CDM Smith

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June 14, 2012

State of West Virginia
Purchasing Division
2019 Washington Street, East
Charleston, WV 25305-0131

Subject: Buyer: Tara Lyle / Req #: COR61531
Opening Date 06/19/2012 / Opening Time: 1:30 PM

Dear Sir/Madame:

CDM Smith is pleased to submit this Expression of Interest (EOI) to provide Professional Architectural/Engineering Design Services to Correct Various Issues dealing with a Grease Trap, Muffin Monster, Storm Water Lines, Sewer Lines and Other Projects at the St. Marys Correctional Center.

The enclosed EOI highlights the experience of the CDM Smith team and includes information on projects which demonstrates our capacity to perform all the duties we anticipate to be required by St. Marys Correctional Center. The depth of our team and team members is clearly evident and we are excited about the prospect of performing these projects.

There is no substitute for experience and client commitment. The CDM Smith Team offers resources with relevant experience located in our Pittsburgh, Charleston and Columbus offices. We are fully dedicated to ensuring that the St. Marys Correctional Center projects not only meet but exceed expectations, and we ask that you give our team serious consideration.

We appreciate the opportunity to submit this EOI and look forward to discussing it with you at your convenience.

Very truly yours,

Matthew R. Sickles, P.E.
Vice President
CDM Smith Inc.

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RFQ No. COR 61531

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

DEFINITIONS:
"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (***West Virginia Code*** §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: CDM Smith Inc.

Authorized Signature: Matthew R Dunn Date: 5/21/12

State of Pennsylvania

County of Allegheny, to-wit:

Taken, subscribed, and sworn to before me this 21st day of May, 2012.

My Commission expires _____, 20___.

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Lynne A. Nestler, Notary Public
City of Pittsburgh, Allegheny County
My Commission Expires Feb. 28, 2013
Member, Pennsylvania Association of Notaries

AFFIX SEAL HERE

NOTARY PUBLIC Lynne A. Nestler

EXHIBIT 10

REQUISITION NO.: COR61531

ADDENDUM ACKNOWLEDGEMENT

I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.

ADDENDUM NO.'S:

NO. 1 ...✓...

NO. 2 ...✓...

NO. 3 .....

NO. 4 .....

NO. 5 .....

I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF THE ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF BIDS. VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL REPRESENTATION MADE OR ASSUMED TO BE MADE DURING ANY ORAL DISCUSSION HELD BETWEEN VENDOR'S REPRESENTATIVES AND ANY STATE PERSONNEL IS NOT BINDING. ONLY THE INFORMATION ISSUED IN WRITING AND ADDED TO THE SPECIFICATIONS BY AN OFFICIAL ADDENDUM IS BINDING.

Matthew R. Dunn
SIGNATURE

CDM Smith Inc.
COMPANY

06/08/2012
DATE

REV. 11/96

Section 1
Experience

About CDM Smith

CDM Smith is a full service consulting, engineering, construction, and operations firm, delivering exceptional client service, quality results and enduring value across the entire project lifecycle to public and private clients worldwide.

On February 25, 2011, CDM and international transportation consultant Wilbur Smith Associates joined forces to become CDM Smith. In addition to compatible cultures, complementary capabilities and well-matched geographies, both firms are dedicated to exceptional client service and technical excellence. Together, our unwavering focus remains on creating innovative and lasting solutions that improve environmental value, quality of life and economic prosperity. With over $1.2 billion in annual revenues, we maintain the size, stability and resources to successfully undertake a diverse range of projects, applying local knowledge through a network of more than 125 offices worldwide while leveraging the full resources and expertise of our 5,500 global staff.

Our proposed project team combines experienced resources located in Pittsburgh, PA; Charleston, WV; Morgantown, WV; and Columbus, OH. Resources located in these offices offer the full spectrum of services anticipated for this project.

CDM Smith Today. Since 1947, CDM Smith has grown to provide a full range of services—including a full suite of engineering design services involving infrastructure, architecture, wastewater, water resources, environmental, and facility management—to both public and private clients. CDM Smith's projects range from small, short-term solutions to complex, ongoing environmental and infrastructure management programs, but they all share a common focus: *CDM Smith's driving philosophy of providing exceptional client service and building long-term client relationships.*

CDM SMITH OFFERS:

NEARBY RESOURCES WITH TECHNICAL STRENGTH, EXPERTISE AND COMMITMENT TO DELIVER

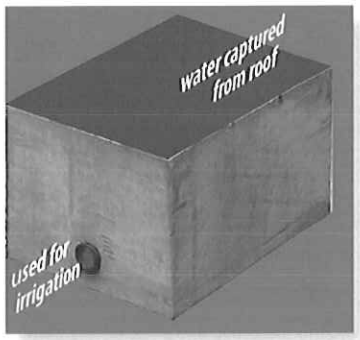
equipment guides and access ladder. The M3 could be readily installed downstream of the existing manhole by cutting into the existing sewer line.

Precast Concrete Chamber: This structure, illustrated on the following page, offers greater flexibility and reliability of operation by providing a grinder channel and a bypass channel. Wastewater normally flows through the grinder channel. In the event of grinder failure the bypass channel can be opened and the grinder channel isolated for maintenance. This is typically performed using slide gates in the channels. The system can also be designed so that under emergency conditions (i.e., power outage, clogging, or malfunction) wastewater will overflow the slide gates and continue flowing through the structure.

The Division may also want to consider the provision of a standby power generator in the event of a power outage.

Unit #83 Storm/Sanitary Water Lines

Based on the site tour provided by the Division, including inspection of the smoke testing photos and the inspection of drawings at the Pre-Bid Meeting, it is apparent that the roof drains for Unit #83 combine with the sanitary sewer lines exiting the building. Separating the roof drains from the sanitary lines in this building will reduce peak flow during wet weather significantly. However, this creates another issue, where to discharge the roof drains. For a building of this size, surface drainage is not a practical solution due to the quantity of water. Discharge to a storm drain is the easiest solution, if a storm drain of adequate capacity is near the building.



Rainwater Harvesting

Rainwater is captured from roof leaders and stored in a below ground cistern or a simple rain barrel. The water collected can then be used for irrigation and other uses.

Currently, there is a move toward more sustainable solutions for water usage reduction and stormwater peak flow reduction; particularly for storm drainage from large commercial buildings and parking areas. Rain water harvesting and treatment systems are available to allow reuse of the stormwater for grass/vegetation watering, cooling water for HVAC systems, and toilet flushing.

Unit #80 Foundation

Unit #80 is a single story building. The framing system for the building consists of a flat metal deck roof supported by steel bar joists that bear on exterior masonry walls. The exterior masonry walls, comprised of CMU and brick, are in turn supported by below-grade conventional concrete strip footers. The interior concrete floor slab is supported by the soil sub-base material below. Interior masonry walls are not load bearing and are supported by the concrete floor slab at grade. The conditions observed or noted at the pre-bid meeting and site tour at the northwest corner of the building included the following:

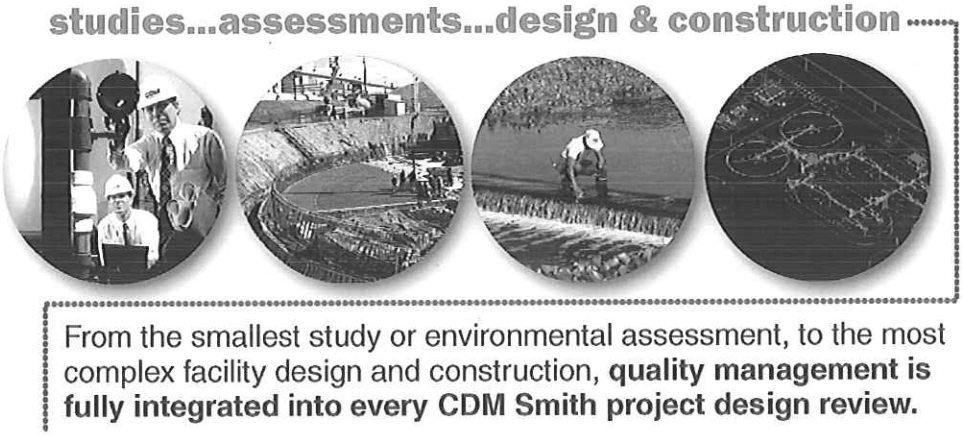
- Separation of exterior masonry wall joints
- Cracked brick and mortar on exterior and cracked CMU block on the interior walls
- Ponding of water on roof to northwest corner away from roof drains
- Sloping of the interior floor slab and associated slight rotations of the interior CMU walls
- Cracks along interior flooring tiles and interior ceiling materials
- Door inoperable; stuck in door jamb

Design Quality Control Procedures

CDM Smith's quality management procedures are detailed in its Quality Management Process Manual. CDM Smith's initial quality management step is the project kickoff workshop and the development of the project work plan that, as an integral component, specifies quality management activities, scheduled reviews, checking procedures, and responsibilities for their implementation.

Technical QA/QC reviews are described in detail in QMP and include the following activities:

- Department or functional discipline checking of computations, drawings, and outline specifications for technical accuracy and functional acceptability.
- Progress meetings with client personnel to review the status.
- "Sign-off" by task managers and project manager prior to submittals.
- "Sign-off" by CDM Smith QA officer that the above steps have been properly conducted prior to formal submittal of final work products.

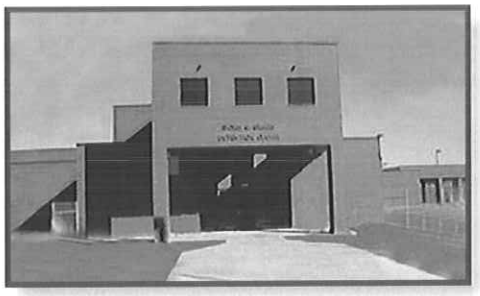


To ensure the proper application of specialized engineering expertise for all clients, the firm makes use of its quality management procedures that includes creating a Technical Advisory Group. The quality management procedures provide for the preliminary and final review of all concepts, contract plans, layouts, and project reports, and provide for the issuing of internal memoranda which concern developing technologies. These procedures provide for the most up-to-date technical information from inside and outside the firm, and the maintenance of technical files for new products, processes, and construction techniques. In addition, these procedures provide for the involvement of specialists, as needed, to participate in the review of extraordinary or particularly challenging projects.

Relevant Project Experience

Aiken County Detention Facility

CDM Smith provided design services to serve this new 400 bed correctional facility. Plans included the abandonment of an existing pump station and replacement with 3,400 l.f. of gravity sewer line, 4,000 l.f. of 6" force main, and a 290 gpm pump station. Site specific design included the incorporation of a "Muffin Monster" to grind discharge from correctional facility.



components on a single level and providing two-tiered housing units with supervision at officer stations located at common secure corridors.

This facility is approximately 185,175 square feet and includes: administration, intake, medical program, food service, warehouse storage, booking and processing, visitation, counseling, laundry, staff support, mechanical, generator, storage, maintenance, outdoor recreation, video, security and inmate housing.

In addition to the elevated portion of the project, a vast array of site improvements were required to support the facility, including:

- Geothermal Wells
- Elevated Water Tower
- Emergency Power Generator Farms
- Sanitary Pumping Stations
- Perimeter Security System

Construction Management

CDM Smith is performing program management and resident inspection services for the construction of the Plaquemines Parish Detention facilities. These facilities include a 450-bed (90,000 s.f.) temporary facility and an 850-bed (186,000 s.f.) permanent facility. The project is currently in the design phase and is expected to be completed in 5 years. The estimated cost of construction for both projects is $120 million.

Plaquemines Parish Sheriff's Office owned four steel frame at-grade structures which were destroyed during Hurricane Katrina. Due to the new Advisory Base Flood Elevation (ABFE) guidelines, these structures will need to be elevated 19 ft. above the existing ground. The cost associated with elevation of the structures dictates consolidation of the facilities. The facility will be composed of precast elements to accelerate the construction process. CDM Smith is providing construction management and resident inspection, which includes the preparation of multiple bid packages to aid in the reduction of the construction timeframe. CDM Smith is also responsible for providing construction estimates and schedules. As the existing utility services have been damaged, CDM Smith is assisting the client in exploring alternative renewable energy sources such as geothermal wells and solar panels.

Southern Correctional Facility Wastewater Treatment Plant Renovation, Lucasville, Ohio

The Southern Correctional Facility wastewater treatment plant originally was designed to handle 0.6 million gallons per day (mgd) average daily flow. The plant serves the prison for 600 inmates and the Village of Lucasville, as well as some parts of Scioto County, Ohio. For several years the plant had difficulties meeting NPDES permit requirements. The bar screen at the prison site had reached the end of its useful life and needed to be replaced. CDM was retained by the Ohio Department of Rehabilitation and Correction to determine and design needed improvements, as well as to provide bidding assistance and part time inspection services.

During the preliminary design, CDM determined that the poor performance of the plant was due to the poor performance of the clarifiers. The clarifiers' equipment at the plant was so old it could not be repaired to extend its useful life. Three options were considered: (1) replacement with peripheral type clarifier equipment, (2) replacement with central feed type clarifier equipment and (3) complete replacement of clarifiers including concrete structure and equipment. The last option was chosen due to the fact that the existing clarifiers have only 8.5 feet side water depth. This approach required designing a new splitter box and return

- Working with user departments developed space programming questionnaires to determine needs, conducted interviews, incorporated space sizing standards and documented current needs and projected space needs to the year 2014

- Considered alternatives for meeting space deficiency at existing facility - partial relocation, construction of new police department building and interim rental space and interim backfill of vacated space
- Developed site evaluation criteria and projected required site size for a new police facility, considering building configuration, parking, security and site configuration
- Evaluated two rental office buildings for relocation of Police Headquarters Administration and Criminal Investigations Divisions addressing concerns about security, parking, space configuration and access
- Designed conceptual floor plans, developed build out specifications for room enclosure, finishes, utilities services, and design criteria for mechanical, electrical and security systems for 32,000 sq ft of temporary rental office space for the Administration and Criminal Investigations Divisions of the Police Department
- Designed conceptual floor plans, developed build out specifications for room enclosure, finishes, utilities services, and design criteria for mechanical, electrical and security systems for 16,000 sq ft of temporary rental office space for the Patrol Division of the Police Department

- Negotiation of rental space build out costs, quality assurance oversight of design/build contractor, coordination of city security systems contractor, construction progress meetings and inspections
- Police Department move planning, furniture inventory and condition evaluation, operational and staff logistics
- Designed a three phased relocation to upper floors of the Public Safety Center for the Records, Property and Evidence Departments of the Police Department, and for the Administration and Security Divisions of the Office of Sheriff to relieve overcrowding and free up the ground floor for slab reconstruction
- Programming future growth and new correctional services of Office of Sheriff, and prepared Concept plans for expansion for medium and minimum security housing units within the Public Safety Center
- Designed and prepared construction documents for a $14.5 million five phase reconstruction of the ground floor foundations, structural slab and buried utilities. The project includes maintaining public access to police and sheriff offices on upper floors and uninterrupted operation of the Detention Center during renovations. Among the challenges addressed to allow the floor slab to be reconstructed included the relocation of primary 911 emergency and building telecommunications and UPS equipment, replacement of primary building heating, cooling mechanical and fire protection equipment, temporary and permanent locker and meeting space for police and sheriff personnel, new offices for magistrate, new department offices, inmate intake and holding cells for the booking, records and classification units. The 24-month construction period began in April 2008, with CDM Smith providing continuing services during public bidding and construction.

innovative combination of tools is expected to support the City's I/I program long after the assessment is finished by allowing the City to quickly identify problem areas and prioritize future sewer improvements.

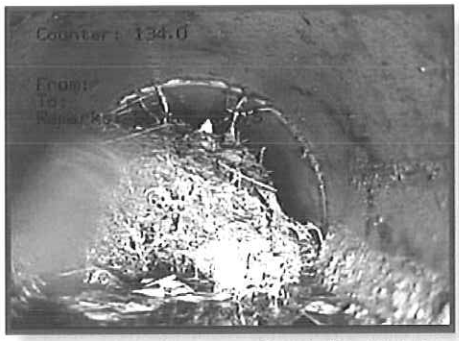
NASSCO PACP Coding. The National Association of Sanitary Sewer Companies (NASSCO) has a standard sewer assessment program known as the Pipeline Assessment and Certification Program (PACP). The goal of the NASSCO PACP is to create a comprehensive and reliable sewer condition database that can be used in prioritizing, planning, and renovating wastewater collection systems. For this project, all contractors were required to be PACP certified and collect the data using the NASSCO PACP format. Data was collected with several different software programs and compiled into a single database with Pipetech®.

Condition ratings within PACP are algorithms and weighting factors which are used to convert the descriptive data developed from the PACP codes into general categories of pipe condition. This conversion focuses attention on the sewer segments that need further evaluation and consideration for renewal or replacement.

Cleaning the Sewer System. The city regards CCTV inspections coupled with sewer cleaning as one of the most important functions it can perform for its sewer system. This work supports both the project objectives of identifying and quantifying sources of I/I, as well as improving collection system maintenance operations.

Sewer Condition Ranking/Grading. Internal pipe condition grades are automatically created from the defects recorded in the CCTV truck as the operator identifies the sewer defects (e.g., cracks, voids, roots, debris, grease and infiltration). Defects are generally categorized as either "structural-related" or "O&M-related" depending on the type of defect. Each category (or group) of defect (O&M and structural) has a specific rating associated with it. Some methodologies of rating pipes combine the structural and O&M ratings together to form an "overall rating." However, this methodology can be misleading, as serious defects may be averaged with less serious defects, which may lead to incorrect recommendations and prioritizations. CDM Smith's methodology keeps the O&M defects and structural defects separate. Condition grades are assigned to the entire segment based on the worst condition observed along the length, range from 1 (best condition) to 5 (worst condition). From an O&M-rating viewpoint, root intrusion, debris and attached mineral deposits appeared to be the most common problems within the sewer system in this study area.

Root Intrusion. When roots enter a sewer lateral or mainline, they grow rapidly, causing separation and cracking of pipe joints. This was certainly true of this area, where roots were found in abundance in the mainline and laterals. Because the laterals in this jurisdiction are considered the homeowners' responsibility, the contractors could only remove the roots within the mainline. This leaves the lateral root problems to be resolved later, presumably by the homeowners. With the powerful GIS and data management tools applied to the NASSCO PACP database, numerous queries were used to characterize the sewer system conditions. This information, especially when depicted graphically, enables the project team to prioritize both the planning and maintenance of the sewer system.



Rootball in Mainline.

Roots in Laterals. Since roots within the laterals may be one of the causes of basement backups and the homeowner is considered the responsible party for maintaining the lateral, the city is evaluating procedures for informing homeowners about lateral root problems found during the course of the project. While not obligated to inform homeowners of such potential problems, the city desires to do so to help solve basement backup problems that may be partially caused by roots within the laterals.

Section 2
Staff and Resources

Capacity for Timely Completion

The CDM Smith Project Team is committed to providing experienced and qualified staff to manage and direct project activities. Our project team provides numerous staff available to provide expertise in the anticipated disciplines for this project. With CDM Smith's vast resources, priority is given to staff with experience in projects similar to your needs.

CDM Smith will plan internal and external staff availability at the outset of the project to provide the right mix and number of technical staff. CDM Smith will also manage the proposed schedule and use our experience on similar projects to forecast staff availability to meet critical milestones and deliverables. If the need arises, CDM Smith will also be able to draw on our more than 5,500 employees nationwide to complete the project on time and within budget.

To forecast staff availability, CDM Smith's workload management system (WMS) will be used to effectively manage staff workloads throughout the project. WMS provides a web-based, real-time workload forecast and resource management system for CDM Smith project managers. This system allows the project manager to forecast anticipated resource needs for all tasks well in advance, so each project has the necessary staff available when needed. The system is updated weekly and reviewed monthly by all project managers for consistency and reliability. Using this system, CDM Smith can provide St. Marys Correctional Center with the required staff to meet the contract schedule.

Project Team

CDM Smith has assembled an experienced and qualified team to assist St. Marys Correctional Center with professional engineering services dealing with various projects outlined in the request for qualifications.

We recognize the importance of not only providing the highest caliber of resources, but of providing the right expertise in the right roles. The organization chart on the following page illustrates the proposed organization of our project team. In addition, CDM Smith has proven its ability to meet aggressive project schedules for major projects within or significantly under budget. We will work closely with your staff to ensure that design and construction management services for St. Marys are completed in a timely and cost-effective manner and that the project meets your expectations.

Subconsultant Support

Herbert, Rowland & Grubic, Inc. (HRG)

HRG is a consulting professional engineering & land surveying firm whose professional staff includes engineers, surveyors, technicians and computer operators. HRG provides a comprehensive range of engineering, surveying, planning, design and development service for a wide variety of public works, land use, and development projects. HRG services include all aspects

Key Staff

Brief biographies of proposed key staff follow. We have included resumes of each team member at the end of this section.

Matthew R. Sickles, P.E. – Officer-in-Charge

Mr. Sickles is an environmental/civil engineer with 23 years of engineering and project management experience in a variety of environmental and civil projects for transportation, municipal and industrial clients. Mr. Sickles has management and engineering experience with environmental investigations and studies, civil and remedial designs, mitigation designs, preparing specifications and design drawings, permitting, bid services, construction administration services, resident engineering services, and operation and maintenance. He has provided management and engineering services for a large number of multi-discipline projects.

Scott L. Cowburn, P.E., BCEE – Project Manager

Mr. Cowburn is a project manager with 27 years of experience in a variety of environmental engineering projects including water and wastewater treatment facility planning and evaluations, sewer system evaluation surveys and design, construction services, environmental assessment studies, and design of modifications to treatment facilities.

Design and Construction Management

Anna Mehrotra, Ph.D., P.E. – Grease Trap/Muffin Monster

Dr. Mehrotra is an environmental engineer with experience in wastewater process analysis and modeling, wastewater treatment plant design, pilot studies, water quality modeling and surveys, and constructed wetland engineering. She has provided services for industrial clients for grease interceptor and open channel grinder applications.

John Schroeder, P.E., BCEE – Sanitary/Storm Sewers

Mr. Schroeder is a civil and environmental engineer with more than 19 years of experience in planning, design and construction of stormwater, water and wastewater systems. His specific qualifications include: sewer system assessment, pressure pipe assessment, pipeline design, pipeline rehabilitation, stormwater master plans, infiltration/inflow studies, stormwater pollution prevention plans, NPDES permitting and stormwater quality sampling, water transmission design, pump station design, construction inspection and cost estimating. Mr. Schroeder is a certified trainer in the NASSCO pipeline assessment and certification program (PACP) and has been training engineers across the country in this program.

George Joseph Crittenden - Sanitary/Storm Sewers / Inspector

Mr. Crittenden has 36 years of experience in providing project management, client coordination, project design, design studies, value engineering, construction inspection, and surveying for correctional facilities, government buildings, private developments, highways, airports, residential subdivisions, and abandoned mine land reclamation projects. Mr. Crittenden has been involved in grading, drainage, new highway design, roadway improvement projects, and bridge replacement projects in multiple locations within West Virginia, Tennessee, Georgia, South Carolina, New Jersey, Pennsylvania, and Kentucky. Many of the projects were of a "fast track" nature.

Stephen Caruso – Sanitary/Storm Sewers

Mr. Caruso is a civil engineer with a wide variety of civil design experience. He has provided engineering services during construction and is proficient with several CAD and land development software. As a civil designer/CADD coordinator, Mr. Caruso has also assisted in designing and coordinating the design of sewer line extensions, sewer separation, pump stations and connections to local public sewers.

and construction management of stormwater and wastewater facilities. Additionally, construction management responsibilities include, reporting, budgeting, cost estimating, specification enforcement, shop drawing review, construction inspection and certification, and testing and facility commissioning.

James Girson - Inspector

Mr. Girson has been responsible for all field activities of construction projects, ensuring that projects were constructed in accordance with contracts and documents. He has verified materials and procedures of construction, and communicated with officials and the general public informing them of the work and any issues that need to be addressed throughout the project. Mr. Girson has solved problems that arose during construction. He has ensured accuracy of field measurements and calculation of quantities, prepared daily reports and monthly pay estimates. In addition, Mr. Girson has extensive experience with water and sewer line installations.

Resumes

Matthew R. Sickles, P.E.

Officer-in-Charge

Relevant Projects

Officer-in-Charge, Deicing Impacted Stormwater Collection, Conveyance, Storage and Treatment, Pittsburgh International Airport, Pittsburgh, Pennsylvania. Mr. Sickles serves as officer-in-charge for this critical and unique project intended to address receiving stream water quality concerns associated with deicing/anti-icing activities. The project will ultimately include capture, conveyance, storage and treatment of stormwater impacted by deicing/anti-icing fluids used at the airport. The project team completed the NEPA environmental assessment phase, which included the development of appropriate alternatives, determination of environmental impacts and associated mitigation requirements, and communication with and acceptance of a proposed alternative by FAA and PaDEP. CDM Smith is completing preliminary and final design, permitting, construction management and operation and maintenance. Mr. Sickles is responsible for CDM Smith's overall services and performance for the project.

Project Manager, Watershed Improvement Project, Pittsburgh, Pennsylvania. Mr. Sickles served as the project manager on the Nine Mile Run Watershed Improvement Project for the Pittsburgh Water and Sewer Authority (PWSA). The project scope included rehabilitation design for the combined sewer interceptor, and system inventory, system condition assessment, and hydraulic/hydrologic characterization of the combined and separated sewer systems within the 4,118-acre Nine Mile Run watershed. Project tasks included field verification (location and condition) of over 1200 sewer structures, sewer televising and cleaning, dye testing within the separated sewer areas, flow monitoring, hydrologic and hydraulic modeling using SWMM, and incorporating all data into a Geographic Information System (GIS). The GIS served as a tool for prioritizing rehabilitation needs. As project manager, Mr. Sickles coordinated all project efforts with PWSA and was responsible for meeting PWSA's expectations and delivering quality products to PWSA.

Officer-in-Charge, On-call Architectural & Engineering, Pittsburgh, Pennsylvania. Mr. Sickles is serving as the officer-in-charge on this on-call for the City of Pittsburgh, Department of Public Works. Project activities vary from structural and architectural evaluations of existing structures, to existing facility office renovations and roof rehabilitations, to installation of electrical and mechanical system energy efficiency upgrades. The key to our success with this project has been our ability to respond with resources in a timely manner and deliver quality work products.

Education

- B.S. - Environmental Engineering, The Pennsylvania State University, 19891995

Registrations/Certifications

- Professional Engineer: Pennsylvania, 1995

Training

- 40-Hour Health and Safety Training, OSHA
- Confined-Space Entry Training, OSHA

Scott L. Cowburn, P.E., BCEE

Project Manager

Education

- B.S. - Civil Engineering, University of Lowell, Massachusetts, 1985
- B.S. - Biology, State University of New York at Cortland, 1980

Registrations/Certifications

- Professional Engineer: New Hampshire (1989), Pennsylvania and Michigan
- Board Certified Environmental Engineer (BCEE), American Academy of Environmental Engineers

Relevant Projects

Project Manager, Wastewater Treatment Plant Expansion and Upgrade, Pittsburgh, Pennsylvania. Mr. Cowburn serves as project manager for the design management and construction management of a $170 million Capital Improvements Program for expansion and upgrade of the Allegheny County Sanitary Authority's (ALCOSAN) 250-mgd wastewater treatment plant in Pittsburgh, Pennsylvania. Since 1997, his responsibilities included the design and construction of plantwide instrumentation and distributed control system upgrade, and the program management of engineering services during construction of improvements to primary treatment, odor control, secondary treatment, and disinfection facilities; and biosolids dewatering, incineration and lime stabilization facilities. The construction program was completed in 2004.

Project Manager, Expansion of Wastewater Screenings and Grit Handling Facilities, Pittsburgh, Pennsylvania. Mr. Cowburn served a dual role as project manager and lead process mechanical engineer during 2004 and 2005 for the evaluation and design of additions and modifications to the preliminary treatment facilities at the 250-mgd ALCOSAN wastewater treatment plant. This project includes the expansion of existing process buildings for the addition of two bar screens and two aerated grit chambers adjacent to the existing four process units. The grit handling facilities include grit collecting screw conveyors, grit slurry pumps, grit washing/dewatering units, belt conveyors and grit truck loading garage. The work also includes electrical upgrade of the original process buildings that are over 50 years old in order to meet current electrical codes and standards and extension of odor control facilities to the new process areas. Mr. Cowburn managed engineering services during construction including shop drawing review, response to contractor questions and claims, commissioning, and operator training. The project construction was completed with less than one percent change orders.

Project Manager, Interceptor Replacement, Providence, Rhode Island. Mr. Cowburn provided project management for the design and construction management of a 42-inch diameter interceptor replacement project in the City of Providence, Rhode Island for the Narragansett Bay Commission. Mr. Cowburn's responsibilities included coordinating the environmental permitting, design and engineering services during construction. The project included replacement of approximately 1-mile of deteriorated interceptor piping. The project was complicated by its location in a coastal zone and wetland areas along the Seekonk River, a pipe jacking required for a railroad embankment crossing, and alignment through commercial and city park property.

Project Manager, Sewer System Rehabilitation, Pittsburgh, Pennsylvania. Mr. Cowburn served as project manager for the design of sewer system rehabilitation for the Nine Mile Run Interceptor in Pittsburgh, Pennsylvania. This work for the Pittsburgh Water and Sewer Authority included the design of cured-in-place liner for approximately 5,000-linear feet of 32- to 48-inch-diameter brick and concrete sanitary sewer lines. The project also included the rehabilitation or reconstruction of manhole structures.

Anna S. Mehrotra, Ph.D., P.E.

Grease Trap/Muffin Monster

Education

- Ph.D. – Environmental Engineering, UC Berkeley, 2003
- M.S. – Environmental Engineering, Stanford University, 1995
- B.S. – Mathematics/Applied Science, UCLA, 1993

Registrations

- Professional Engineer: Ohio, 2010

Relevant Projects

Engineering Study for Industrial Client, Pennsylvania. Ms. Mehrotra performed an engineering study and design for an industrial client to identify cost-effective, feasible options for meeting pretreatment requirements. Specifically, the client historically had difficulty maintaining compliance with their 200 mg/L oil and grease pretreatment limit. Therefore, the recommended 800,000 gpd pretreatment train included a 20,000 gallon grease interceptor with four baffled compartments and effluent filter. The interceptor will receive screened flow, and will discharge directly to the sewer. Both above-grade and buried applications were considered for the interceptor; the above-grade option was selected due to site constraints and high excavation costs associated with below-grade installation.

Project Engineer, Deicing Impacted Stormwater Collection, Conveyance, Storage and Treatment, Pittsburgh, Pennsylvania. For the new 10-mgd facility at the Pittsburgh Airport designed to treat deicing-chemical-impacted waters, Dr. Mehrotra performed water quality and SWMM modeling to predict flows and loads to the plant; oversaw pilot-scale testing for a moving bed biofilm reactor process; and completed preliminary process design. Her design included the installation of a muffin monster ahead of the pump station that conveys retained stormwater to a planned treatment process.

Project Engineer, Wet Weather Treatment Alternatives Analysis, Pittsburgh, Pennsylvania. Dr. Mehrotra assisted with the facilities planning effort associated with the expansion of peak wet weather flow capacity from 250-mgd to 600-mgd at the Allegheny County Sanitation Authority's Woods Run Wastewater Treatment Plant (WWTP). Her responsibilities included analyses of existing secondary treatment capacity, evaluation of secondary treatment alternatives for increasing capacity, and benchmarking of new wet weather treatment technologies for implementation at the plant site.

Project Engineer, Comprehensive Wastewater Management Plan, Mansfield, Massachusetts. Dr. Mehrotra assisted with the assessment of wastewater alternatives for the town of Mansfield. She focused on the capability of the existing treatment to treat future flow volumes and used hand calculations and BioWin modeling software to identify the process capacity of the existing treatment facility and process options to meet future treatment limits.

Project Engineer, New and Rehabilitated Sewers, Amherst, Massachusetts. For the town of Amherst, Dr. Mehrotra designed one mile of new and rehabilitated gravity sewers. Her responsibilities include layout and sizing of pipelines and preparation of design drawings and specifications.

John P. Schroeder, P.E., BCEE

Sanitary/Storm Sewers

Relevant Projects

Project Engineer/Task Manager, Sanitary Sewer Inflow and Infiltration Studies, Columbus, Ohio. For the City of Columbus Livingston James inflow/infiltration (I/I) study and Northwest Alum Creek I/I study, Mr. Schroeder managed all the field work and is the lead design engineer for developing a 30-year prioritized capital improvement plan for structural, hydraulic and O&M improvements. The I/I studies were being conducted to determine the locations and causes of I/I to pinpoint problem areas of flooding and sewage back-ups and recommend cost-effective corrective actions, including how to mitigate or prevent infiltration from entering the system. Over 1,200,000 feet (220 miles) of 8- to 60-inch sanitary sewers were cleaned and inspected as part of these I/I studies. The private and public I/I investigations utilized numerous field methods and engineering evaluations including flow monitoring, surveying, hydrologic and hydraulic (H&H) modeling, dye testing, CCTV inspections of mainlines and laterals, basement inspections, and wet-weather inspections to determine the precise locations and quantities of I/I within the system.

Design Engineer, Sewer Rehabilitation Design, Zanesville, Ohio. In Zanesville, Mr. Schroeder was a design engineer and technical expert responsible for the final review of plans and specifications for the 40,000-foot sewer system rehabilitation project. He oversaw the CIPP installation of the first phase (15,000 feet of 18"-24" sewer) of construction in 2008. This project has documented significant structural, O&M and I/I reduction benefits to the sanitary sewer system.

Technical Advisor and CIPP Specialist, Sewer Rehabilitation Design and Construction Oversight, Camp Pendleton Marine Base, California. For the Camp Pendleton Marine Base Sewer Inspection Rehabilitation projects in Carlsbad California, Mr. Schroeder is the technical advisor and CIPP specialist responsible for training CDM Smith engineers to review CCTV inspections and developing cost effective sewer improvements. This project was a design-build method of delivery which reduced overall costs and schedule.

Technical Advisor and CIPP Specialist, Newark Brick Sewer Rehabilitation Design and Construction Oversight, Newark, New Jersey. Mr. Schroeder was the technical advisor and CIPP specialist responsible for preparing and reviewing plans and specifications, and providing guidance during construction when problems occurred. This six-phase set of projects entails over 100,000 linear feet of large diameter CIPP installation of brick sewers (round and egg shape) from 24- to 108-inch.

Project Engineer/Manager, Stormwater Improvements, Dublin, Ohio. For the City of Dublin Bliss Run trunk sewer improvements project on Shier Rings Road, Mr. Schroeder was the project manager and project engineer for the design of two culvert replacements and adjacent stream modifications. CDM Smith developed a SWMM model for the stormwater system and designed the stormwater improvements to eliminate local flooding of the roadway and access driveway to the city's maintenance facility.

Education

- B.S. – Civil Engineering, University of Cincinnati, 1992 B.S. – Civil Engineering, University of Cincinnati, 1992

Registrations/Certifications

- Professional Engineer: Ohio, 1996
- Board Certified Environmental Engineer (BCEE), American Academy of Environmental Engineers
- Golden Manhole Award (OWEA)
- Young Engineer of the Year (OSPE)
- Trainer in NASSCO Pipeline Assessment & Certification Program (PACP)

George Joseph Crittenden

Sanitary/Storm Sewers / Inspector

Relevant Projects

Senior Designer, Green River Correctional Complex, Central City, Kentucky. As senior designer for this project, Mr. Crittenden developed grade and drain plans for the correctional complex. The grading plans included access roads, common areas, parking areas, line of sight, consideration for utility locations, special undercut/backfill for structure locations, and coordination with geotechnical engineers to ensure structure stability for the planned automated locking systems. The construction phase included inspecting the installation of an under drain system, storm drain system, compaction testing, and the special undercut/backfill at the structure locations.

Senior Designer, Hartman Run, Morgantown, West Virginia. Mr. Crittenden was responsible for the pavement drainage and storm sewer design for a bridge replacement project located in Morgantown, West Virginia.

Senior Designer, Huntington Industrial Center Access Road, Huntington, West Virginia. Mr. Crittenden served as senior designer for this access road project. The project extended 8th Avenue into the Hunting Industrial Center. The curb and gutter project contained grade, drain, storm sewer, water line relocation, signing, and pavement markings.

Senior Design Technician, Tabler Station Connector, Corridor H, West Virginia Department of Transportation Division of Highways. As a senior design technician, Mr. Crittenden developed complete highway construction and right-of-way plans for the Tabler Station Connector, Corridor H (U.S. 48) in Grant County near the Greenland Gap, and the Jones and Laughlin value engineering plans. The projects included grade, drain, storm sewer, water line relocation, sanitary sewer relocation, pave, pavement markings, and NPDES permitting.

Senior Design Technicians, Highway Construction and Right-of-Way Plans, West Virginia Department of Transportation Division of Highways. The projects included the Arlington Truss bridge replacement approaches, 5- and 20- Mile Creek bridge replacement approaches, Iaeger Pony Truss bridge replacement approaches, Litwar bridge replacement approaches, the Merrick Creek Connector Interchange which included storm sewer design, sanitary sewer relocation with grinder station, and waterline relocation, Huntington Industrial Center Access Road, Strawberry Road, Dutch Hollow Road, Rowlesburg Railroad Truss Bridge approaches, Mt. Gay Bridge near Logan, and Honey Creek Bridge near Chimney Corner in Fayette County. Additionally, produced a set of Demolition Contract Plans for a section of WV 10 near Huntington, West Virginia.

Senior Design Technician, Richard B. Russell Lake Road Relocations, Calhoun Falls, Georgia. Mr. Crittenden was involved with the construction inspection for seven road and bridge relocations due to construction of the Richard B Russell Dam and Power House. The project consisted of construction inspection of earth excavation, earth embankments, bridge substructures, concrete pile installation, steel pile installation and bridge superstructure construction.

Education

- Computer Programming Course Study, Murray State University 1976
- Civil Engineering and Applied Mathematics Course Study, Kentucky State University 1987-1989
- Civil Engineering Course Study, Tennessee State University 1989-1992
- Nashville Institute of Technology 1991
- Civil Engineering Course Study, West Virginia Institute of Technology 1992-1994

Stephen E. Caruso

Sanitary/Storm Sewers

Education

- B.S. - Civil Engineering - Point Park University, 2008

Relevant Projects

Civil Design Engineer, Deicing Impacted Stormwater Collection, Conveyance, Storage and Treatment, Allegheny County Airport Authority, Pittsburgh, Pennsylvania. Mr. Caruso provided design and engineering of one 2 mg and one 16 mg capacity retention basins utilizing Bentley's InRoads. The project involved grading associated with both basins including: drainage structures, piping design, sanitary sewer design, diversion structure design, roadway design, channel design and all associated civil/site work. During the construction phase, Mr. Caruso assisted with responses to requests for information, shop drawing review, and construction modification requests.

Civil Designer, White/Harrison Sewer Separation, Cincinnati, Ohio. Mr. Caruso coordinated the civil design for separation of over 3,000 feet of storm sewer separation from a combined sewer system ranging in size from 12 inches to 48 inches in diameter

Civil Design Engineer, New Maintenance Warehouse No. 5, ZBMT-0505, Allegheny County Department of Public Works, Pittsburgh, Pennsylvania. Mr. Caruso provided 8 inch waterline and 12 inch sanitary sewer design on this project for Allegheny County Department of Public Works which involved a new 30,000 square foot warehouse building.

Civil Designer/CADD Coordinator, White Oak Park Combined Sewer Replacement, Allegheny County Department of Public Works, Pittsburgh, Pennsylvania. Mr. Caruso assisted the civil engineers in designing and coordinating the design of the White Oak Park sewer line extension, pump station and connection to local public sewer.

Design Coordinator, Widebody Deicing Facility at Pittsburgh International Airport. Mr. Caruso coordinated the organization, standardization and submission of the 30 percent, 90 percent and 100 percent submittal drawings. He was responsible for dividing work among other CAD operators and ensuring that they followed job standards and completed work on schedule. For this project he used Bentley's InRoads to create numerous plan and profile drawings for the civil and mechanical disciplines. He also was responsible for preparation of as-built drawings.

Design/Drafter, Abram Creek Improvements Project, Cleveland-Hopkins International Airport, Cleveland, Ohio. In addition to general design and drafting work, Mr. Caruso used the civil/site design tools available within Autodesk's Land Development Desktop, a civil design software package that is especially useful on stream restoration/site design projects.

Joseph M. Zanotti, P.E.

Structural

Education

- B.S. – Civil Engineering, Pennsylvania State University, 1980

Registrations

- Professional Structural Engineer: District of Columbia, Illinois (1987), Indiana, Ohio, Pennsylvania, Maryland, Massachusetts, Michigan, New Jersey, New York, and West Virginia

Relevant Projects

Senior Structural Engineer, Water Pollution Control Facility, City of Plattsburgh, New York. The structures at this existing treatment plant have experienced severe structural settlements and cracking caused by improper material used for a 13 ft deep engineered fill under the entire plant. During numerous visits, Mr. Zanotti performed site observations, detailed structural analyses, established settlement monitoring programs, and developed concrete repairs where required.

Lead Structural Engineer, Deicing Impacted Stormwater Collection, Conveyance, Storage and Treatment, Pittsburgh International Airport, Pittsburgh, Pennsylvania. Mr. Zanotti led and performed the structural design of multiple components of the civil/drainage portion of this project. This portion of the project included the design of two large retention basins that captured the entire surface water runoff at the airport. Structures designed included two 50'x30'x32 foot high concrete pump stations that were comprised of inlet channels, grinders, flow channels, pump pits, overflow chambers and attached valve vaults. Two weir wall dams for the reservoirs were also designed: one weir wall was 230'x26' high and the other 170'x20' high. Finally, two stream flow diversion structures, large catch basins, and outfall structures for 54" diameter drain lines were designed.

Senior Structural Engineer, Vinager Building Floor Load Capacity Upgrade, Bay Valley Foods, Pittsburgh, Pennsylvania. Mr. Zanotti performed the structural investigation and design required to convert a floor level of an existing building into warehouse storage space that would support a new 300 psf live load. The 350'x90' concrete floor level of the existing building, built in 1949, was originally used to house tanks and equipment for the production of vinegar. However, the building was nearly abandoned for many years and appeared to be in disrepair. Mr. Zanotti performed a structural condition assessment that included both non-destructive and destructive testing, sampling and laboratory testing of structural and topping concrete. He also performed a detailed finite element analysis of the exiting floors for the new 300 psf live loads and designed a new bonded concrete topping that improved the load carrying capacities of the floors. Finally, concrete repair details were developed for deteriorated zones of structural concrete.

Senior Structural Engineer, Jacks Run Sewer Remediation, Allegheny County Sanitary Authority, Pittsburgh, Pennsylvania. Mr. Zanotti led and performed the complete structural inspection and design of a large, complex, and deep concrete inlet structure and a large concrete outfall structure for a new stormwater sewer that was designed to reroute the overflow of a stream from a combined sewer overflow (CSO) condition. The inlet structure consisted of concrete head and wing walls and an apron that dropped 20 ft and connected into an existing concrete junction box. The outlet structure consisted of head and wing walls and a long apron with energy dissipating blocks.

Joseph D. Crowley, P.E., LEED AP

Electrical

Relevant Projects

Lead Electrical Engineer, Office Building and Clean Room, Albany, New York. Mr. Crowley served as lead electrical engineer for programming, planning, and detail design/construction support services for a 210,000 sq ft office building, including a 15,000 sq ft clean room. Electrical design components included power distribution, IT systems, A/V systems, and a fire alarm system to provide a state-of-the-art facility. Provisions were made for a future solar power distribution system. The lighting system was designed for energy efficiency including motion detectors for all office areas. CDM Smith worked closely with the New York State Energy Research and Development Authority (NYSERDA) to consider an energy efficient design and cost savings with energy rebates provided by NYSERDA. CDM Smith was successful in obtaining approximately $400,000 in rebates for this client.

Project Manager, Wastewater Treatment Plant Expansion, Pittsburgh, Pennsylvania. Mr. Crowley managed the Allegheny County Sanitary Authority's 250-mgd wastewater plant expansion. This included the electrical construction components for the installation of centrifuges, bulk handling systems, lime addition systems, chemical addition systems and pumping systems. During this project, he managed onsite engineers to handle requests for information, reviewed shop drawing submittals, and produced detailed interconnect drawings for the contractor. Mr. Crowley also coordinates between the construction manager and facility owner.

Lead Electrical Engineer, Widebody Deicing Facility, Allegheny County Airport, Pennsylvania. For the Widebody Deicing Pad Design for the Allegheny County Airport Authority in Pittsburgh, Pennsylvania, Mr. Crowley performed power distribution design for deicing booms and a control room, instrumentation for glycol tanks, lighting, lightning protection, and electrical construction cost estimating.

Lead Electrical Engineer/Discipline Coordinator, R&D Facility Design and Construction. Mr. Crowley was the lead electrical engineer for programming, planning, and detail design/construction support services for a 310,000 sq ft R&D facility with a 35,000 sq ft of cleanroom. The design involved redundant utility feeders to an indoor medium voltage double-ended switchgear. A medium voltage distribution system was distributed to low voltage unit substations. The unit substations were segregated between facility distribution and tool distribution. The facility distribution consists of redundant motor control centers and panelboards. The tool distribution consists of tool distribution panels placed throughout the sub-process area for tool hookup. The design includes a complete short circuit analysis and coordination study.

Education

- B.S. – Civil Engineering, Pennsylvania State University, 1980

Registrations/Certifications

- Registered Professional Engineer: Pennsylvania, New York, Indiana, Michigan and Virginia, Maryland, Ohio
- Registered Electrician - City of Pittsburgh
- Leadership in Energy and Environmental Design Accredited Professional

Sam J. Tascarella, P.E.
Mechanical

Relevant Experience

Lead Mechanical Engineer, Gravity Thickener Upgrade, NEORSD, Cleveland, Ohio. Mr. Tascarella is currently designing upgrades for an existing gravity thickener facility to bring ventilation and water distribution system into code compliance by providing six air changes of ventilation per hour to electrically declassify the building and by segregating, isolating, and protecting existing portions of distribution piping to eliminate potential cross contamination. Ventilation systems will utilize air to air heat recovery ventilators. Potable, non-potable, pump seal, and sanitary flush systems will be segregated using isolation valves, double check valve assemblies, and reduced pressure zone valve assemblies to meet local code and utility requirements.

Lead Mechanical Engineer, Main Wastewater Pump Station Upgrades, Lancaster, Pennsylvania. Mr. Tascarella assessed the existing HVAC and plumbing systems serving the dry well/wet well waste water pumping station, and designed renovations for code compliance, including makeup air and exhaust systems to provide six air changes per hour ventilation per NFPA 820, positive air pressure in the electrical room, separation of potable water and service water systems, and dedicated secondary seal water for pumps.

Lead Mechanical Engineer, Bus Maintenance and Storage, Red Rose Transit, Lancaster, Pennsylvania. Mr. Tascarella performed mechanical design and construction follow for a bus transit renovation including HVAC, gas fume monitoring and exhaust, heat recovery, geothermal water source heat pumps, potable water, non-potable water, bus wash water reclaim, sanitary drain, dedicated service drain with oil water separator, and building energy management system. Coordination meetings were conducted with the local authority having jurisdiction to assure code compliance and reduce operating costs.

Lead Mechanical Engineer, Deicing Impacted Stormwater Collection, Conveyance, Storage and Treatment, Allegheny County Airport Authority, Pittsburgh, Pennsylvania. Mr. Tascarella designed mechanical services for a facility intended to address receiving stream water quality concerns associated with deicing/anti-icing activities. The project will capture, convey, store and treat storm water impacted by deicing fluids at the airport. HVAC systems included makeup air, exhaust, energy recovery ventilation, and dilution of chemical vapors. Plumbing systems included restroom fixtures, domestic water heaters, emergency shower/eye wash stations, potable water, service water, and natural gas. Fire protection design included an entrance fire riser and sprinkler zone coverage for Ordinary Hazard Group 2 and Extra Hazard Group 1.

Education

- B.S. – Mechanical Engineering, West Virginia University, 1987
- M.B.A. – Business Administration, West Virginia University, 1986
- B.S. - Business Administration, Duquesne University, 1982

Registration

- Professional Engineer: California (1998), Pennsylvania, Ohio and Maryland

Timothy L. King, RA, LEED AP

Architectural

Education

- B.A. – University of North Carolina, (Charlotte), 1990
- B.S. - Architecture, University of North Carolina, (Charlotte), 1993

Registrations/Certifications

- Registered Architect: Ohio (1996), Maryland, Kentucky, West Virginia and Pennsylvania
- Leadership in Energy and Environmental Design Accredited Professional (LEED AP), 2006

Relevant Projects

Lead Architect, Architectural On-call and Engineering Services, Allegheny County Department of Public Works, Pittsburgh, Pennsylvania. As lead architect, Mr. King managed the design of projects that spanned a 3-year contract for architectural and engineering services. The projects included design services for the construction and renovation of county-owned facilities such as public works warehouses, swimming pools, recreation facilities, and buildings.

Architect-of-Record, Deicing Impacted Stormwater Collection, Conveyance, Storage and Treatment, Pittsburgh International Airport, Pennsylvania. Mr. King was architect-of-record for a new deicing/stormwater treatment plant at the Pittsburgh airport. This unique project will ultimately include capture, conveyance, storage and treatment of spent and fugitive deicing/anti-icing fluids at the airport. CDM Smith is completing preliminary and final design, permitting, construction management and operation and maintenance.

Project Architect, Programming and Design Services. Mr. King served as project architect for initial programming and design services for the CESTM II Complex at University at Albany Institute for Materials. The $125 million project includes a 300 mm wafer prototyping and workforce training facility that will have a 35,000-square foot (sf) ISO Class 3-capable cleanroom, and a 120,000-square foot mixed use incubator office building housing a 15,000-square foot ISO Class 3-capable cleanroom, a 250-seat auditorium and "state-of-the-art" classrooms with virtual capabilities. A 9,000-square foot support building housing central utilities and process support equipment was included as part of the design.

Project Architect, Building Renovation Conceptual Design, Pennsylvania. For the Pennsylvania State University, State College, Pennsylvania, Mr. King served as project architect responsible for developing architectural design elements during the conceptual design for the renovation of the Nanosciences and Technology Building. A space needs study was conducted as part of the conceptual design that included expanding cleanroom space and associated laboratories, centralized gowning and support space. The study also included the proposed addition of a new office suite, lecture hall, café and break areas, as well as upgrading the main entrance.

Project Architect, LEED Gold Environmental Learning Center, City of Los Angeles, California. Mr. King was the project architect and LEED Administrator for this $15,000,000 LEED Gold Project. This project includes a HVAC technology referred to as "Chilled Beams," a green roof, photovoltaic panels, wind turbine, exhibit wetlands, bioswale and urban garden to mention a few sustainable design features. The project will serve as an environmental learning science center for K-12 grade students in the City of LA Public Schools.

James L. Vinson, P.E.

Geotechnical

Education

- M.S. – Civil Engineering, Auburn University, 1997
- B.S. – Civil Engineering, Mississippi State University, 1995

Registrations/Certifications

- Professional Engineer: North Carolina (2001), Tennessee, Kentucky, Mississippi, Texas, Virginia, and West Virginia
- OSHA National #36-003251930

Relevant Projects

Project Manager, Farm at Willow Creek Subdivision, Farragut, Tennessee. Mr. Vinson performed a thorough review of the town's file on past design, construction and correspondence related to the subdivision's failing stormwater drainage system. Consultation was given regarding adequacy of past investigations and inspections as well as suggestions regarding future inspections and repairs. Concern has grown regarding the adequacy of the system's current condition after multiple failures, including collapse of soils into underground cavities apparently caused by piping erosion of backfill soils. Mr. Vinson also provided oversight during replacement of a significant portion of this stormwater drainage system.

Geotechnical Project Manager, Slide Repair at Papermill Interchange, Knoxville, Tennessee. After the slide failure was reported, the Tennessee Department of Transportation asked Mr. Vinson to prepare an emergency repair plan based on initial site visit observations. Mr. Vinson subsequently directed the geotechnical engineering investigation of the 500 ft long slope failure which occurred on a nearly 100' high soil slope behind a mechanically stabilized earth wall near Papermill Road and I-40/I-75. The slide occurred in a critical area above a retaining wall (maximum height of 25') and below a 30-inch water main and multi-story office building near the slope's crest. Observations and analyses were performed to estimate the shape and soil properties near the failure surface. After discussion with TDOT, Mr. Vinson prepared a final repair plan, which included progressive undercutting sections of the slope to below the failure surface and backfilling with graded solid rock. He also provided on-site construction assistance and oversight of inclinometer monitoring during and after the slide repair.

Project Manager, Sinkhole at Dry Gap Shopping Center, Knox County, Tennessee. Mr. Vinson developed a subsurface exploration program to characterize the subsurface conditions at/near a sinkhole that was observed in a retail parking lot. He then reported the findings of the exploration and submitted the permit application to Tennessee Department of Environmental Quality that would allow remediation to begin. He also coordinated selection of a contractor and provided oversight during the sinkhole repair, which included overexcavation to rock and backfilling with processed rock before topping with geotextile fabric, soil and pavement.

Geotechnical Task Manager, New Utilities at Eastbridge Industrial Park, Knox County, Tennessee. Mr. Vinson provided oversight in the performance of test pits at regular intervals along 1,800 feet of proposed utility easement as well as at a proposed pump station. He also prepared a report of the subsurface findings, including depth to rock and characterization of encountered materials.

Geotechnical Task Manager, KUB Sewer Relocation, Knoxville, Tennessee. Mr. Vinson planned and oversaw the subsurface exploration along the shoulder of I-40 in downtown Knoxville to document conditions that may affect construction of a relocated sewer. He also prepared a report that documented the encountered subsurface conditions and their possible impact to the utility construction.

Gregory D. McDowell
Construction Manager

Relevant Projects

Design Manager/ Project Engineer/Construction Manager, Deicing Impacted Stormwater Collection, Conveyance, Storage and Treatment, Allegheny County, Pennsylvania. In order to address receiving stream water quality concerns associated with deicing/anti-icing activities at the Pittsburgh International Airport, the Allegheny County Airport Authority is building a deicing/stormwater treatment facility. Although various airports are implementing measures to control, collect, or treat storm water runoff from deicing facilities, very few are designing/constructing on-site treatment facilities. Thus, a highly innovative approach is required in order to provide the client with the most efficient and cost-effective solution in accordance with local, state and federal acceptance. The overall Project is being constructed in three phases identified as Phase 2A, 2B and 2C. The work of each of these phases will be released in separate bid packages. Construction of Phase 2A was initiated in September 2007. Phase 2B construction was completed in October 2011. Phase 2C design is currently scheduled which will include the treatment plant, interconnections of force mains and effluent discharge piping, utility interconnections and process automation. Construction of Phase 2C will be initiated and is scheduled over a 3-year period. Total construction cost is currently estimated at $35 million.

Mr. McDowell was the design manager for Phases 2A and 2B which also encompassed specific civil and process engineering design. Moreover, he facilitated cross-disciplinary coordination and review. This partnership of disciplines enabled reduced costs and accelerated project completion while delivering the highest level of quality assurance standards. Mr. McDowell served as project engineer/construction manager during the Phase 2A and 2B construction projects and directly participated in all aspects of construction management, which included monitoring the on-site performance of the potentially responsible parties, ensuring that the contract work was proceeding in compliance with both the contract documents as well as the progress schedules. His field responsibilities included day-to-day management and direction of contractors, coordinating design changes and clarifications with the design engineers, and providing experience and judgment to effectively manage scope, schedule and budget.

Project Manager, Engineering Program Management Office (EPM), ALCOSAN Wastewater Treatment Plant, Pittsburgh, Pennsylvania. Mr. McDowell provided project management services for the Allegheny County Sanitary Authority (ALCOSAN) wastewater treatment plant, capital improvement program. ALCOSAN operates a sewage collection, conveyance and 200-mgd treatment system serving the City of Pittsburgh and 80 other communities with a drainage area of 205 square miles. Mr. McDowell's responsibilities include representing the EPM at construction progress meetings, and operational and maintenance (O&M) meetings, shop drawing and O&M manual review, responding to contractor requests for information (RFI's), preparing proposed change orders (PCOs), detailed cost estimating, managing start-up activities including equipment acceptance and performance testing, and acting as a liaison between the client and construction manager.

Education

- M.S. – Civil Engineering, Construction Management University of Pittsburgh, 2001
- B.S. - Civil Engineering, Point Park University, 1994

Certifications/Training

- 40 hour OSHA Hazardous Waste Operations and Emergency Response
- 8 hours Annual OSHA HAZWOPER Refresher
- Confined Space Entry and Rescue
- DEP Erosion and Sedimentation Control
- Project Management Certification

James Girson
Resident Engineer

Relevant Projects

Project Representative, New Sewer System for Saxonburg Area Authority. As resident project representative, Mr. Girson was the lead for multiple contracts on a new sewer system for Saxonburg Area Authority. These projects included installation of approximately 65 miles of pipe, five pump stations, and a treatment plant. Responsibilities included contractor oversight, cut sheet review, conducting work progress meetings, preparing monthly pay estimates, and public relations.

Resident Supervisor, Various Locations. As resident supervisor, Mr. Girson was responsible for all field activities of construction projects, ensuring that projects were constructed in accordance with contracts and documents. Mr. Girson verified materials and procedures of construction, communicated with officials and the general public informing them of the work and any issues that needed to be addressed throughout the project. Mr. Girson solved problems that arose during construction. He ensured accuracy of field measurements and calculation of quantities and prepared daily reports and monthly pay estimates. Many of these projects involved extensive water and sewer line installations.

Resident Project Representative, Fort Duquesne Bridge Rehabilitation Project, Pittsburgh, Pennsylvania. As resident project representative, Mr. Girson worked on the Fort Duquesne Bridge rehabilitation project in Pittsburgh, PA. Project included removal and replacement of bridge deck overlays with rapid set latex concrete, expansion dam replacements, and various minor structural repairs. Prior to this, Mr. Girson worked on a City of Pittsburgh Urban Redevelopment Authority project that included relocation of approximately 2,000 feet of concrete roadway and sidewalks in a plan of existing and new commercial buildings. The project included waterline and sewer installations, traffic signals, street lighting, and private electrical circuits. Duties included oversight of all field activities and communication with client, design engineer, city officials and the public to address issues regarding the project. Mr. Girson coordinated utility relocations including two gas companies, five communication companies, and Duquesne Light as well as coordination with two adjacent projects. Other duties included documentation of work performed, tabulation of pay quantities, solving problems that arose during construction, and facilitating field changes as necessary.

Education

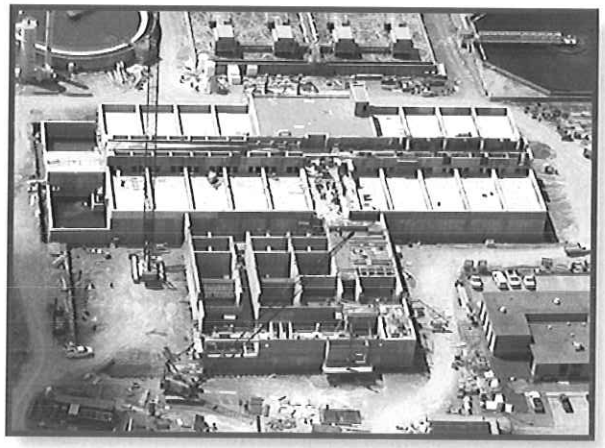
- A.S.. - Mechanical Drafting/ Design

Certifications/Training

- NICET- Level 4 in Transportation / Highway Construction
- PennDOT Certified Concrete Field Technician
- NASSCO Pipeline Assessment Certification
- Required Confined Space - Entrant, Attendant, Supervisor
- OSHA 10 Hr. Training Construction Safety & Health

Section 3
Construction Management

CDM Smith Offers Comprehensive Services During Construction



Our design and construction experience encompasses a wide variety of projects from completely new construction to rehabilitation, expansion, and upgrade of existing facilities.

CDM Smith offers a full range of construction services, including construction management, resident engineering and inspection, and has provided engineering services during construction for virtually every one of our design projects. Engineering services have been provided during construction for remedial and environmental facilities with construction costs in excess of $2.0 billion. We make use of our skilled/experienced construction services staff to perform constructability reviews of construction documents to result in a higher quality, easily biddable and constructible project. CDM Smith is highly experienced in the management of multi-prime construction contracts and has successfully applied this experience to minimize conflicts.

In addition to resident engineering, our construction management services includes all bid phase services; conducting pre-construction conferences and progress meetings; developing and administering construction-document control systems; providing design clarifications; administration of change orders, claims, and time extensions; shop drawing review, invoice review, and administration; materials testing coordination; and start-up assistance and implementation. We are also experienced with the administration of project labor agreements.

Corporate Quality Management Program

Quality has been the cornerstone of CDM Smith's reputation for half a century. The firm now follows the principles of Total Quality Management, or TQM. Our philosophy is that successful quality management must pervade every aspect of our organization and be embraced on every project. From the smallest study or environmental assessment, to the most complex facility design and construction, quality management is fully integrated into every CDM Smith project task. Our quality management procedures include specific reporting requirements that assure the client that appropriate action is taken at the proper time. All CDM Smith personnel perform work in accordance with our quality manual for construction services projects entitled QMP-2, Quality Management Process - Manual No. 2 for Engineering Services during Construction. The purpose of this manual is to provide procedures and guidelines to be followed in the execution of all CDM Smith construction services projects.

- To provide onsite engineering representatives to address contractor questions and refer them to the appropriate parties, as necessary.

Schedule Management

To manage and maintain the project schedule, CDM Smith applies the following methods:

- At the project kickoff meeting, CDM Smith leads a frank discussion of the project goals and objectives and will assist the project team in defining clear and achievable project milestones.
- Progress toward meeting project milestones is continuously monitored over the course of the project and critical issues of concern that could impact the schedule or achieving milestones will be presented to St. Marys Correctional Center as soon as they are discovered.
- CDM Smith maintains close and frequent communications with our clients so there are continued opportunities to provide feedback on project developments and potential corrective actions required to maintain the project schedule.
- CDM Smith keeps our experienced project team members involved throughout execution of the project. This will provide clear direction and efficient use of our project resources to maintain consistent progress toward meeting project milestones.

Relevant Project Experience

CDM Smith has a wealth of project construction management experience throughout the U.S., and worldwide. Detailed project descriptions representing our team's full-service capabilities are provided on the following pages. These projects confirm CDM Smith's track record and strong credentials and level of performance in support of major construction management services for public entities.

Construction Services for Engineering Program Management (PM) of Wastewater Treatment Capital Improvement Plan and CSO Plan—Allegheny County Sanitary Authority (ALCOSAN): Pittsburgh, PA

ALCOSAN operates a wastewater conveyance and 250-mgd treatment system serving the City of Pittsburgh and 82 other communities. CDM Smith serves as the program manager for treatment plant improvements as well as the CSO program. The treatment plan PM services included preliminary design, oversight of final design, and services during construction associated with an expansion of plant capacity from 200 to 250 mgd, odor control systems, and extensive solids handling improvements. CDM Smith's construction management services included:

- Constructability analyses and development of planning for maintenance of plant operations during construction.
- Development of initial and review of final engineers' construction cost estimates and participation in VE sessions.
- Assistance with evaluation and award of engineers' proposals and contractors' bids.
- Engineering services during construction including: change order review/development; request for information RFI responses; conduct/attend project meetings; review/comment on project schedules, budgets and pay requests; maintenance of records; preparation of status reports.
- Training of ALCOSAN O&M staff, development of O&M manuals and assistance with project start-up.

Wastewater Treatment Facility Expansion and Upgrade, Middletown, NY

CDM Smith provided design, permitting, and construction management services and prepared funding applications for the facility. The project includes a new septage receiving station, new influent bar screens, grit collection equipment and blower replacement, upgrading existing primary settling tanks, a new return activated sludge/waste activated sludge (RAS/WAS) pump station, a new low-pressure, flow-paced UV light disinfection system, and a new belt filter press. In addition, a four-train aeration tank with fine bubble diffused aeration and two final settling tanks were constructed. Additional improvements included piping modifications to allow for additional digester capacity, an odor control system, site work and yard piping, building roof replacements, heating and ventilating upgrades, plumbing and fire protection, a new supervisory control and data acquisition (SCADA) system, and a new emergency generator.

Overall the project demonstrates both innovation and attention to detail to successfully undertake work in and around an operating wastewater treatment facility. Early in the design process, CDM Smith developed adaptive uses for existing equipment that eliminated the need for constructing new buildings that positively resulted in reduced construction costs and schedule.

CDM Smith also optimized the hydraulic grade line of the expanded facility which increased the facility's flow capacity by more than 40 percent without adding new energy intensive pumping facilities. Moreover, the designers carefully incorporated "green" design elements as well as technically developed a sequence of construction specifications to ensure that interim effluent permit limits would be met and that construction could clearly be completed by the designated NYSDEC consent order milestone dates.

The incorporated "green" design elements also supported the city's long-term sustainability initiatives and the city subsequently received Green Project Reserve (GPR) funding for such elements from the New York State Environmental Facilities Corporation and the New York State Energy Research Development Authority. A few of the elements included: 1) A fully automated fine-bubble diffused aeration system installed within three 25-ft deep aeration tanks (optimize the aeration system's energy efficiency); 2) Upgrading the plant's first-generation UV light disinfection system with two new cutting-edge high efficiency flow-paced units that also use the existing UV system's building infrastructure to reduce cost; and 3) The installation of variable frequency drives and premium efficiency motors on equipment throughout the facility.

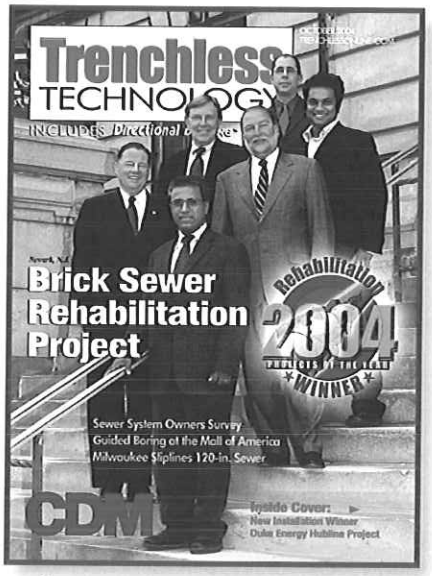
The project's design and construction were completed on time in January 2011 and budget, the new wastewater treatment facility is more reliable and easier to operate, consumes over 40 percent less power, and anticipates future community growth, while producing a cleaner discharge into the Walkill River for future generations. In addition, change orders on the project were below 5% of the total construction cost.

Brightwater Wastewater Treatment Plant Construction Management, King County, WA

Brightwater Wastewater Treatment Plant is a critical, early part of King County's Washington, Regional Wastewater Services Plan (RWSP) to be completed by 2030. Construction of this state-of-the-art facility was completed in 2011. The county has committed to implement the first U.S. membrane bioreactor technology (MBR) applied to a large wastewater treatment plant to ensure long-term process quality and operating efficiency. As part of the RSWP, the county has committed to operate the plant with no odor at the fence line, provide significant mitigation enhancements, and reduce attendant staffing.

services. We have provided resident project representatives for all emergency repair contracts and all biddable repair contracts.

The resident project representative staff is responsible for the day-to-day observation and monitoring of construction activity. CDM Smith's field representatives are responsible for observing whether the contractor's work is substantially in conformance with the plans and specifications. CDM Smith is also be responsible for on-site coordination between the field staff, City staff, CDM Smith's design team, and County, State, and Federal agencies as necessary.



"Project of the Year: Rehabilitation; Newark (N.J.) 108-in. CIPP" *(cover story). Trenchless Technology. October 2004*

In the course of this project, CDM Smith has performed the following functions:

- Serve as the liaison on a day-to-day basis with the contractor concerning the contractor's performance under the Contract Documents;
- Observe and approve or reject construction materials and equipment entering the project site based on compliance with the contract documents. Where appropriate, he will retain and work with an independent testing laboratory to conduct tests on materials and equipment;
- Report to the City and Design Team whenever it is believed that work is unsatisfactory, faulty, damaged, does not conform to the Contract Documents, or does not meet the requirements of inspections, tests or approvals required to be made; and advise the City when it is believed work should be corrected, rejected, uncovered for observation, or require special tests or inspection;
- Accompany City representatives, and visiting inspectors representing other agencies having jurisdiction over the project, record and report the outcome of these inspections, and log the date, time, name, address and telephone number of all permitted visitors to the site; and
- Observe, record, and report the results of test procedures.
- Coordinate with the City and the Design Team when they are at the site and when they are in their offices.

In addition to the principal duties described above in the daily inspection of the work, CDM Smith's scope of work included:

- Monitoring and updating schedules, meetings and reporting, record-keeping, shop drawings and sample records, contract modifications, contractor claims, contractor payments, and direction on the correction of defective work.
- Reviewing shop drawings, samples and other submissions made by the contractors during the course of the project.
- Preparing and submitting interpretations and clarifications as may be required for the contract documents prepared by CDM Smith.
- Preparing, monitoring and updating the construction schedule, allowing for use of the schedule as a tool to evaluate time and cost.

systems. It also included rehabilitating 40 manholes on the main carrier sewer in the Naugatuck River to prevent them from taking in river water.

The Cured in Place Lining Contract for the sanitary sewer system included the rehabilitation of 32,000 lf of 8-inch to 30-inch diameter sewers, sealing of 1,900 vertical feet of sanitary manholes, manhole frame and cover location and replacement and sanitary sewer point repairs. CDM Smith provided construction oversight of the work to meet the consent order milestone date.

For all the components of the program, CDM Smith was the construction manager. CDM Smith worked closely with the City, each construction contract contractor and the Connecticut DEP to maintain a "partnering" relationship between all parties. CDM Smith's responsibilities as construction manager included resident engineering and construction inspection, contract administration, change order and claim management, scheduling, maintenance of plant operations, training of operations personnel and start-up services. The sites also had requirements for hazardous waste removal and disposal. CDM Smith was responsible for ensuring the Contractors' proper removal, testing and disposal of contaminated soils, lead paint and asbestos from the site. Work also included project closeout, obtaining necessary permits and permit compliance, as-built drawings and coordinating with the local utilities for service and construction coordination. CDM Smith performed factory witness testing of the centrifugal pumping systems, emergency generators, diffused air system and instrumentation system.