to NJDEP Dam Safety.

**Bridge O-11 Replacement and Crawford Circle Improvements****Borough of Interlaken, Village of Loch Arbor, Monmouth County, NJ**

Permitting Task Leader providing services to Monmouth County for the Replacement of Bridge O-11 over Deal Lake between the Borough of Interlaken and the Village of Loch Arbor, as well as the reconstruction of the substandard Crawford Circle to a modern roundabout. The existing bridge is deteriorated to a condition beyond repair, and will be replaced with a new, wider structure, designed in accordance with current standards. The existing Crawford Circle, located south of the bridge, will be reconstructed and replacement with a new landscaped roundabout to enhance aesthetics, traffic calming and safety. The intersection to the north will also be reconstructed to improve geometrics and safety. The overall project involves survey and mapping, ROW and deed documentation, horizontal and geometric design, grading design, landscaping and lighting design, utility



relocation, design of ADA curb ramps, maintenance and protection of traffic design involving detours and temporary pedestrian bridge, drainage design, guide rail design, bulkhead design and design of a new bridge.

#### **Sharon Station Road Corridor Improvements**

##### **Upper Freehold Township, Monmouth County, NJ**

Hydrology and Hydraulics Task Leader for the reconstruction and widening of approximately 1.5 miles of the Sharon Station Road corridor between C.R. 526 and C.R. 539. The existing two-lane undivided roadway has several substandard operational and safety features, including intersection delays, poor sight distance, narrow bridge crossings, no shoulders, deteriorated pavement, and flooding during rain events. This corridor will be realigned and widened to improve horizontal and geometric alignments, provide a new pavement section, construct drainage improvements, provide shoulders, provide a landscaped median, widen three bridge locations, relocate a variety of utilities, and improve intersection capacity at the north and south limits of the project. A traffic impact study was prepared to evaluate traffic operational and safety conditions along the corridor and at the intersections. The project also requires a number of environmental technical studies including impact evaluations for noise, threatened and endangered species, cultural resources, wetlands, and flood hazard areas, and requires obtaining Individual Permits from the NJDEP. The project is designed in accordance with Monmouth County, NJDOT, and AASHTO design standards. Extensive Community Outreach is required, including coordination with local residents, businesses, and local officials.

#### **Reconstruction of Bridge MT-9, on County Route 516 (Cherry Tree Farm Road), over Mill Brook**

##### **Middletown Township, Monmouth County, NJ**

Hydrology, Hydraulics and permitting Task Leader for design services for the replacement of the Bridge MT-9, County Route 516 (Cherry Tree Farm Road) over Mill Brook. The existing structure is a two-span cast-in-place rigid. The proposed structure will be a single span three-sided rigid frame with a clear span of 20'-0" on reinforced cast-in-place concrete spread footings. The bridge will be reconstructed on its current alignment. Due to the number of existing utilities located within close proximity of the existing structure, utility coordination is a critical phase in the design of this project. Overhead restrictions due to electric lines subject to the High Voltage Proximity Act, led to the redesign of the pile supported foundations to spread footings on engineered subgrade. Additionally, accommodation schemes including the relocation of some facilities prior to construction, in order to reduce construction duration. Work effort for this project included: Structural design of the proposed bridge and wingwalls; Roadway design including alignment and profile; geotechnical investigation and foundation design; traffic engineering for bypass roadway and signing and striping plans; utility coordination and accommodation; topographic survey and right-of-way engineering; preparation and approval of NJDEP permit applications for Freshwater Wetlands General Permit, Flood Hazard Area Individual Permit; cultural resources; and public outreach to stakeholders.

#### **New Hope-Lambertville Toll Bridge Pavement Rehabilitation & Approach Bridges Repairs**

##### **Delaware River Joint Toll Bridge Commission**

##### **Delaware Township, NJ & Salisbury Township, PA**

MPT Design Task Leader for engineering services to the Delaware River Joint Toll Bridge Commission for the pavement rehabilitation and approach bridges repairs at the New Hope-Lambertville Toll Bridge Complex carrying US Route 202 over the Delaware River. The project included innovative design utilizing cold in-place recycled base course for the reconstruction of the bituminous roadway and ramps along US Route 202 in the jurisdictional limits of the DRJTBC. In total the contract included the rehabilitation/ reconstruction of nearly a mile of bituminous and concrete roadway, repainting of light standards, sign structures and bridge superstructure and repair and rehabilitation of the approach bridges, US Route 202 over PA Route 32 and US Route 29 over NJ Route 29. Design work included the structural bearing replacement, jacking of existing beams, deck joint replacement, various substructure repairs and masonry repointing.

#### **Replacement of Ocean County's Daniel's Bridge, Waretown- Wells Mills Road (County Route 532)**

##### **Ocean Township, Ocean County, NJ**

Managed the hydrologic analysis using TR-55 methodology, PondPack and HEC-1 to calculate curve number and time of concentrations which were used to then calculate the NJ Flood Hazard Area Design Flood peak flow rate. Incorporated hydrologic findings in a hydraulic analysis of the existing bridge versus proposed bridge using HEC-RAS to calculate and minimize the change in water surface elevations. Managed the submission of a



comprehensive Hydrologic and Hydraulic Analysis Report to NJDEP for permitting. Prepared NJDEP Division of Land Use Regulations Program Flood Hazard Area and Fresh Water Wetlands permitting packages.

**Replacement of Mercer County Bridge 860.1, Millstone Road over Millstone River  
East Windsor Township, Mercer County, NJ**

Design of roadway elements related to the replacement of an existing bridge with a wider structure. Work includes design of road profile and cross section modifications, traffic control, soil erosion control, hydraulic calculations related to stream study, NJDEP wetlands and flood hazard area permitting.

**Replacement of Mercer County Bridge 672.9, Tattletown Road over Doctors Creek  
Hamilton Township, Mercer County, NJ**

Design of roadway elements related to the replacement of an existing bridge with a wider structure. Work included design of road profile and cross section modifications, traffic control, soil erosion control, hydraulic calculations related to stream study, NJDEP wetlands and flood hazard area permitting.

**South Post Road Bikeway**

**West Windsor Township, Mercer County, NJ**

Design of a porous pavement bicycle facility which was in part funded by NJDOT Local Aid. Design included design of the facility, traffic control, ADA accessibility improvements, soil erosion control. Also provided construction administration for the construction of the project, including construction inspection and administration of the construction contract including review, approval and processing of shop drawings, change orders and payment requests.

**Reconstruction of Penn Lyle Road Phase II**

**West Windsor Township, Mercer County, NJ**

Design of the reconstruction of Penn Lyle Road between Canoe Brook and Clarksville Road. Design included widening of the road to provide bicycle lanes in each travel direction. Due to limited right of way the road was designed with a complete lateral shift, requiring complete redesign of the road profile and cross section as the road. Work included geometric design, ADA accessibility, storm system modifications, traffic control, soil erosion control and NJDEP flood hazard area permitting. Project included obtaining NJDEP flood hazard area permits and soil erosion plan certification.

**Annual Road Improvement Program**

**West Windsor Township, Mercer County, NJ**

Design of roadway improvements to pavement, sidewalks, driveways, etc. on Southfield Road and Lillie Street. Design plans included stormwater system upgrades, ADA accessibility upgrades, soil erosion controls and traffic control plans.

**Pennington-Titusville Road Phase I&II**

**Hopewell Township, Mercer County, NJ**

This NJDOT Local Aid project involved design of roadway improvements to pavement, sidewalks, driveways, etc. on Pennington-Titusville Road. The Phase II portion included a full reconstruction of the roadway to add sidewalk and narrowing the roadway as a traffic calming measure. Design plans included stormwater system upgrades, ADA accessibility upgrades, soil erosion controls and traffic control plans.

**West Windsor – Plainsboro High School South Football Field & Track Improvements**

**West Windsor Township, Mercer County, NJ**

Assisted in engineering, design, and permitting related to the construction of renovations to an existing natural turf football field and a running track. The existing facilities were replaced with a synthetic turf football field, a new running track and field event facilities. Design included the design of the new facilities, including stormwater management facilities. Environmental permits obtained for the project included NJDEP wetlands, NJDEP flood hazard, Delaware & Raritan Canal Commission and soil erosion plan certification.



**West Windsor – Plainsboro High School North Tennis Court Renovation****Plainsboro Township, Mercer County, NJ**

Managed engineering design, preparation of construction plans and technical specifications, and construction administration. Project consisted of renovations to an existing six-court tennis facility.

**Northern Burlington High School Tennis Court Renovation****Mansfield Township, Burlington County, NJ**

Assisted in engineering design, preparation of construction plans and technical specifications, and construction administration. Project consisted of renovations to an existing five-court tennis facility.

**East Brunswick High School Northwest Quadrant Athletic Fields****East Brunswick Township, Middlesex County, NJ**

Assisted in engineering design, permitting and construction administration related to the construction of a synthetic turf varsity baseball field, a synthetic turf multi-purpose athletic field, a natural turf JV baseball field, a natural turf multi-purpose field, parking facilities and related stormwater management facilities.

**West Windsor – Plainsboro High School South Additions and Parking Lot Improvements****West Windsor Township, Mercer County, NJ**

Assisted in engineering design, and permitting related to the construction of two building additions to the school, and reconfiguration of the main parking lot. The design included site work related to the two building additions, stormwater management design, and design of a fully reconfigured parking lot and access drives for improved traffic circulation. Environmental permits obtained for the project included NJDEP wetlands, NJDEP flood hazard, Delaware & Raritan Canal Commission and soil erosion plan certification.

**West Windsor – Plainsboro High School North Football Field****Plainsboro Township, Mercer County, NJ**

Assisted in engineering design, and permitting related to the construction of renovations to an existing natural turf football field. The existing field was replaced with a synthetic turf football field. Design included the design of the new field, including stormwater management. Environmental permits obtained for the project included Delaware & Raritan Canal Commission and soil erosion plan certification.

**Dutch Neck Elementary School Addition and Parking Lot Improvements****West Windsor Township, Mercer County, NJ**

Assisted in engineering design, and permitting related to the construction of a building addition to the school and reconfiguration of one of the parking lots. The design included site work related to the building addition and parking lot as well as stormwater management design. Environmental permits obtained for the project included Delaware & Raritan Canal Commission and soil erosion plan certification.

**East Brunswick High School Football Field and Track****East Brunswick Township, Middlesex County, NJ**

Assisted in engineering design, and permitting related to the construction of renovations to an existing natural turf football field and a running track. The existing facilities were replaced with a synthetic turf football field, a new running track and field event facilities. Design included the design of the new facilities, including stormwater management facilities. Environmental permits obtained for the project included soil erosion plan certification.

**Secaucus High School Addition and Parking Lot Improvements****Secaucus Township, Hudson County, NJ**

Assisted in engineering design, and permitting related to the construction of a building addition and reconfiguration of the parking lots. The design included site work related to the building addition and parking lot as well as stormwater management design. Environmental permits obtained for the project included NJDEP wetlands, NJDEP flood hazard, NJDEP Tidelands, NJDEP Waterfront Development, and soil erosion plan certification.



**Upper Freehold Regional School District Middle School****Upper Freehold Township, Monmouth County, NJ**

Assisted in engineering design, and permitting related to a new middle school. The project included design site work related to a new school, parking facilities, athletic fields, and site stormwater management design, as well as preparation of a traffic impact study related to the new school. Environmental permits obtained for the project included NJDEP wetlands.

**Germantown Academy****White Marsh Township, Montgomery County, PA**

Assisted in engineering design, and permitting related to the construction of a building addition and reconfiguration of the parking lots. The design included site work related to the building addition and parking lot as well as stormwater management design. Environmental permits obtained for the project included soil erosion plan certification.

**Replacement of Mercer County Bridge 442.2, Green Lane over Shabakunk Creek****Ewing Township, Mercer County, NJ**

Design of roadway elements related to the replacement of an existing bridge with a similar structure. Work included design of road profile, pavement, sidewalk, storm sewer/water/gas/electric relocations, traffic control, soil erosion control, NJDEP wetlands and flood hazard area permitting.

**Sharon Road Improvements, Phase I & II****Washington Township, Mercer County, NJ**

This NJDOT Local Aid project involved design of roadway improvements to pavement, sidewalks, driveways, etc. on Sharon Road. Design plans included stormwater system upgrades, ADA accessibility upgrades, soil erosion controls and traffic control plans. Project included obtaining NJDEP wetlands permits and soil erosion plan certification.

**Perrineville Road Improvements****Washington Township, Mercer County, NJ**

This NJDOT Local Aid project involved design of roadway improvements to pavement, driveways, etc. on Perrineville Road. Design plans included soil erosion controls and traffic control plans. Project included obtaining soil erosion plan certification.

**Gordon Road Improvements****Washington Township, Mercer County, NJ**

This NJDOT Local Aid project involved design of roadway improvements to pavement, driveways, etc. on Gordon Road. Design plans included soil erosion controls and traffic control plans. Project included obtaining soil erosion plan certification.

**Pond Road & Route 526 Intersection Improvements****Washington Township, Mercer County, NJ**

This project involved the design of roadway realignment for the signalization of the intersection to mitigate the hazards at the existing intersection. Design plans included soil erosion controls and traffic control plans. Project included obtaining soil erosion plan certification.



## SUZANNE M. ZITZMAN, GISP

Principal/Manager Asset Management Services

### EXPERIENCE

### EDUCATION

- A.A.S. Applied Science, Brookdale Community College, 1985

### PROFESSIONAL CERTIFICATIONS

- Geomatics Professional Certificate, Rutgers University
- Geographic Information Systems Professional: GISP

### PROFESSIONAL AFFILIATIONS

- Lehigh Valley Economic Development Corporation
- Greater Pocono Chamber of Commerce
- Habitat for Humanity, Monroe County, PA
- NJ State Geographical Information Council 2000-2003
- NJ Geospatial Forum

### PROFESSIONAL EDITORIALS/ KEYNOTE SPEAKING ENGAGEMENTS

- iCIMS 2016 Panelist, "Women in Technology: Shaping the Workforce of Tomorrow"
- CIOReview Magazine April 2015, GIS "Go To" for Asset Management
- PennTec 2015 PWEA Conference, Managing Utilities through GIS
- PSATS PA Township News August 2015, Preparing for an MS4 Audit

Ms. Zitzman has over 30 years of extensive GIS/GPS project management, design, and mapping experience in the planning and civil engineering fields. Her skills include various aspects of utilizing web-based geographic information systems involving zoning maps, tax maps, land development analysis, environmental features mapping, land use planning, and infrastructure management. Her experience includes training of in-house and client staff in ESRI ArcGIS, and Autodesk products. She provides presentations in Municipal and County GIS applications to local planning boards and governing bodies. Ms. Zitzman previously held the private sector NJ State GIS Council seat providing GIS assistance in the startup of the states GIS program, NJGIN.

Ms. Zitzman also leads the firm's Quality Control/Quality Assurance Committee, where development of company standard procedures and policies are designed and implemented.

### PROJECTS

#### **Town of Orangetown, Rockland County, NY**

**Municipality Size:** 31 Sq. Mi.

**Sewer Collection System Project Size:** 206 Miles of Piping, 4,779 Manholes

#### **GIS Mapping / Drainage System & Sanitary Sewer Collection System**

GIS and land surveying services to provide drainage and sanitary sewer collection system GIS layers that will be viewable by accessing the Town's GIS website. The drainage and sanitary sewer systems will be inputted by using the existing sewer as-built maps, georeferencing these images referenced to the existing road centerline and parcels layers. The as-built plan view portion of the map will be used to capture attribute information of the system (rim elevations, grate elevations, inverts, pipe, size, pipe material, flow direction and slope). The piping network was constructed in direction of flow to allow for future system modeling.

#### **Township of Maplewood, Essex County, NJ**

**Municipality Size:** 3.8 Sq. Mi.

**Sewer Collection System Project Size:** 59 Miles of Piping, 1,558 Manholes

#### **GIS Program Mapping**

Professional GIS services for the creation of the Township's GIS mapping, coordination of the aerial project data delivery and the sign and signalization data collection. The mapping components consisted of parcels, road centerlines, zoning, park facilities, drug free zones, buildings, open space, drainage and sanitary systems, fire hydrants,



NJDEP and County Datasets, tax maps, voting poll locations, easements, snow plow routes, shade trees, utility mapping, NJAWC water system, school locations, voting districts, and sign and signalization. Data collected from the aerial flight were integrated into the existing layers.

The stormwater system and sewer collection system information was digitized from as-built plans provided by the Township. Planimetric data collected from the aerial flight was used to acquire the rim and grate elevations. This information was shown as attributes within the storm and sanitary sewer structures. Piping and manhole locations were adjusted based on the structure x,y locations collected during the aerial flight.

The mapping was displayed within the Townships GIS web-based asset management system. Work orders are being associated with problem pipes and areas of the system by the DPW staff.

#### **City of Clifton, Passaic County, NJ**

**Municipality Size:** 11 Sq. Mi.

**Sewer Collection System Project Size:** 192 Miles of Piping, 5,165 Manholes

#### **Phase 3 – GPS Sanitary Sewer Collection**

Professional engineering and surveying services were provided to construct a citywide sanitary sewer collection system GIS dataset. Data included manhole, pipe, pump station and basin datasets. Using GPS technology, manhole locations were located with elevation using RTK processes. These data were brought into GIS where additional attribute information was added by using the existing as-built mapping as a guide. Manholes can be queried by system area, manhole identifier and condition within the City's GIS program.

#### **Hamilton Township, Mercer County, NJ**

**Municipality Size:** 40 Sq. Mi.

**Sewer Collection System Project Size:** 332 Miles of Piping, 7,650 Manholes

#### **Hamilton Township Water Pollution Control Department, Sanitary Sewer Mapping**

GIS mapping services were provided to enter the Townships sewer collection system into GIS digital format. Manholes and piping were digitized using ESRI, ArcINFO™. Using a standard utility data model, the firm added attribute information from the existing As-Built maps. The Township provided as-built plans and road construction strip maps. The manually drawn as-built and strip maps were scanned and attached to road segments, enabling the GIS end-users to view the old reference maps as needed.

The Township divided the sewer collection system into project areas to allow for inspection work to be performed in a phased approach. GPS mobile units were loaded with the sanitary sewer collection system layers. A digital inspection form was created for the field inspectors. As the inspector approached a manhole the inspection form would be activated. Drop down lists and text entry fields were available for the field inspector to fill out as manhole lids were removed for internal inspection. This information was saved as attribute information on each manhole. The inspector collected the x,y location of the manholes. The revised location automatically corrected the GIS point representing the manhole. The sanitary sewer piping network automatically reconnected using the sanitary data model rules.

Photographs were taken for problem manholes during the inspection. These photographs were linked to the manhole in question. All of this information is being made accessible in the Township's web-based GIS asset management program.

#### **City of Summit, Union County, NJ**

**Municipality Size:** 6.1 Sq. Mi.

**Sewer Collection System Project Size:** 76 Miles of Piping, 2,200 Manholes

#### **City Wide Web-Based GIS Program**

Professional services were provided to develop a GIS program for the City of Summit and its numerous departments. A web-based interface using ESRI, ArcIMS coupled with the firm's asset management program, were used to accommodate the staff members throughout the City departments. The program required the



following layers to be created and/or updated: parcels, road centerlines, open space, zoning, and parking area locations, GPS locate parking meters, and environmental constraints data. Service calls and work order processes were implemented city-wide.

### **Sewer Collection System Inspections**

Professional services were provided in a phased approach to inspect the sanitary sewer collection system by using GPS mobile technology. Sub meter GPS locating was done for each manhole while collecting field inspection information (i.e. condition of manhole, infiltration observations, cover condition, walls, rungs). This information was differentially corrected using Trimble Pathfinder office software. Data was then brought into the GIS program where piping was automatically adjusted through ESRI, ArcINFO pipe networking applications. Photographs were taken for each manhole. The photos were tied to the appropriate manhole. This information was uploaded to the City's GIS program in order for the City to manage the sewer collection system service calls, maintenance schedules and work orders.

### **UTILITY AUTHORITIES**

#### **Long Branch Sewerage Authority, Monmouth County, NJ**

**Municipality Size:** 6.0 Sq. Mi.

**Sewer Collection System Project Size:** 86 Miles of Piping, 1,859 Manholes

#### **Sanitary Sewer Collection System Mapping**

Professional services were provided to create an overall geodatabase of the City's sanitary sewer collection system. The City provided a variety of plans dating from 1960 – 2004. The plans were reviewed and categorized by date, checking that the most recent information be used during the digitization process. The plans were scanned and georeferenced to County GIS land base information. Using the firm's standard sanitary sewer collection data model, manholes and piping were added into the geodatabase.

Once the information was entered, a set of index maps and an overall map was generated. The maps were used during meetings with the director and staff to allow the GIS team to point out data problem areas and areas that had no map reference. Revisions were made as data became available. A digital submission requirement was put in place to allow the City to collect CAD and GIS formatted data when developers submit plans for approval. This information is fed to the firm in order to keep the data up to date.

#### **GIS Sewer System Management**

Professional services to provide a web-based GIS Sewer Management system using ESRI ArcIMS as the web service coupled with the firm's asset management program. The sewer system mapping is accessible to view and to edit information regarding pipe size, type and material, inverts, rims, and flow directions. Data continues to be updated within the authorities GIS maintenance plan adding GPS data collection and/or digital plans from survey and subdivision projects related to the sewer system expansions and / or rehabilitation projects. The Authorities account database is linked to the land base parcels (CSI), allowing the Authority to find properties that may be serviced by the system and are not paying for the service. Service requests and property card information regarding the location of cleanouts and owner information is tied to each property.

#### **Middletown Township Sewerage Authority, Monmouth County, NJ**

**Municipality Size:** 59 Sq. Mi.

**Sewer Collection System Project Size:** 321 Miles of Piping, 7,436 Manholes

#### **Sewer Asset Management System**

Professional services were provided to prepare an overall geodatabase file for tracking manhole and sewer piping throughout Middletown Township. Data was converted to the NJ NAD83 coordinate system and then updated to reflect sewer system additions. The GIS data was then set up for printing based on a grid system that covers the entire township. This allows for manageable printed maps that can be used in the field during inspection and maintenance work.



Professional services were also provided to conduct sewer inspections through GPS mobile technology. GPS collection was used to field collect (sub meter accuracy) each manhole while collecting field inspection information (i.e. condition of manhole, infiltration observations, cover condition, walls, rungs). This information was differentially corrected using Trimble Pathfinder office software. Data was then brought into the GIS program where piping was automatically adjusted through ESRI, ArcINFO pipe networking applications. This allowed for the Authority to view the more accurate locations within their asset management program.

Design and host the Authority's Asset Management System for office and field staff. Ongoing enhancements to the system include data creation, existing data updates and revisions, site maintenance, site image and document linking, site data integration, site software application enhancements, staff training for GIS services, staff support for GIS / GPS tasks, GIS / GPS data field collection.

The Authorities account database is linked to the land base parcels (CSI), allowing the Authority to find properties that may be serviced by the system and are not paying for the service. Service requests and property card information regarding the location of cleanouts and owner information is tied to each property.

