

Statement of Qualifications

Engineer of Record Professional Services



Prepared for the
Town of Belleair

May 31, 2018

Project Manager: Thomas Nogaj, PhD, PE
380 Park Place Boulevard, Suite 300
Clearwater, FL 33759
Phone: 727.531.3505



May 31, 2018

ATTN: Procurement Officer
Town of Belleair
901 Ponce de Leon Blvd
Belleair, FL 33756

Cardno, Inc.
380 Park Place Boulevard
Suite 300
Clearwater, Florida 33759
Phone: 727.531.3505

RE: Request for Qualifications For Engineer of Record Professional Services

Dear Selection Committee:

Cardno, Inc. appreciates the opportunity to present our proposal to the Town of Belleair for this Professional Services contract. We have worked with the Town of Belleair and in the surrounding area for many years. We have extensive experience and a vested interest in serving the Town of Belleair and this community, since it is our community as well.

Founded in 1945, Cardno is one of the largest full-service civil and environmental firms in the Southeast United States. We offer a broad range of professional services including those listed in the scope of services in this Request for Qualifications (RFQ). Our professionals have extensive qualifications and a significant history providing engineering services to similar clients in the Tampa Bay and Gulf Coast area.

Cardno's Clearwater office of more than 100 staff offers a broad range of professional services including:

- > Transportation Engineering
- > Roadway and Bridge Design
- > Structural Engineering Services
- > Environmental Services
- > GIS/Asset Management
- > Redevelopment Consulting
- > Brownfields Redevelopment
- > Grants Administration
- > Water Resources
- > Urban and Land Planning
- > Stormwater Management
- > Construction Inspection and Administration
- > Water/Wastewater Facilities Design
- > Utility Coordination/Relocation Design
- > Survey and Mapping/Subsurface Utility Engineering (SUE)
- > Planning and Site Design

Our vast experience in providing services to similar municipalities affords us an unparalleled understanding of the unique challenges facing Florida's coastal communities, including dramatic seasonal population changes, impacts from storm events, and uncertainty with respect to climate change. We understand these challenges, and stand ready to provide the Town with prompt, courteous, responsive service to perform the required work.

We have assembled a capable and uniquely qualified team to serve the Town under this professional services contract. The team will be led by our Project Manager, Thomas Nogaj, PhD, PE. He will be responsible for executing the contract and providing senior management overview as required. Dr. Nogaj has provided engineering services throughout the State of Florida as well as the United States. Douglas Stoker, PE will serve as Principal-in-Charge on this contract. Doug is a registered Florida Professional Engineer and has a long history of providing responsive service to municipal clients under similar contracts, delivering numerous successful projects for clients along Florida's west coast over his 26 years of experience.

The expertise of our team is derived from experience in rehabilitation, design, implementation of construction documents, and contract administration. We are creative and look for innovative ideas to contain costs and maintain the Town's schedule, which results in a satisfied client.



Cardno ranks 14th on Engineering News-Record's list of the Southeast's Top Design Firms, and 44th on the national Top 500 list.

What this means to Belleair:

- > Successful completion of any assignment, large or small
- > Responsiveness throughout the project duration, from assignment through construction
- > Cost-effective design
- > No learning curve—we can begin immediately

Why Select Cardno?

We are local. Cardno has done a lot of work in the area for many years, both in and around Belleair. Cardno will provide services for this contract from our office in Clearwater, so we can respond quickly to your needs.

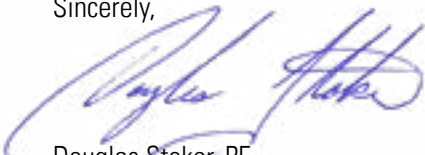
- > **Local Government Contracts.** Cardno has a long history of successfully completing projects for a wide range of local governmental agencies. We have continuously held general engineering contracts with Florida municipalities for more than 30 years.
- > **Qualifications of the Project Team:** We specialize in providing turnkey engineering services to municipal clients under continuing services contracts, and have successfully provided such services to many small, coastal communities like Belleair.
- > **Qualifications of the Subconsultants:** We selected our proposed team of subconsultants based on the unique specialty services they offer, and their ability to provide these services to address the Town's needs under this contract. We are confident they will add value to successful completion of the Town's projects.

We are experienced. We work on these types of projects daily and clients rely on us as their go-to design firm for timely, thorough, and cost-conscious engineering services. The list below is why Cardno is your best choice for this contract.

- > **Asking the right questions.** Our experienced staff knows how to gain the information necessary to develop a comprehensive scope that appropriately captures all necessary services to successfully complete your project.
- > **Providing single-point responsibility.** We provide many services completely in-house, resulting in increased efficiency, integration of services, single-point responsibility, and cost savings.
- > **Identify the appropriate scope the first time.** Our experienced staff develops a comprehensive scope of work the first time, identifying all necessary services. This avoids surprises from change orders or unidentified obstacles during construction. This goes hand-in-hand with our extensive experience with these type of projects.
- > **We understand how to deliver quality, detailed documents in a short amount of time.** Since we perform this type of work on a regular basis, we have a streamlined design process that can be tailored to the Town's needs.
- > **Fast, cost-effective solutions.** Through our vast experience, we know how to implement fast, cost-effective solutions. We will develop recommendations in a context-sensitive manner.
- > **Robust quality assurance program.** Cardno has one of the best claims records in the industry, which is a testament to the quality of our work and proof of the efficacy of our quality assurance program.
- > **Repeat clients.** Over 85% of Cardno's work is for repeat clients who have evaluated Cardno's value compared to other engineering firms and continue to return to Cardno for the premier services we provide.

Our reputation is built on providing creative, aesthetic, functional and economical solutions. We work closely with our clients to conjure context-sensitive solutions that fit within their budget. We are grateful for this opportunity to serve the Town of Belleair. At your request, we can provide any additional information to assist with your selection.

Sincerely,



Douglas Stoker, PE
Principal-in-Charge
doug.stoker@cardno.com

PRIOR MUNICIPAL EXPERIENCE

Perhaps the best examples of sustained client relationships are our continuing services for Florida communities, including the Town of Belleair, that date back to the 1980s.

Qualifications for Engineer of Record:
Professional Engineering Services

QUALIFICATION
QUESTIONNAIRE



QUALIFICATION QUESTIONNAIRE

1. Firm Name: Cardno, Inc.

2. Established (year and state):

Founded in 1945, Cardno is one of the largest full-service civil and environmental firms in the United States. Cardno, Inc. is a Delaware corporation, incorporated on June 10, 2011. Cardno, Inc. is 100% owned by Cardno USA, Inc., a Delaware corporation, incorporated on April 13, 2007.

3. Former Firm Name(s), if any, and years in business.

Locally, the list below are the other names we have operated under:

- > 2/1/1984 – Tampa Bay Engineering opens for business
- > 8/15/1996 – Tampa Bay Engineering becomes TBE Group, Inc.
- > 9/15/2008 – TBE Group, Inc. acquired by Cardno, known as Cardno TBE, Inc.
- > 7/1/2014 – TBE Group, Inc. becomes Cardno, Inc.

4. Office/Business Address and Telephone Number:

Cardno, Inc.
380 Park Place Boulevard
Suite 300
Clearwater, Florida 33759
Phone: 727.531.3505

5. Branch Offices Business Address and Telephone Numbers:

Local Expertise, Around the World

Our offices are strategically located to make it easy for our team to get to your facilities or project sites, for increased efficiency. We have a deep understanding of both national and local environmental, regulatory, financial, and social conditions. Our global capability and local expertise combine to help you reduce risks, resolve challenges, improve performance, and increase resilience.

Cardno has a unique combination of general and specialized engineering experience. Our reputation was built on providing our clients with responsive, economical solutions under continuing services contracts, and have been doing so in Florida since 1984.

Our local continuing services clients are located throughout the state. We have held similar contracts for local governments over the past 30 years and have a keen understanding of the challenges that are unique to many coastal communities, including significant dramatic seasonal population changes, weather events of increasing severity overwhelming storm and sanitary systems, aging infrastructure, limited funds, uncertainty with respect to climate change, and more stringent regulatory requirements.

Cardno has built a reputation for quality and cost-effective services working for public and private sector clients. Cardno has more than 300 staff in 10 offices throughout Florida, providing the company a strong state-wide focus complementing specialist teams in major areas throughout the state.

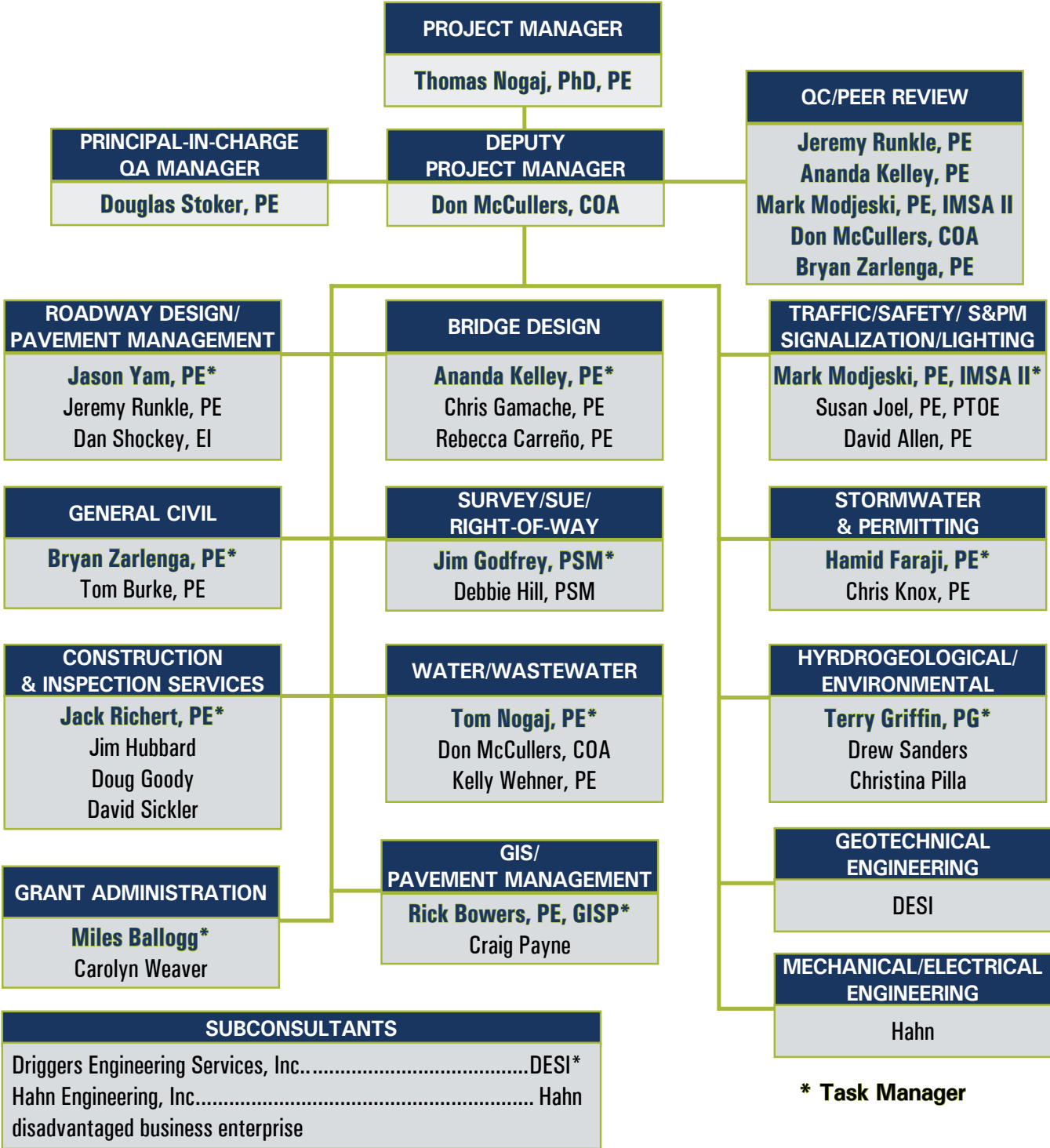
Office Name	Address		Phone
Clearwater	380 Park Place Blvd., Suite 300	Clearwater, FL 33759	727.531.3505
Tampa - Riverview	3905 Crescent Park Drive	Riverview, FL 33578	813.664.4500
Brooksville	20215 Cortez Blvd.	Brooksville, FL 34601	352.754.4551
Tallahassee	2420 Lakeshore Drive, Suite 100	Tallahassee, FL 32312	850.385.8232
Ft. Lauderdale	3427 N.W. 55th Street	Ft. Lauderdale, FL 33309	954.938.9389
Altamonte Springs	402 Northlake Blvd, Suite 1004	Altamonte Springs, FL 32701	407.629.7144
Lake City	159 SW Spencer Court, Suite 106	Lake City, FL 32024	386.755.2626
Jacksonville	4600 Touchton Rd. E, Building 100 Suite 120	Jacksonville, FL 32246	904.363.3727
Tampa (SUE/Survey)	4803 George Rd, President's Plaza, Suite 350	Tampa, FL 33634	727.431.1580
Fort Myers	5670 Zip Drive	Fort Myers, FL 33905	239.277.0722

6. Associates and Principals: Name-Title-Specialties (Attach Resumes)

Below is our Organizational Chart that depicts our proposed primary staff associates for each service area/discipline. Resumes for our key staff are included at the end of this Questionnaire.



Organizational Chart
Engineer of Record – Professional Services



*** Task Manager**

7. Total Personnel of Firm:

Cardno, Inc. personnel total	1,925
a. Professional:	469
b. Non-Professional:	886
c. Other:	570

8. Key personnel to be involved in the provision of these services.

All of our proposed key staff have extensive expertise in their designated roles, but also have a broad range of experience that will serve as additional support for any services needed. We will draw upon the broad resources in our Clearwater hub location, as well as expertise from other offices throughout Florida as needed. Cardno is committing the staff presented below. They will be the staff you will work with on your projects.



Doug Stoker, PE | Principal-in-Charge, Quality Assurance Manager

doug.stoker@cardno.com

Mr. Stoker has a long history of bridge and structures design and repair, as well as project management on conventional and design-build projects. Doug is well-versed in the application of Cardno's quality assurance/quality control program, and will ensure the program is implemented appropriately throughout the project. In addition to transportation structures, he has designed and constructed boardwalks, docks, seawalls, and other marine structures throughout his 26-year career.



Thomas Nogaj, PhD, PE | Project Manager

thomas.nogaj@cardno.com

Dr. Nogaj will serve as Project Manager on this continuing contract. In this role, he will be responsible for executing the contract and providing program management as required. Tom has more than 30 years of experience in facility planning of water supply and wastewater systems, advanced wastewater treatment process modeling, developing computerized models, water treatment facilities, construction administration, and implementing IT projects including computerized maintenance management systems and custom software development. He has provided utility engineering services throughout the State of Florida as well as the United States.



Don McCullers, COA | Deputy Project Manager

don.mccullers@cardno.com

Mr. McCullers is a licensed Class A wastewater treatment plant operator with 42 years of experience in water and wastewater systems. Don is a certified trainer under NASSCO's Pipeline Assessment and Certification Program (PACP) and is an expert in sanitary sewer system evaluations and rehabilitation. Don has expertise in the analysis of existing utility systems and the preparation of plans and specifications for the construction of new and rehabilitated water and wastewater treatment facilities, pump stations, water distribution systems, interceptor sewer systems, effluent disposal facilities, and reclaimed water systems.



Jason Yam, PE | Roadway Engineering/Task Manager

jason.yam@cardno.com

Mr. Yam leads Cardno's Southeast Roadway group. He has considerable experience in project management for local government roadway design projects. Most of his 19-year career has been spent serving as project engineer or project manager for roadway projects ranging from small rural to large interstate systems. He is extremely knowledgeable in the preparation of roadway plans, signing and pavement marking plans and maintenance of traffic plans. Mr. Yam is very experienced with FDOT and Florida Greenbook standards and requirements.



Ananda Kelley, PE | Structures Engineering/Task Manager

ananda.kelley@cardno.com

Ms. Kelley has 16 years of wide-ranging experience in structural engineering, including bridge repair and rehabilitation. Her vast experience includes deck repairs, deck replacements, and bridge widenings. Ananda also has extensive experience with design of new bridges as well as repair and rehabilitation plans. In her consultant experience, Ms. Kelley has provided bridge repair services for numerous clients, including local governments and FDOT. Most recently, Ms. Kelley served as Project Manager and Engineer of Record for an Emergency Repair of Collier County's Stan Gober Memorial Bridge. The riprap shore protection under the bridge washed out during hurricane Irma and the Cardno Team provided the County with repair plans.



Mark Modjeski, PE, IMSA II | Traffic Traffic/Safety/ S&P Signalization/Lighting/Task Manager

mark.modjeski@cardno.com

Mr. Modjeski oversees Cardno's transportation engineering, traffic signalization, and traffic operation design efforts. He has extensive experience in the areas of transportation engineering, traffic signalization, structural design of signal supports, construction planning and traffic signal design including the structural design of mast arms and strain poles. Mr. Modjeski has practical traffic equipment installation experience and has completely designed or provided upgrade designs for more than 400 signalized intersections within Florida.



Bryan Zarlenga, PE | General Civil/Site/Planning Task/Manager

bryan.zarlenga@cardno.com

Mr. Zarlenga serves as Practice Group Leader for the Site Development group with more than 26 years of experience. He has specific experience in all aspects of the development process including pre-design, construction document preparation, permit expediting, constructability reviews, and project management for clients in the federal, state, local, and private sectors. He manages a team of project managers, engineers, landscape architects, planners, and designers. His project management and leadership skills have enabled him to deliver projects on schedule and within budget, always focusing on sustainable solutions.



James Godfrey, PSM | Survey/SUE/Right-of-Way/Task Manager

jim.godfrey@cardno.com

Mr. Godfrey has significant experience as a survey consultant, including surveying and mapping for interstate projects, control surveys, design surveys, and expert witness testimony. Mr. Godfrey was involved in preparing and implementing the FDOT staff-hour survey form currently in use. During Mr. Godfrey's 36 years of survey experience, he has managed numerous continuing and miscellaneous contracts for municipalities across the state. Mr. Godfrey has a reputation of understanding clients' needs and furnishing required deliverables in a timely manner.



Hamid Faraji, PE | Stormwater & Permitting/Task Manager

hamid.faraji@cardno.com

Mr. Faraji is experienced in highway design and considered an expert in drainage facility design for transportation projects. His drainage experience includes preparation and design of location hydraulic reports, pond siting reports, bridge hydraulic reports, scour analysis, stormwater collection system design, hydrology and hydraulic analysis, computer modeling, and cross drains design. He has extensive experience acquiring permits from the various water management districts and other federal and local agencies throughout Florida. Also, Mr. Faraji has managed and has been the engineer of record on several roadway/highway design projects.



Jack Richert, PE | Construction & Inspection/Task Manager

jack.richert@cardno.com

Mr. Richert has over 10 years of experience in the design and construction engineering inspection (CEI) fields. He has served as a Highway Designer on Design-Build projects and as an Inspector, Senior Inspector, Assistant Project Administrator and Project Engineer on numerous CEI contracts. He offers diversified experience in the field and management of day to-day CEI operations.



Terry Griffin, PG, CGWP | Hydrogeologist

terry.griffin@cardno.com

Mr. Griffin’s responsibilities include the management of complex hydrogeologic and groundwater contamination assessment investigations, and remediation activities at numerous locations throughout the Southeastern U.S. He has conducted extensive research of chlorinated solvent assessment and remediation techniques, particularly DNAPL assessment techniques. His duties include management of complete site characterization efforts, remediation strategy development and system design, data evaluation and management, and optimization of ongoing remediation activities. He has extensive knowledge of RCRA and state programs.



Miles Ballogg | Grant Administration/Task Leader

miles.ballogg@cardno.com

Mr. Ballogg serves as Brownfields Practice Leader and Economic Development Director for Cardno. He assists public and private sector clients with land redevelopment programming, assessment, and remediation, specifically in environmentally-blighted areas. Miles has been involved in the implementation of both federal and state Brownfields programs for over 20 years including during their inception. He is a strong advocate for environmental justice and has been recognized as the National Leader of the “Healthfields Movement” by utilizing Brownfields and other leverage resources to improve access to health care for underserved communities.



Rick Bowers, PE, GISP | GIS Task Manager

rick.bowers@cardno.com

Mr. Bowers is the Director of GIS/Asset Management Services. He provides management services, including WAM implementations. He has extensive national and international experience for such engineering applications as: floodplain and watershed evaluations, sanitary sewers system evaluations, potable water master plans, rate studies, stormwater master drainage plans, and roadway right-of-way corridor preservation studies.

9. What outside Associates and Consultants does your firm normally work with?

Cardno has established ongoing working relationships with many firms who specialize in the various service areas that Cardno has or uses to supplement their workforce. These areas span the entire spectrum of engineering, planning and surveying. This arrangement has benefitted the Cardno Team involved, while allowing our mutual clients the best possible service.

Throughout Cardno’s long history in the area, we have had the opportunity to work with some outstanding, highly qualified firms. Below is a partial list of some of those associates and subconsultants we often work with in the community:

Firm Name and Address	Services	Last Joint Project
Arehna Engineering, Inc. 5012 W Lemon Street Tampa, FL 33609	Geotechnical engineering	City of St. Petersburg, 40th Avenue Northeast Bridge Replacement (current project)
Quest Corporation of America, Inc. 17220 Camelot Court Land O’ Lakes, FL 34638	Public/Community involvement	Pinellas County, General Engineering Consultant contract (ongoing)

Firm Name and Address	Services	Last Joint Project
Kelly Brothers, Inc. 15775 Pine Ridge Road Fort Myers, FL 33908	Marine construction (contractor)	City of St. Petersburg, 40th Avenue Northeast Bridge Replacement (current project)
Transgraphics Consulting, LLC 3115 43rd Ave E Bradenton, FL 34208	Graphics, renderings, video	City of St. Petersburg, 40th Avenue Northeast Bridge Replacement (current project)
Kisinger Campo & Associates, Corp. 201 North Franklin Street, Suite 400 Tampa, FL 33602	Ecological/environmental services	City of Dunedin General Engineering Consultant contract (ongoing)
Tierra, Inc. 7351 Temple Terrace Highway Tampa, FL 33637-5705	Geotechnical engineering	SR 574 (FDOT District 7)
Cumbey & Fair, Inc. 2463 Enterprise Road Clearwater, FL 33763	Engineering design support	SR 60 (FDOT District 7)
Pennoni Associates, Inc. 2555 Nursery Rd Ste 101 Clearwater, FL 33764	Engineering design support	Clearwater/Largo Road (City of Largo)

10. Is it anticipated that your firm will subcontract any architectural, engineering, landscape design/architecture, or other services when working on specific projects? If so, please discuss the nature and extent of the anticipated subcontracting, including the use of local businesses.

While Cardno can provide nearly all the engineering services the Town may require under this contract, we have included two highly qualified subconsultants to assist the Town with any geotechnical engineering requirements, or mechanical and electrical engineering needs.



Hahn Engineering, Inc. specializes in mechanical, electrical, plumbing and fire protection engineering and design. They also provide LEED design and commissioning services. Hahn Engineering specializes in forensic engineering and expert witness testimony for owners. Their principals have over 100 years combined experience in design, consulting engineering and construction management for private clients, institutions, local, state and federal agencies. Hahn employs a talented and knowledgeable staff in the mechanical and electrical engineering fields, system designers, AutoCAD technicians, and administrative support staff.



Driggers Engineering Services, Inc. (DESI) provides geotechnical engineering, construction inspection and materials testing services. A native Floridian, Jaime Driggers, PE, President and Chief Geotechnical Engineer, has over 40 years of experience in Florida geology, soils and foundations. His years of experience enable him to be more creative in providing foundation design alternatives versus conventional recommendations that can prove to be overly conservative and costly. DESI has completed more than 12,000 projects ranging from solid waste facilities, wastewater treatment plants, bridges and roadways, design and installation of stormwater and reclaimed water pipelines, and single and multi-family developments.

Cardno provides better value to our clients by competitively procuring necessary services on a project-by-project basis, and then providing effective management of the subcontracted firms such that Cardno remains ultimately responsible to the Town for all work performed.

11. Please describe the types of projects in which your firm has specialized. Include an example of a project which typifies the product of your firm.

Cardno professionals are engineers, scientists, landscape architects, geologists, planners, surveyors, construction administrators, water resource and ecological specialists, and economists with insight into your infrastructure and community. Our diverse perspectives and vast service offerings provide holistic solutions that achieve your goals.

Cardno’s wide range of service offerings are probably best exemplified by our longstanding professional services contract with the Town of Belleair. The multi-discipline contracts are our speciality. Below are some example projects that demonstrate the diverse types of projects Cardno has completed for the Town of Belleair:

- > Woodlawn Avenue Residential Traffic Calming
- > Bayview/Manatee Road Roadway Design
- > Belleair Planning Services
- > Town of Belleair NPDES
- > Community Center Stormwater Permit
- > Water Use Permit Application
- > Belleair Reverse Osmosis Feasibility Study
- > Reclaimed Water System Instrumentation
- > Belleair Wellfield
- > Membrane Treatment of Blackish Groundwater
- > Hydraulic Model Calibration
- > Sanitary Sewer Design
- > ESA Phase I and II for WWTP and Town Garage
- > Water Supply Planning, Permitting, Capital Improvements and Deep Injection Well Design
- > Public Lands Design Guidelines
- > Site Plan Review of Belleview Biltmore Hotel Plans
- > Roebbling Road N. Culvert Design
- > Evaluation of Wastewater Treatment Options
- > Water Main Construction Services
- > Wastewater Treatment Plant Short-Term Modifications
- > Cooperative Funding Assistance
- > Reclaim Water Control Evaluation
- > Bayview-Ponce-Oleander Drainage Improvements
- > Rosery-Laurel-Ponce Final Design
- > Water System Model Recalibration
- > Wastewater Treatment Plant Abandonment
- > Water Main Design – Flamingo Drive
- > Woodlawn Avenue Residential Traffic Calming
- > Reclaimed Water System Permit
- > Bayview Drive Shoreline Drive Improvements
- > Belleair Causeway Boat Ramp
- > Various Bridge Evaluations
- > North Pine Circle Road over Roths Canal Bridge Repairs
- > GIS / ArcView Training
- > Harborside Drainage Ditch

12. Based on your understanding of the proposed scope of services, please attach a list of representative municipal projects or engineering services in which your firm has been involved in the types of engineering services identified in this RFQ, specifically within the past 10 years.

TOWN OF BELLEAIR	GENERAL ENGINEERING SERVICES
a. Client	Town of Belleair
b. Contact person and phone number	Keith Bodeker, phone: 727.588.3769 x 415
c. Services provided	Planning, roadway design, permitting, hydrogeological studies, utility design, environmental assessments, construction support
d. Original estimate of project cost	Varies with each project
e. Actual project cost	Varies with each project
f. Original estimate of task completion schedule	Varies with each project
g. Actual completion schedule	Varies with each project

Cardno has held a multi-service General Engineering Contract with the Town of Belleair since 1991. The response to question 11 on the previous page shows a list of representative projects Cardno has completed for the Town.



PINELLAS COUNTY **GENERAL ENGINEERING SERVICES CONTRACT**

<ul style="list-style-type: none"> > a. Client 	<ul style="list-style-type: none"> > Pinellas County
<ul style="list-style-type: none"> > b. Contact person and phone number 	<ul style="list-style-type: none"> > Greg Cutrone, PE, phone: 727.464.4322
<ul style="list-style-type: none"> > c. Services provided 	<ul style="list-style-type: none"> > Cardno provides engineering services for various County departments. Cardno staff functions as an extension of County Staff and provides various engineering, design and permitting services, including: Roadway Design, Utility Design, Traffic Signal Design, Irrigation Design, Petroleum and Fuel, Sidewalk/Trail Design, Planning (Site, Installation & Project), Survey/SUE, Environmental and Ground Water Assessments, Construction Management, Stormwater & Drainage Design, Environmental Impact Studies, Parks and Recreation Design, Environmental Remediation, Wastewater Treatment, Water Resources & Hydrology, HazMat Management
<ul style="list-style-type: none"> > d. Original estimate of project cost 	<ul style="list-style-type: none"> > Varies with each project
<ul style="list-style-type: none"> > e. Actual project cost 	<ul style="list-style-type: none"> > Varies with each project
<ul style="list-style-type: none"> > f. Original estimate of task completion schedule 	<ul style="list-style-type: none"> > Varies with each project
<ul style="list-style-type: none"> > g. Actual completion schedule 	<ul style="list-style-type: none"> > Varies with each project
<ul style="list-style-type: none"> > Cardno has held a General Engineering Services Contract with Pinellas County since 1984. Representative project experience includes: 	
<ul style="list-style-type: none"> > Roadway Improvements - Highpoint, 62nd Avenue, Starkey Road > Wall Springs Trail Relocation > Utility Status Report - Bryan Dairy Road > Sidewalk - Cinnamon Hills Boulevard > Utility Status Report - Joe's Creek Bridge > Sidewalk Design: 68th Street, MacGregor Drive, Wexford Leas Blvd, Highland Boulevard, 113th Street > Utility Status Report - Nebraska Avenue > Drainage Improvements - 52nd Avenue at 108th Way > Allen's Ridge Outfall Replacement > Walsingham Reservoir Enlargements and Drainage > PGEC Joe's Creek Maintenance Dredging > Sidewalk and Trail - 119th Street > Curlew Creek Topographic Survey and Redesign > Reclaimed Water Transmission Main > Weedon Island Boardwalk > Sheriff's Complex Water Main Extension 	<ul style="list-style-type: none"> > Traffic Signal System / Plan Development > Stormwater System Rehabilitation - McMullen Booth > Alligator Creek Channel A > East Lake Road Extension Design, Permits > Curlew Creek Channel A > Bryan Dairy Road Improvements > GIS - Stormwater at Lassow > Survey FEMA Coastal Map SWDC Phase II > Miles Creek Channel Improvements > Pinellas Trail NE Extension > Tarpon Woods Drainage > ATMS / ITS Traffic GEC > Walsingham Park Master Plan and Design > Major Drainage Easement Program > Emergency Responders Building and Vehicle Storage Complex Development > Belcher Road 48-inch Water Transmission Main Replacement Study



HERNANDO COUNTY	MISCELLANEOUS ENGINEERING SERVICES
> a. Client	Hernando County
> b. Contact person and phone number	Mark Morgan, PE, phone: 352.540.4368, ext. 35151
> c. Services provided	Transmission/Distribution Pipeline Design, Water Resources, Hydrology, Water Treatment/Distribution Design, Storage Tank Design, Peer Review and Value Engineering, Trenchless Technology, Master Planning, Asset Management/GIS, Pipeline Condition Assessment/Rehabilitation, Site Work, Sanitary Sewer Evaluations, Stormwater/Drainage, Odor Abatement, Hydraulic Modeling, Construction Management, Permitting, Treatment Plant Design, Sanitary Sewer Overflow Abatement, Utility Work by Highway Contractor Agreement, Pump Station Design/Rehabilitation
> d. Original estimate of project cost	> Varies with each project
> e. Actual project cost	> Varies with each project
> f. Original estimate of task completion schedule	> Varies with each project
> g. Actual completion schedule	> Varies with each project
Cardno has held a Miscellaneous Engineering Services Contract with Hernando County for 14 years. Representative project experience includes:	
> Seville Water Treatment Facility – Resident Project Representation for new water treatment facility	> Elgin Boulevard (CR 572) – 4,000 feet of force main ranging from 4 inches to 12 inches and 4,200 feet of water main ranging from 4 inches to 12 inches
> County Line Road Force Main and Spring Hill Pump Stations – Design and construction phase services for new master wastewater pump station, new booster pump station, and eight miles of 16-inch and 20-inch force main (including trenchless crossing of Suncoast Parkway)	> FEMA Map Modernization for 23 separate watersheds covering more than 483 square miles
> South Brooksville Master Drainage Plan	> Deltona Boulevard Widening – included design of 2.7 miles of new 12-inch water main
> Master Sewer Plan of West Hernando County	> Spring Hill WWTP Odor Study
> US 19 Water Main and Utility Adjustments – Design for 25,000 LF of 16-inch water main, and design of adjustments of existing water and sanitary mains along a 34,000 LF FDOT roadway expansion corridor	> Airport Water Reclamation Facility from an 0.75 MGD 3.0 MGD
	> Fleet Maintenance Facility Redevelopment Study
	> Numerous water, wastewater, and reclaimed water pipeline designs (8-inch to 24-inch totaling over 22 miles)



HILLSBOROUGH COUNTY

GENERAL ENGINEERING SERVICES

a. Client	Hillsborough County
b. Contact person and phone number	Chris Bridges, PE, phone: 813.307.1848
c. Services provided	Cardno provides a variety of general engineering services to Hillsborough County including: Roadway Design, Environmental Statements, Water Treatment, Traffic Operation, Sidewalk/Trail Design, Water Resources, Hydrology, Surveying and Mapping, Subsurface Utility Engineering, Petroleum and Fuel, Planning, Right-of-Way Services, Irrigation, Drainage, Environmental Remediation, Hazardous Materials Management, Utility Design, Environmental Impact Studies, Water Supply, Wastewater, Environmental Assessments, Stormwater Design
d. Original estimate of project cost	> Varies with each project
e. Actual project cost	> Varies with each project
f. Original estimate of task completion schedule	> Varies with each project
g. Actual completion schedule	> Varies with each project
Cardno has held a General Engineering Services Contract with Hillsborough County since 1999. Representative project experience includes:	
> Orient Road Technical Evaluation Memo	> Grange Hall Loop Road Bridge
> Columbus Drive Extension	> Upper Tampa Bay Trail Underpass
> Speed Hump Inventory	> Hesperides and Sligh Intersection Stormwater Facilities
> Neighborhood Traffic Calming	> Upper Tampa Bay Trail Phase IV Study
> Lumsden Road	> Hillsborough Avenue and Webb Intersection PD&E Study
> GIS Inventory and Assessment Services	> County Courthouse – Remediation of Biological Wastes
> Fleet Maintenance Fuel System Upgrades	> 78th Street Sport Complex
> Bloomingdale Fire Station Fuel System	> Gunn Highway and Lutz Lake Fern Road Intersection
> Fire Stations Asbestos Surveys	> Gunn Highway and Tarpon Springs Road Intersection
> Shimberg Soccer Complex	> JC Handley Soccer Complex
> Asbestos Surveys (4 sites)	> Transportation Planning for Numerous Streets
> County Center Parking Garage Study and Design	> Duck Pond Stormwater Pipeline and Pumping Station
> SUE – Linebaugh Avenue Water Transmission	> Apollo Beach Blvd Roadway Improvements Traffic Tech. Memo
> Hillsborough County General Environmental Consulting	



CITY OF OLDSMAR	GENERAL ENGINEERING SERVICES
a. Client	City of Oldsmar
b. Contact person and phone number	Lisa Rhea, PE, phone: 813.749.1134
c. Services provided	Cardno provides general engineering services to the City of Oldsmar including: Water/Wastewater, Planning (Site, Installation and Projects), Transportation/Traffic Design, Intersection Improvements, Environmental Remediation, Drainage Improvements, HazMat Management, Drainage, GIS Implementation, Construction Services, Water Resources, Hydrology, Environmental Impact Studies, Landscape Architecture
d. Original estimate of project cost	> Varies with each project
e. Actual project cost	> Varies with each project
f. Original estimate of task completion schedule	> Varies with each project
g. Actual completion schedule	> Varies with each project
Cardno held a General Engineering Services Contract with the City of Oldsmar from 1998 through 2014. Representative project experience includes:	
<ul style="list-style-type: none"> > Oldsmar Trail Master Plan and Design > Commerce Boulevard and Douglas Road > Canal Recreation Park and Trail > Cypress Forest Park and Nature Trail > St. Pete Drive Streetscaping > East Lake Woodlands Preliminary Infrastructure Evaluation > Phase I Environmental Site Assessment > NPDES MS4 Support > Bayview Boulevard Improvements > St. Clair Avenue Drainage Improvements > Commerce Boulevard and Douglas Road Improvements 	<ul style="list-style-type: none"> > Commerce Boulevard Reclaimed Water Transmission Main > Bicentennial & Fire Station Park Improvements > City-wide Surveying Services > Cypress Forest Park and Nature Trail > Reclaimed Water Transmission & Distribution System > Olds Square Redevelopment > Traffic Safety Study > Bay Arbor Roadway Study > Evaluation and Appraisal Report > Marlborough Street and Pine Avenue Improvements



CITY OF TARPON SPRINGS	GENERAL ENGINEERING SERVICES
a. Client	City of Tarpon Springs
b. Contact person and phone number	Bob Robertson, PE, phone: 727.942.5610
c. Services provided	Cardno provides a host of general engineering and surveying services to the City of Tarpon Springs including: Water/Wastewater, GIS and Asset Management, Stormwater Management, Construction Management, Roadway and Drainage, Right-of-Way Services, Environmental Services, Surveying, Groundwater Analysis, Subsurface Utility Engineering, Permitting, Sinkhole Investigation
d. Original estimate of project cost	> Varies with each project
e. Actual project cost	> Varies with each project
f. Original estimate of task completion schedule	> Varies with each project
g. Actual completion schedule	> Varies with each project
Cardno has held a General Engineering Services Contract with Tarpon Springs since 2002. Representative project experience includes:	
<ul style="list-style-type: none"> > Tarpon Springs Potable Water Distribution System > L&R Industrial Boulevard Extension > Enterprise GIS and Asset Management Implementation > Design of Improvements to Brick Streets > Stormwater Inventory > Landfill Redevelopment Feasibility Studies/Concept Planning > Circle Drive Waterline Replacement – Survey > Environmental Impact Studies–Overstreet Lot Phase I & II > Potable Water Facilities 	<ul style="list-style-type: none"> > Union Academy Neighborhood Redevelopment Plan > Sinkhole Investigation at Community Center > Dr. Martin Luther King Drive Construction Management > Compaction Grouting at Community Center > Safford Avenue Improvements > Golf Course Sinkhole Evaluation > Lansden Court Pond Certification > Walmart Traffic Impact Study > SWFWMD Operation and Maintenance Inspection > Municipal Marina Design



CITY OF ST. PETERSBURG	GENERAL ENGINEERING SERVICES
a. Client	City of St. Petersburg
b. Contact person and phone number	Ziba Mohammadi, PE, CBI, PTOE, phone: 727.893.7478
c. Services provided	Cardno was retained to provide a variety of engineering services to the City of St. Petersburg, including: Roadway and Bridge Design, Construction management, Wastewater / Reclaimed Water Systems, Stormwater Management Services, Environmental Remediation, HazMat Management, Traffic Calming, Potable Water
d. Original estimate of project cost	> Varies with each project
e. Actual project cost	> Varies with each project
f. Original estimate of task completion schedule	> Varies with each project
g. Actual completion schedule	> Varies with each project
Cardno has held a General Engineering Services Contract with the City of St. Petersburg since 1998. Representative project experience includes:	
<ul style="list-style-type: none"> > 8th Avenue Sidewalk Improvements > Expert Witness Testimony > Booker Creek Assessments > Tierra Verde Bridge Utilities > Gandy Boulevard Widening > Albert Whitted Airport Area Sewer System Evaluation > Traffic Calming Roundabouts Study > Bryan Dairy Road Utility Locates > Basin J – Drainage Evaluation > Business Enhancement & Redevelopment Plan 	<ul style="list-style-type: none"> > Roadway and Drainage Improvements – Basin-A, Ponce de Leon, Highland Street, 8th Street, 16th Street > Elbow Lane Hydraulic Analysis > Hydroworks Sewer Model Training > Lift Station Conversions – 22 Lift Stations > Mirror Lake Outfall Improvements > Carillon Sewer Extension Evaluation > Public Utilities Building HVAC > Arrowhead Drive Reconstruction > City Signalization Improvements – 16th Street Mast Arms > Wastewater Treatment Plant Improvements



CITY OF INDIAN ROCKS BEACH	GENERAL ENGINEERING CONSULTANT/NPDES
a. Client	City of Indian Rocks Beach
b. Contact person and phone number	Dean Scharmen, phone: 727.595.6889
c. Services provided	<p>Cardno has provided site plan review for drainage, planning and development support, SWFWMD stormwater management plans, parks and recreation site design, downtown improvement for multi-use facilities, drainage improvements and water & wastewater support. The EPA delegated the responsibility of implementing the National Pollutant Discharge Elimination System (NPDES) stormwater program to states and local governmental agencies. The goal of the NPDES program is to achieve a nationwide improvement in water quality of natural water bodies and estuaries. Cardno's NPDES responsibilities include: Public Education and Outreach, Compliance Monitoring, Public Participation and Involvement, GIS / Database Development, Development of Stormwater Management Program, Stormwater Pollution Prevention Plans, Illicit Discharge Monitoring and Elimination, Phase 1 and 2 Permitting, Construction Site Runoff Control, Construction Permitting, Inspectors and Staff Training and Education, Water Quality Monitoring and Sampling, Maintenance and Documentation, Inventory and Discharge Outfall Mapping, Program Management, Post-Construction Runoff Management</p>
d. Original estimate of project cost	> Varies with each project
e. Actual project cost	> Varies with each project
f. Original estimate of task completion schedule	> Varies with each project
g. Actual completion schedule	> Varies with each project
Cardno has held a Contract with the City of Indian Rocks Beach since 1990. Representative project experience includes:	
<ul style="list-style-type: none"> > 22nd Avenue / 1st Street Construction Services > Access Improvements - Business > Access Improvements – Beach > Streets and Access Management Standards > Outfall Relocation - 455 - 20th Avenue > Outfall Replacements and Repairs > Business Triangle Redevelopment Plan > Business District Overlay Zoning > Bridge Widening - SR 688 / 699 > 1997 Manhole Repairs > Master Drainage Plan > Mapping of Existing Force Mains 	<ul style="list-style-type: none"> > Lift Station N. 1 Rehabilitation Design > Lift Station N. 3 Renovations > CRS (Class 9 City) > Contamination Assessment Report - City Hall > General Services - CIP > Restaurant Parking Analysis > Development Review - Hamlin's Landing > Development Agreement - Hamlin's Landing > Grant Application - Gulf Boulevard > FEMA / CRS Repetitive Loss Plan > Sanitation Yard Improvements > Stormwater Management Project - 14th and 15th Avenue



CITY OF GULFPORT

a. Client	City of Gulfport
b. Contact person and phone number	Tom Nicholls, phone: 727.893.1090
c. Services provided	Roadway design, water/wastewater evaluations and studies, Stormwater and drainage improvements, GIS, grant administration
d. Original estimate of project cost	
e. Actual project cost	
f. Original estimate of task completion schedule	
g. Actual completion schedule	

Cardno has been providing a variety of municipal engineering services to the City of Gulfport since 1992

- > Gulfport CIP
- > Beach Restroom
- > Beach Parking Lot Improvements
- > City Street Paving
- > Tangerine Avenue South Drainage Improvements
- > Intersection Improvements – Gulfport Blvd. & 49th Street
- > Intersection Improvements – Beach Blvd. & 28th Ave. South
- > Intersection Improvements – 49th Street & 11th Ave. South
- > Wood Ibis Park
- > USEPA Region 4 – Management, Operation and Maintenance (MOM) Self Audit of Sanitary Sewer
- > GIS Implementation Phase 1
- > Grant Application – 49th Street (\$400,000 Grant)
- > Grant Application – Gulfport Boulevard
- > North/South Pedestrian Connector
- > Sanitary Sewer Evaluation Study, Phase 1
- > Master Pump Station Flow Meter Study
- > Master Pump Station and Lift Station Improvements
- > Sewer System Evaluation
- > Water System Capital Improvement Plan
- > Water System Upgrade – Construction Services
- > Reclaimed Water Feasibility Study
- > Stormwater Utility Study
- > Storm Sewer Improvements – Clam Bayou
- > Shore Boulevard Streetscape and Vinyl Seawall Improvements
- > 49th Street Streetscaping and Sidewalk Improvements
- > 49th Street Outfall Improvements
- > Citywide Evaluation and Appraisal Report
- > Pump Station No. 3 Modification
- > Artesian Well Pump Test and Evaluation



13. Discuss how your firm will respond quickly to Town needs. How will you maintain close effective communications with Town staff?

Effective Project Communication Management

A successful project begins and ends with the timely and accurate transfer of information between the Town's Project Manager and Cardno's Project Manager, Tom Nogaj, PhD, PE. This central point of contact will ease demand for Town staff's time and streamline interdisciplinary coordination. It will be our Dr. Nogaj's responsibility to disseminate information to the appropriate parties within Cardno and any subconsultants.

Monthly project briefings are important to coordination, where schedules, budgets, technical deliverables, and other project-related matters are discussed. Dr. Nogaj will oversee project activities to ensure appropriate resources are allocated to meet budget, schedule and quality expectations, and an accurate accounting of overall project status is communicated to Town staff regularly.

Our advanced interactive accounting system provides all necessary information for our Project Manager to effectively manage the project, while being mindful of budget. Dr. Nogaj has direct access to our system at any time, allowing frequent reviews during periods of intense project activity.

Upon successful completion of each assignment, Cardno will proceed with project closeout in accordance with our policy. The closeout process will confirm no outstanding technical, contractual, financial, regulatory, or legal issues, retrieve and properly store all project information and files, including QC documentation, and ensure Town staff agree the project was successfully completed.

Cardno prides itself in our ability to deliver the resources of a larger firm while remaining nimble and responsive to client needs when called upon. This is the approach we have used in providing on-call services to our public agency clients, and we will continue to take that same approach when contacted by the Town of Belleair. The purpose of a continuing contract is to have a readily available vehicle to allow for a quick response, which Cardno will honor by responding immediately to task order requests with a proposed scope and fee, typically within a day or two timeline. It is Cardno's intention to be as accessible to Town staff as needed. Whether by phone, video conference, email, or in person, our team is readily available.

We understand that changes to a project's scope or complexity occur during the course of a project. By maintaining a frequent exchange of information between Cardno and the Town's project manager, we ensure a no-surprises relationship. If scope changes are required, we will work with the County's project manager to prepare a detailed understanding for the additional work and approximate time/budget to complete the work.

14. Provide a discussion of your firm's familiarity with typical problems which might arise with the provision of engineering services in the manner described in the RFQ.

Customer Satisfaction/Complaint Resolution

Customer satisfaction is vital to Cardno. We are committed to regularly engaging our clients to measure performance against service delivery, value and relationship building metrics. Cardno's global client satisfaction program incorporates a mix of online surveys and face-to-face interviews with clients. Survey results are collated and reported on a monthly basis to our senior team.

The key metrics we measure include:

- > Overall performance
- > Technical expertise
- > Communication and understanding client's needs
- > Meeting time frames
- > Value for money
- > Quality of Cardno documentation
- > Innovation
- > Benchmarking against competitors
- > Client focus

Cardno regularly reviews its client satisfaction results so we can continually improve our service delivery and develop positive and rewarding client relationships. Cardno responds to messages promptly and we do our best to keep our clients informed about the status of their projects.

At Cardno, we consider a client's complaint as a good opportunity to get an accurate snapshot of their perception of us and our performance. Our first step is to grant the client the appropriate audience and assure them their satisfaction is important. We

connect our clients to the right person at the very beginning—they are directed to the best Cardno professional to help solve their issue. Staying focused and making sure clients are satisfied with the solution to their complaint is a crucial step. Comments and/or notes are taken and added to our project files to eliminate the same mistake from happening again. Client satisfaction is of utmost importance to our day-to-day operations.

15. Document your firm’s ability to provide a high quality service on schedule and within budget. Discuss the control systems you will utilize to effectively manage projects.

PROJECT APPROACH

We understand, as part of this contract, there is potential to use any number of services for a task assignment. We are ready and willing to provide the Town with the skill set and experience necessary to effectively serve the Town’s needs, whatever they entail.

Cardno’s approach is developed from and proven by the company’s history of success on similar contracts and engineering projects for municipal clients. It is founded on the principles of responsiveness and unwavering commitment to quality. This approach has been refined and proven over our 70-year history of success on thousands of projects under similar miscellaneous services contracts for hundreds of clients, including many of your neighboring communities. Our approach to providing the Town with unparalleled responsiveness and quality includes:

1. Organizing a small, flexible team of highly qualified Cardno professionals and specialty subconsultants with exemplary skills in their area of expertise.
2. Utilizing experienced local staff with local government experience.
3. Developing an expeditious yet practical schedule to accommodate the City’s needs.
4. Taking a thorough and early permitting approach to eliminate snags in our production schedule.
5. Submitting phased plans for Town review, including a realistic estimate of construction costs.
6. Implementing our comprehensive Quality Assurance/Quality Control process for each task, no matter how small.



Cardno’s Quality Assurance/ Quality Control

We know the Town expects deliverables that have been thoroughly reviewed by highly qualified professionals. We believe the QA/QC component of the approach is a critical element of the design production process, so Cardno has robust QA policies in place.

Although our design professionals follow stringent internal QA/QC processes, it is our policy for senior professionals in each design discipline to perform independent reviews to ensure a quality product. These reviews focus not only on technical design standards and project scope requirements, but also on conflicts, cost, and constructability. Our QA/QC process emphasizes early identification of potential issues to minimize impacts.



Cost Control



Cardno understands the need to be financially responsible and mindful of budget constraints. Once a scope of services has been agreed upon for a given work assignment, Cardno will work to develop a fee that reflects the effort required to satisfy the scope, while keeping in mind any budget constraints Town staff pass along.

Our advanced interactive accounting system enables the Cardno team to strictly monitor project financial health, and ensures compliance with Federal Cost Accounting Standards. The system provides all necessary information at the contract, project and task levels for Dr. Nogaj to effectively manage the project, while being mindful of budget. The Project Manager has direct access to our system at any time, allowing for more frequent reviews during periods of intense project activity.

Plans-in-Hand Field Reviews

Plans-in-hand field reviews will be conducted by the Task Manager with the plan originators. After each field review, the Task Manager will document, incorporate, and verify the applicability of comments and questions raised. The Task Manager will prepare minutes of the field review meeting and distribute them to appropriate staff, with copies to the project files.

In addition to the review of the plans, calculations, and reports, all other support documentation including computer-generated calculations, specifications and special provisions, quantities, cost estimates, and studies will adhere to our checking procedure.

Construction Engineering & Inspection (CEI) Services

If the Town requires CEI services, Cardno offers these services for all types of construction projects including bridge construction. We meet all safety requirements for all construction projects. Depending on the client’s needs, job size, and complexity, Cardno can offer full-time, site-based resident engineers or part-time inspection staff. Our certified engineers and inspectors offer the expertise needed to resolve technical issues as they develop. They can also provide a comprehensive history of a project and support the owner’s position or concerns. Our inspectors are certified in FHWA-approved work zone traffic control safety programs to ensure public safety and minimize traffic flow disruptions.



16. Provide a list of Municipal, State, and Federal references which can be contacted.

Client	Contact Person	Contact Info
Pinellas County	Greg Cutrone, PE	phone: 727.464.4322
Hernando County	Mark Morgan, PE	phone: 352.540.4368, ext. 35151
Hillsborough County	Chris Bridges, PE	phone: 813.307.1848
City of Oldsmar	Lisa Rhea, PE	phone: 813.749.1134
City of Tarpon Springs	Bob Robertson, PE	phone: 727.942.5610
City of St. Petersburg	Ziba Mohammadi, PE, CBI, PTOE	phone: (727) 893-7478
City of Gulfport	Tom Nicholls	phone: 727.893.1090

17. Discuss your firm’s Affirmative Action and Equal Opportunity practices.

Equal Opportunity Employment Statement

Cardno provides equal employment opportunities (EEO) to all employees and applicants for employment without regard to race, color, religion, sex, national origin, age, disability, genetics or veteran status. In addition to federal law requirements, specific state or local laws or regulations may identify protected categories in addition to those listed in the policy, such as sexual orientation and/or gender identity. Cardno complies with applicable state and local laws governing nondiscrimination in employment in every location in which the company has facilities. This policy applies to all terms and conditions of employment, including recruiting, hiring, placement, promotion, termination, layoff, recall, transfer, leaves of absence, compensation and training. Cardno expressly prohibits any form of workplace harassment based on race, color, religion, gender, sexual orientation, gender identity or expression, national origin, age, genetic information, disability, or veteran status. Improper interference with the ability of Cardno’s employees to perform their job duties may result in discipline up to and including discharge.



Cardno has established a continuing Affirmative Action Program to assure equal employment opportunity in all of its policy decisions affecting recruitment, selection, assignment, promotion, training and all other terms and conditions of employment. Cardno has an audit and reporting system to measure the effectiveness of our affirmative action plans. Cardno’s current Affirmative Action Program is on file with the Corporate EEO/Affirmative Action Officer and is available for review.

18. Please indicate if you are aware of any personal or organizational conflicts of interest. Provide an explanation of your firm’s involvement in ongoing or pending litigation, claims, suits against the Town of Belleair, if any.

We are not aware of any personal or organizational conflicts of interest. Cardno has no ongoing or pending litigation, claims, or suits against the Town of Belleair.

19. Provide any additional information which you feel may be pertinent to the provision of these services, but not specifically required elsewhere in the RFQ.

Cardno has worked with the Town of Belleair for over 25 years. Below are some example projects that Cardno has completed for the Town or in the community over our long partnership.

Pelican Golf Club

The Pelican Golf Club is a redevelopment plan for the former Belleview Biltmore Golf Club. This golf course redevelopment will create a completely revitalized golf experience for local Belleair residents and major pro golfers. The main redevelopment goal is to upgrade the existing golf course to a world-class facility. Strategic bunkering, dramatic green contours, wide corridors to promote playability, and interesting green surrounds will be incorporated into the redevelopment. Wide corridors



are a fundamental criteria for achieving the desired strategy and playability. The site today has considerably more vegetation and mature trees than the era of the original construction and many edges of golf holes were overgrown. Cardno contracted with DEX imaging to provide surveying, drainage/stormwater engineering, site design, water use, environmental resource permitting, and cultural resources assessment services for the golf club's redesign. Cardno is assisting Beau Welling Design, a golf course design firm, with producing and permitting the required construction plans, including permits from the Town of Belleair, Pinellas County, Southwest Florida Water Management District, and US Army Corps of Engineers. The redevelopment plan includes three buildings as part of the clubhouse area and two restroom buildings as part of the golf course. New parking facilities at the clubhouse area will include 175 parking spaces. Other features include new signage, wall and fence combination around the parking areas, off-street loading zones, extensive landscaping to include tree removal and replanting, new stormwater collection, conveyance and storage facilities, and cultural resource and wellhead analysis.

Belleair Boat Ramp Courtesy Dock Facility, Pinellas County

This project included the inspection, design and permitting of a replacement floating dock system for recreational and commercial use. The facility was hardened to handle the difficult coastal conditions including significant wave forces from storm events. This replacement dock system successfully weathered the impacts and surge created by Hurricane Irma.

Hydrogeologic Services

Cardno continues to assist with wellfield management activities, including data evaluation, production well permitting, and pipeline design. Cardno completed a Brackish Water Evaluation study for the Town that evaluated converting the existing treatment facility to a Reverse Osmosis (RO) facility. Based on Cardno's feasibility evaluation completed in November 2011, the most viable option for RO concentrate disposal would be deep aquifer injection via a Class I injection well. Cardno met with FDEP representatives to discuss permitting, design, and testing requirements for a Class V test well and a Class I injection well.

Water Supply Planning, Permitting and Capital Improvements, Deep Injection Well Design

Cardno has assisted the Town on a number of projects related to their water facility. Cardno assisted the Town in renewing their Water Use Permit in June 2007. Because major production wells within the Belleair Wellfield experienced increased mineralization (saltwater intrusion) of groundwater, Cardno team members performed detailed hydrogeologic studies and developed and implemented measures to minimize the effects of saltwater intrusion. Additionally, optimization modeling was performed to design the optimal apportionment of wellfield withdrawals between production wells. A wellfield management plan was also developed.

Wellfield Management, Water Use Permitting, Preliminary Engineering of Plant Improvements

Cardno staff has provided wellfield management assistance to the Town of Belleair since early 1990s, including design and installation of three new production wells, including pumps, pipelines, and connections. We have completed three Water Use Permit applications, including a 20-year permit application in 2017. Permit activities included detailed hydrologic studies and associated groundwater modeling activities. Cardno is currently working with the Town to develop a design and associated funding sources evaluation for wellfield conversion to reverse osmosis treatment of brackish water. Detailed hydrologic studies have been

completed in support of these efforts

Manatee Road and Osceola Road Paving and Drainage Improvements

This project consisted of paving and drainage improvements on Manatee Road from Bayview Drive to Osceola Road and paving and drainage improvements from Manatee Road to Indian Rocks Road. Some sidewalks and ramps were added/replaced to comply with Americans with Disabilities Act requirements. New concrete driveway ramps were installed. The drainage system outfall to Tampa Bay was sized to handle the additional flow for future drainage flows from the proposed Bayview Drive Improvements, from Ocala Road to Manatee Road. The pavement along Osceola Road was widened from 15 feet to 18 feet.

North Pine Circle Road over Roths Canal

The Town of Belleair contracted Cardno to provide the repairs to this flat slab bridge. Severe cracking and spalling of the underside of the bridge near the northwest corner necessitated these repairs. Repairs consisted of patching this severely cracked and spalled concrete. Carbon fiber was used to restore strength to the affected slab unit. Existing plans were not known to exist; therefore, non-destructive testing was conducted on the structure to determine the spacing of the reinforcing steel and prestressing strands. This information was used in the design stage to determine the remaining structural capacity of the bridge and the amount of carbon fiber required to restore lost strength. In addition, repairs were made to plug gaps in the adjacent concrete sheet wall and fill in the associated voids in the soil behind the wall.

Bayview Drive Shoreline Drive Improvements

The Town of Belleair was experiencing shoreline erosion along the Bayview Drive shoreline from Manatee Road to the bridge north of Ocala Road. There was concern the continuous erosion from naturally occurring wave action in the bay could eventually impact the Bayview Drive roadway. The existing bank slopes are primarily protected by natural vegetation and trees. Shoreline and slope protection was required to stop and/or reduce the erosion. The Town applied for a Southwest Florida Water Management District Basin Board grant that allowed for a 50-50 cost sharing. Engineering and construction costs were estimated at \$5 million.

Services involved on this project included: topographic survey, geotechnical evaluation, environmental evaluation, preparation of design criteria and design plans for the improvements, compliance and adherence with Town and permitting agencies' requirements, attendance at permitting agency, review and pre-bid meetings, obtainment of necessary permits for construction, utility adjustments and coordination, preparation of probable construction costs, preparation of construction plans and specifications, bid selection and award, and construction management.

Preliminary Design for Membrane Treatment of Brackish Groundwater

Cardno has provided wellfield management services to the Town for over 20 years. Cardno provided planning and preliminary design services to the Town of Belleair plan for its long-term water supply demands through treatment of a brackish supply source. Based on the Town's close proximity to the Gulf of Mexico and historical increases in chloride concentrations throughout the wellfield, the Town needed to evaluate its current water source to ensure future water demands could be met and water resources were managed properly. After assessing impacts from saltwater intrusion to the wellfield, we provided planning and preliminary engineering services related to water treatment process improvements. Cardno also provided a Preliminary Engineering Report.

General Planning Consultant

Cardno acts as an extension of the Town's staff providing General Planning Services as needed. Cardno has provided assistance with tasks ranging from simple code interpretations to code revisions for the Town's overall Comprehensive Plan. Key Services:

- > Site Plan Review of Belleview Biltmore Hotel Plans
- > Review of Biltmore Demolition Plans
- > Review of Morton Plant Rezoning Application
- > General Site plan review
- > Land Development Code development, interpretation and application
- > Site Plan Application Review Process Amendments
- > Comprehensive Plan Amendments
- > Evaluation and Appraisal Reports
- > Attendance at Planning Board and Town Commission Meetings

- > Amendments to Historic Preservation Ordinance
- > Public Lands Design Guidelines

Wastewater Treatment Plant Demolition/Abandonment Plan

The Town of Belleair transferred its wastewater flow to Pinellas County and decommissioned its 0.8 mgd wastewater treatment plant. Cardno permitted the decommissioning and demolition through FDEP. Cardno oversaw removal of all wastewater, effluent, and residuals from tanks and pipelines, disinfection of all plant facilities, and removal of all tanks, pipes, control panels, and appurtenances.

Phase I and Phase II Environmental Site Assessments (ESAs)

Cardno performed Phase I and Phase II ESAs for the wastewater treatment plant and Town garage at 1075 Ponce de Leon Boulevard to support potential changes in land use for these properties. The work was partially funded by a U.S. EPA assessment grant provided by Pinellas County, which Cardno assisted in obtaining. To complete the Phase II ESA, 17 soil borings were advanced for soil characterization and OVA screening and five groundwater monitor wells were installed for groundwater assessment purposes. Based on this study, no soil or groundwater contamination was documented. However, Cardno recommended a contractor be used to remove the underground hydraulic lift within the garage area, and any residual soil impacts surrounding the lift tank be managed at that time.

Cardno in the Community

Cardno strives to create long-term relationships with the communities in which we work and live. We believe it is important to help develop the skills and capabilities of local people to provide ongoing benefits and to assist them in making a significant contribution to their own communities. Wherever possible we hire locally and collaborate closely with communities to improve knowledge and skills.

Independent of our professional work, Cardno employees are encouraged to make a difference in the community, both professionally and philanthropically, and to contribute through varied Corporate Social Responsibility activities. Cardno believes public involvement and community participation are key to project planning. Cardno takes a very proactive and “hands-on” approach to our projects, involving all members of the public, local businesses, and agencies. We maintain a continuous dialogue and engage diverse interests to lay the foundations for public understanding and sound decision-making on all of our projects. Providing easy-to-read information to the public in different formats will help them to understand the purpose of the project, as well as provide a basis for good feedback.

20. Is your firm a certified minority business enterprise with a government agency, such as the Florida Department of Management Services? If yes, please indicate as such and include documentation of an active certification for your firm.

Cardno is not a Florida-certified MBE firm. However, we are fully committed to the use of minority businesses in conjunction with our contracts and will meet or exceed any minority-based requirements set forth by the Town or any county, state or federal guidelines. Cardno routinely achieves minority and/or disadvantaged enterprise participation well above the overall client goal.

In January of this year, Cardno received a commendation from the FDOT Secretary and an overall grade of A+ for our outstanding DBE utilization rate of 23.55%.

21. Please Indicate the Types of Work for which your firm is submitting its qualifications by marking an X in the box to its left (Please mark X for all that apply)

<input checked="" type="checkbox"/>	A. Design Phase	<input checked="" type="checkbox"/>	G. Geotechnical Engineering
<input checked="" type="checkbox"/>	B. Construction and Inspection Phase Services	<input checked="" type="checkbox"/>	H. Pavement Management
<input checked="" type="checkbox"/>	C. Project Administration	<input checked="" type="checkbox"/>	I. Geographic Information Systems Services (GIS)
<input checked="" type="checkbox"/>	D. General Civil/Stormwater Engineering	<input checked="" type="checkbox"/>	J. Grant Administration
<input checked="" type="checkbox"/>	E. Traffic Engineering	<input checked="" type="checkbox"/>	K. General Engineering Consultation / Peer Review / Quality Assurance Review
<input checked="" type="checkbox"/>	F. Water/Wastewater Engineering		

Qualifications for Engineer of Record:
Professional Engineering Services

RESUMES



THOMAS M. NOGAJ, PHD, PE

Summary of Experience

Dr. Nogaj has 30+ years of experience in civil and environmental engineering. He has experience implementing and managing water and wastewater design and construction projects. Specific project experience includes facility planning of water supply and wastewater systems, design drawings and specifications, developing computerized models, designing deep well supplies and water treatment facilities, construction administration, and implementing IT projects including computerized maintenance management systems and custom software development. His research focuses on the "Mathematical Modeling of Carbon Removal in the A-Stage Activated Sludge System."

Project Experience

Miami-Dade Water and Sewer Department, Infiltration/Exfiltration/ Inflow Improvement Program Software Development, Miami, Florida. Senior Project Engineer for development of a software application. This application utilized data collected by the SCADA system to calculate influent hydrographs to the pump stations. This eliminated the need for in-line flow meters in the majority (approximately 900) of the stations resulted in an annual savings to the Department in excess of \$250,000.

Miami-Dade Water and Sewer Department, Infiltration/Exfiltration/ Inflow Improvement Program Effectiveness Study, Miami, Florida. Senior Project Engineer for a program effectiveness study. The study objective was to quantify the reduction of infiltration/ exfiltration/inflow through analyzing flows and loading at each of three regional wastewater treatment plants, analyzing pre and post nighttime flow monitoring data for each basin in the study area, and evaluation of billable water consumption data.

Village of Royal Palm Beach, Evaluation of Water and Sewer Service Extension to the 20-Mile Bend Area, Royal Palm Beach, Florida. Senior Project Manager for the development of a technical memorandum evaluating alternatives for expanding the Village's service area.

Village of Royal Palm Beach, Reuse Study, Royal Palm Beach, Florida. Senior Project Manager for the development of a technical memorandum evaluating reuse options for the Village.

South Martin Regional Utility, Wastewater Collection System Priority Station Improvements, Florida. Senior Project Manager for the development of contract documents to make improvements to seven lift stations.

Orange County Utilities, Orlando, Florida. Senior Project Manager providing construction management services for the EWRF Phase V WRRF Expansion including a new headworks, AWT upgrades and effluent pump station improvements.

Orange County Utilities, Orlando, Florida. Senior Project Manager providing design services for the EWRF Phase V Disk Filter Expansion. The design included new 30 mgd of disk filter capacity. Design included coordination with the EWRF Phase V expansion to fit the disk filters into a very tight hydraulic profile.

South Martin Regional Utility, Alternative Water Supply Funding Application to



Project Role
Project Manager

Profession
Professional Engineer

Years' Experience
30

Joined Cardno
2018

Education
PhD / Environmental Engineering / 2015

MS / Environmental Engineering / 1985

BS / Civil Engineering / 1983

Professional Registrations

Professional Engineer FL No. 42854

South Florida Water Management District. Senior Project Manager for development of AWS application to continue SMRU's long-term plan to provide effluent reuse.

South Martin Regional Utility, Wastewater Treatment Plant Improvements, Florida. Senior Project Manager for improvements to the WWTP including installation of fine bubble diffusers, improvements to surge tanks for odor control, and process control upgrades.

Dekalb Sanitary District, Wastewater Treatment Plant Expansion, Dekalb, Illinois. Project Manager/Team Leader for design and construction of \$10.5 million expansion to existing wastewater treatment facility. This expansion included a new headworks facility with mechanical bar screens and grit removal, raw sewage pump station, primary splitter structure, trickling filter splitter structure, activated sludge, final settling and sludge thickening, upgrade of the existing tertiary filters, and SCADA for process control.

Wastewater Treatment Plant Expansion, DeWitt, Iowa. Project Manager/Team Leader for design of a \$4 million expansion to existing treatment facility. Expansion included new headworks facility with mechanical bar screens and grit removal, raw sewage pump station, primary settling tanks, oxidation ditch, final settling tank, and anaerobic digestion.

Wastewater Treatment Plant Expansion, Durant, Iowa. Project Manager/Team Leader for the design of a \$2 million expansion to the existing wastewater treatment facility. The expansion included a new mechanical bar screen and grit removal, raw sewage pump station, primary clarifiers, modifications to the existing trickling filter to improve performance, final settling and sludge handling.

Northeast Water Treatment Plant and Wastewater Reclamation Facility Common Facility Design, Collier County, Florida. Senior Project Manager for the Common Facility Design at the Northeast Water Treatment Plant and Wastewater Reclamation Facility. Facilities included laboratories, process control rooms, administration building, maintenance, and electrical building.

Solid Waste Authority, Design Criteria Professional Services, Palm Beach County, Florida. Senior Project Manager for design professional services to obtain a firm to provide design, build and operate services for a regional 400 wet ton per day biosolids processing facility.

Wastewater Treatment Plant Expansion, Village of Royal Palm Beach, Florida. Senior Project Manager for the expansion of the WWTP from 2.2 mgd to 4.4 mgd. Processes included a new headworks, new final clarifiers, new chlorine contact basin, influent flow equalization, aerobic digestion and a new belt press.

Sewer System Evaluation Study (SSES), City of Oakland Park, Florida. Project Manager for the implementation of a SSES for the city. Responsibilities included flow monitoring, nighttime flow isolation, TV inspection, manhole inspection and smoke testing to develop a cost-effective rehabilitation plan for the removal of excessive infiltration and inflow.

SSES, Titusville, Florida. Project Manager for the implementation of a SSES for the city including flow monitoring, night-time flow isolation, TV inspection, manhole inspection, smoke testing and dyed-water testing. Flow monitoring involved hydraulically modeling the network of 75 lift stations using the lift stations as metering points for monitoring pump operation (electric run-time meters).

Florida Cities Water Company, Sewer System Evaluation Study, Florida. Project Manager for the implementation of a SSES for the City of Golden Gate, Florida. The project included flow monitoring, nighttime flow isolation, TV inspection, manhole inspection and smoke testing to develop a cost-effective rehabilitation plan for the removal of excessive infiltration and inflow.

City of Pickerington, Water Treatment Plant, Pickerington, Ohio. Process Design Manager for a new 1.5-mgd water filtration plant with ion exchange softening. The project involved installing two new city wells at a new site and interconnecting the existing well field into the new facility. The treatment process included one 1.5-mgd aerator/dualator, three ion exchange softeners, five intermediate pumps, three high service pumps, and a laboratory, all tying into the existing system.

County Sanitation Districts, Pre-chlorination Facility Design, Orange County, California. Lead Design Engineer for the design of a 50,000 lb/day, state-of-the-art pre-chlorination facility including a bulk chlorine supply totally enclosed facility with caustic scrubber and standby ton cylinder supply.

DOUGLAS STOKER, PE

Summary of Experience

Mr. Stoker currently serves as Cardno's Southeast Business Unit Leader responsible for client relationship management and business development for Cardno's Southeast infrastructure division. He has extensive experience in all aspects of surface transportation analysis and design, including a long history of bridge and structures design as well as project management on conventional and design-build projects. He worked with FDOT Central Office to develop a quality assurance review process that was used to audit consultants and district offices, and has served as QA Manager for all transportation design efforts for nearly a decade.

Project Experience

Old Coachman Road Bridge over Alligator Creek, Pinellas County, Florida.

Principal-in-Charge and Quality Assurance Coordinator for Phase I and Phase II Bridge Replacement Study. The existing bridge is functionally obsolete and overtops under extreme event rainfall. The study explored the bridge and approaches and their impact to upstream and downstream flooding.

Duke Energy Trail Connectivity Evaluation, Pinellas County, Florida. Principal-in-Charge and Quality Assurance Coordinator for planning level review of connectivity alternatives. This project evaluated the feasibility of widening two bridges to accommodate a multi-use trail, widening East Lake Road to provide a bike lane, and signalized intersection evaluation.

General Engineering Services Contracts. Project Manager or Project Engineer for a variety of general engineering services contracts with public sector clients. Duties have ranged from site design, environmental management, hazardous materials, contract management, project oversight, technical support, urban planning, public involvement, traffic engineering, drainage design/permitting, roadway design, water/wastewater, development review, urban planning, master planning and construction coordination. Clients include:

> Hillsborough County	> City of Clearwater	> Pinellas County
> Manatee County	> City of Temple Terrace	> City of Tampa

Orange Street Bridge over Minnow Creek, Pinellas County, Florida. Principal-in-Charge and Quality Assurance Coordinator for Phase I Bridge Replacement Study. The existing bridge is functionally obsolete and is beyond its original estimated service life. The evaluation determined that the condition of the bridge is excellent for its age and that it satisfactorily serves the level of traffic on Orange Street.

SR 60 (Courtney Campbell Causeway) Shared-Use Path from Bridge #150138 to Pinellas/Hillsborough County Line (FDOT District Seven), Florida. Quality Assurance Manager for reconstructing the existing frontage road along SR 60 (Courtney Campbell Causeway) into a 12-foot-wide shared-use path for pedestrians and bicyclists. Damaged portions of the existing seawall will be reconstructed and repaired and new shoreline protection will be added.

Belleair Causeway, Pinellas, Florida. Project Manager for the design and permitting of a replacement dock system for recreational and commercial use. The facility was



Project Role

Principal-in-Charge / QA Manager

Profession

Professional Engineer

Years' Experience

26

Joined Cardno

2014

Education

ME / Civil Engineering / 1992

BSCCE / Civil Engineering / 1999

Professional Registrations

Professional Engineer:

FL No. 50659

GA No. 26065

AZ No. 68348

NC No. 25835

American Society of Civil Engineers (ASCE), No. 273984

American Society of Highway Engineers (ASHE)

Florida Institute of Consulting Engineers (FICE)

Florida Engineering Society (FES)

National Society of Professional Engineers (NSPE), No. 9000046

hardened to handle the difficult coastal conditions including significant wave forces from storm events. This replacement dock system successfully weathered the impacts and surge created by Hurricane Irma.

I-275 Bridge Shoulder Widening/Median Closure (FDOT District Seven), Hillsborough County, Florida. Quality Assurance Manager for this project which consists of widening the existing bridges to provide 10-foot-wide shoulders and to eliminate the existing open median. Limits of the project extend from SR 600/Hillsborough Avenue to Yukon Avenue along SR 93 (I-275). Cross streets include from south to north Hillsborough Avenue, Hanna Avenue, Sligh Avenue, Broad Street, Hillsborough River, Bird Street, Waters Avenue, and Yukon Street. This project also includes installing under-deck lighting on the bridges, widening outside shoulders to match the new bridge shoulders, and adjusting roadway lighting to accommodate the bridge widening. Other features include the addition of ITS conduit within the barrier wall for connection to existing ITS facilities, overhead signage, pavement markings, and resetting guardrail.

SR 45/US 41 (Nebraska Avenue) (FDOT District Seven), Hillsborough County, Florida. Quality Assurance Manager for this project consisting of milling and resurfacing 1.5 miles of existing travel lanes along this four-lane corridor from Sligh Avenue to Busch Boulevard. This project also includes new concrete bus pads, sidewalk repair and replacement, upgrade bridge railing, guardrail at the Hillsborough River bridge and the addition of full pedestrian features at existing signal locations. New signals were added at 3 intersections (box span), signing and pavement markings, and minor drainage improvements along the project north of the Hillsborough River.

SR 45/SR 585 (US Business 41/21st and 22nd Street) (FDOT District Seven), Tampa, Florida. Quality Assurance Manager for milling and resurfacing the existing travel lanes along 2.15 miles of N 22nd Street from north of SR 60 (Adamo Drive) to south of Osborne Avenue, and 0.56 miles of North 21st Street from north of SR 60 to East 13th Avenue. The project traverses the Ybor City National Historic District, Barrio Latino Local Historic District and the East Tampa community. The project segment of 22nd Street consists of three primary sections: one mile of urban one-way three-lane highway with granite curb from SR 60 to 22nd Avenue, 0.7 miles of one-way two-lane roadway with curb and gutter from 22nd Avenue to Dr. MLK Jr. Blvd., and a half mile of two-lane two-way roadway with flush shoulders from Dr. MLK Jr. Blvd. to Osborne Avenue. The northern two sections of the project are predominantly residential. The project segment of 21st Street is a one-way three-lane roadway This segment is predominately residential. The other improvements include repairing and replacing sidewalk and bus pads, adding full pedestrian features at all existing signal locations, and upgrading signs and pavement markings. The railroad crossing at 22nd Street was also upgraded.

Pavement Asset Management for Hillsborough County, Florida. Project Manager for preparing plans for milling and resurfacing of 12 urban and/or rural roadway sections of varying length and number of lanes. Included are two-lane rural section roadways and five-lane, urban roadways, from less than one mile to four miles in length. Plans are aerial-based with full pavement marking plans to current standards for restriping. Included are improvements to curb ramps and other pedestrian features to bring these facilities into compliance with current ADA standards. Also included are considerations for adding bike lanes (if feasible) where none currently exist by reducing through lane widths in conformance with the current buffered bike lanes policy and the FDOT Plan Preparation Manual.

Wall Springs Park Coastal Addition, Pinellas County, Florida. Project Manager for this multi-discipline park project that included planning, engineering and building design services to facilitate construction of this park on a 161-acre coastal parcel of land in Pinellas County. Project elements included:

> Trailhead and parking	> Sidewalk along adjacent street	> Two-lane paved roadway
> Paved and unpaved trails	> Utility services	> Entry wall and sign
> Entry features/gates	> Restroom (ADA)	> Picnic shelter pavillion

Detention Center 'F' Channel 6 Modifications, Pinellas County, Florida. Project Manager for this ongoing project that includes stabilizing the channel to correct ongoing erosion and modifications to improve truck access to an adjacent loading dock. Roadway and drainage conveyance system reconstruction will be included as well as security fencing relocation. Project includes permitting and extensive coordination with Pinellas County and the Pinellas County Jail facility operations.

DON MCCULLERS, COA

Summary of Experience

Mr. McCullers is a licensed Class A wastewater treatment plant operator with 42 years of experience in water and wastewater systems. Mr. McCullers serves as the manager of the water and wastewater group for Cardno with expertise in the analysis of existing utility systems and the preparation of plans and specifications for the construction of new and rehabilitated water and wastewater treatment facilities, pump stations, water distribution systems, interceptor sewer systems, effluent disposal facilities, and reclaimed water systems. He has consulted with various municipalities, government agencies, engineering firms, and contractors. Don is a certified trainer under NASSCO's Pipeline Assessment and Certification Program (PACP) and is an expert in sanitary sewer system evaluations and rehabilitation projects.

Project Experience

HDPE Force Main Intracoastal Waterway Crossing, Pinellas County, Florida. Pinellas County owned and operated a 12-inch-diameter cast iron pipe that carried wastewater from the Cities of Indian Rocks Beach and Belleair Beach eastward to Pinellas County's McKay Creek booster pumping station facility. The force main had experienced numerous breaks on the upland sides. Underwater investigation was conducted to locate and assess the pipeline's condition. Replacement using horizontal directional drilling (HDD) was recommended based on the results of the investigation. Cardno was responsible for the engineering design, permitting, preparation of bid specifications and plans, and construction oversight for construction of a 16-inch HDPE subaqueous force main replacement, 1,400 feet in length. A number of precautions were implemented to ensure a quality product and maintain environmental safety of the surroundings. The pipeline ran next to a condominium complex building and their tennis courts. A permanent 25-foot wide easement across a portion of the property owned by Shipwatch Yacht and Tennis Club was negotiated and secured from the homeowners association. Geotechnical investigation also indicated the presence of unfilled dissolution features at varying depths, which is common for the region. To mitigate the potential for inadvertent surface returns or frac-outs, the contractor was required to install a conductor casing 125-feet long at the drill rig entry side. The conductor casing was 36-inch diameter steel pipe with a wall thickness of 1/2 inch to prevent drilling fluid from leaving the borehole by hydrofracturing the soil formation or through unfilled solution features. Due to the anticipated drilling pressures, a relief well was installed near the exit location of the proposed HDD bore.

Town of Belleair Water Treatment Plant, Belleair, FL. Assisted the Project Manager for various projects at Town's wellfield, 1.2 mgd treatment plant, and distribution system including: (1) Industrial Wastewater Permitting of filter backwash water (2) evaluated existing plant and raw water system and made recommendations for Capital Improvement Projects, and (3) design and permitting of chloramines conversion to address disinfection byproducts in distribution system.

Various Projects, Town of Belleair, FL. Project Manager / Engineer for several projects for the Town of Belleair, including:

- > Water/Wastewater Capital Improvement Plan - performed review
- > Wastewater treatment facility - evaluated this facility that was having difficulty meeting its nitrogen level



Project Role

Deputy Project Manager

Profession

Senior Project Manager

Years' Experience

42

Joined Cardno

1993

Education

Class A WWTP Operator

PACP/MACP-Trainer

Professional Registrations

WWTP Operator 0003804

PACP/MACP/LACP Trainer

- > Water main design
- > Wastewater treatment plant demolition - technical advisor for decommissioning

US 19 (SR 55) from Whitney Road to North of SR 60, Pinellas County, FL. Project Manager for design and permitting for relocation of more than 6,000 linear feet of water distribution pipe up to 24 inches in diameter and 6,000 linear feet of 42-inch water transmission main along 2.8 miles of roadway. This was a \$160 million roadway improvement project conducted under a UWHCA. Work included micro tunneling under Joe's Creek, steel sheet piling, extensive joint restraint, pipe thrust collars, pressure tapping, line stopping, valves, and appurtenances. Plans and contract documents were submitted using FDOT's PEDDS.

US 19 from South of Seville Boulevard to North of SR 60, Pinellas County, Florida. Project manager for relocating and/or adjust the County's 42-inch water transmission main to accommodate roadway improvements. Tasks include project management, consultation, and data collection, as well as attendance at utility meetings as required. In addition, Cardno provided drafting services to transfer the relocation design performed by Pinellas County to FDOT drawings. This phase also included incorporating the Relocation Schedule, Technical Special Provisions, and Cost Estimate and submittal of the UWHCA package to FDOT.

Water Transmission Replacement Conceptual Study, Pinellas County Utilities Engineering. Assistant Project manager for Pinellas County's Belcher Road Water Transmission Replacement Conceptual Study. The project comprised the evaluation of rehabilitation alternatives of 15,000 linear feet of 48-inch prestressed concrete cylinder pipe. Relevant trenchless technologies such as microtunneling (off-line replacement) and sliplining (in-line replacement) were evaluated. The appropriate trenchless technologies were reviewed based on routing, hydraulics, available materials, magnitude of service disruption and costs. Scenarios from the County's calibrated hydraulic model were run to evaluate the existing pressures and flow rates within the pipeline. The model was also used to determine the effects of the rehabilitated pipeline on overall system pressures, capacity and storage.

North County Reclaimed Water Transmission Main, Pinellas County, Florida. Project Director for design of the County's North County Reclaimed Water Transmission Main. Engineering consulting services include route analysis, hydraulic evaluation, preparation of design and contract documents, bidding assistance, and construction services. The project completes the North County reclaimed water distribution system looping and effectively provided up to 4.0 mgd additional reclaimed water to customers. The pipeline enables the County to manage system-wide demand. The project includes approximately 14,000 LF of 24-inch transmission main constructed in open cut and by horizontal directional drilling, highway crossings, valves and appurtenances.

Bryan Dairy Roadway Improvement Water Line Relocation, City of Pinellas Park, Florida. Project Manager for the design and relocation of approximately 3,100 LF of potable water pipeline ranging in size from 6-20 inches for the Bryan Dairy Roadway Improvement Project. Also included the completion of a JPA package for the City with Pinellas County. Design was completed January 2006. Estimated utility relocation cost \$900,000.

Two-Inch Galvanized Pipe Replacement, Pinellas County. Pinellas County accelerated the replacement of its two-inch galvanized water distribution piping that was still in use—approximately 105 miles of piping—with high density polyethylene (HDPE) and PVC pipe. The County planned to replace this pipe over a six-year period, but accelerated that timeframe to 18 months. Cardno was one of five consultants selected to design the replacement piping system as well as provide construction oversight and inspection. Cardno prepared design documents and provided construction services, including full-time inspection, for four individual projects totaling approximately 51,000 feet of pipe. Most of the pipe (two-inch HDPE) was installed by horizontal directional drilling; however, some six-inch pipe was installed as well to provide enhanced fire protection. The project involved construction in many residential areas, so public relations was a major factor.

Gulfport Sanitary Sewer Evaluation Study (SSES), Gulfport, Florida. Project Manager involved with providing services for the City to identify and repair areas within the collection system with infiltration and inflow (I/I). The project involves State Revolving Funds (SRF) and included a comprehensive investigative plan with flow monitoring, closed-circuit TV (CCTV) inspection, smoke testing, visual inspections, etc. All the data was combined and evaluated in order to provide prioritized recommendations as well as construction work orders for sanitary sewer point repairs and trenchless rehabilitation with CIPP lining or grouting.



JEREMY RUNKLE, PE

Summary of Experience

Mr. Runkle specializes in highway and roadway design, serving as lead engineer for various FDOT projects throughout the state. He is proficient in geometric design including intersections and interchanges with operational improvements, closed conveyance drainage, signing and pavement markings, sidewalk/trail design, bicycle facilities, pedestrian safety enhancements, and ADA compliance. He is certified in advanced maintenance of traffic, specifications, design variations and exceptions, cost estimating, and highway traffic noise analysis.

Significant Projects

Districtwide Enhancement Projects, FDOT District Seven. Project Engineer providing services for numerous enhancement projects that included pedestrian/bicycle trail projects, sidewalks, bike lanes, and trail overpasses. Design projects encompassed pedestrian facilities including sidewalks, shared-use path and bus landing pads to connect to pedestrian facilities. Projects include:

- > SR 693 (66th Street) Sidewalk, Pinellas County
- > Little Road Sidewalk, Hillsborough County
- > Martin Luther King Boulevard Sidewalk, Hillsborough County
- > Thonotosassa Road Sidewalk, Hillsborough County
- > Fletcher Avenue Median Design, Hillsborough County
- > SR 597 (Dale Mabry Highway) Sidewalk, Hillsborough County

SR 693 (66th Street) Sidewalk Improvements, Pinellas County, FL. Professional Engineer Intern for design and construction of 1.4 miles of sidewalk along SR 693. Responsible for Computation Book and Design Documentation.

SR580 (Hillsborough Avenue) from East of Air Cargo Road to West of North Lee Place, Hillsborough County, Florida. Project Engineer for design and preparation of construction plans for 3.1 miles of six-lane suburban roadway. Services included pavement design, bike lane design, access management, sidewalk design, drainage updates, utility coordination, structural design for steel pole box spans to replace existing poles, signing and pavement marking, signal and lighting upgrades, survey, and public involvement.

Little Road Sidewalk, Hillsborough County, FL. Professional Engineer Intern for construction of 1.0 mile of sidewalk along the east side of Little Road from Bloomingdale Avenue to Durant Road. Little Road is a two-lane rural roadway with residential properties adjacent to the roadway.

Martin Luther King Boulevard Sidewalk, Hillsborough County, FL. Professional Engineer Intern responsible for design of 0.25 miles of the sidewalk along MLK Boulevard.

Project Role

Roadway Engineer

Profession

Professional Engineer

Years of Experience

11

Joined Cardno

2007

Education

BS, Civil Engineering, 2005

MS, Industrial and Systems Engineering, 2015

MBA, 2016

Professional Registrations

Professional Engineer, FL, No. 73855

Professional Engineer, SC, No. 34855

Professional Engineer, NC, No. 045474

Affiliations

American Society of Civil Engineers (ASCE)

American Society of Highway Engineers (ASHE)

Florida Engineering Society

Thonotosassa Road Sidewalk, Hillsborough County, FL. Professional Engineer Intern responsible for design 1.4 miles of the sidewalk along Thonotosassa Road. Thonotosassa Road is a two-lane rural roadway with residential properties adjacent to the roadway.

Fletcher Avenue Median Design, Hillsborough County, FL. Professional Engineer Intern assisting with horizontal geometry design and ADA specifications. Project limits extend from 22nd Avenue to Bruce B. Downs Boulevard.

SR 77, Washington County, FDOT District Three. Lead Project Engineer for design-build project to widen 3.4 miles of SR 77 from the existing two-lane capacity to a four-lane roadway from north of CR 279 to north of Sunny Hills Boulevard. Services included roadway design, drainage, signing and pavement markings, and development of landscape opportunity areas.

SR 9A (I-295) Managed Lanes Concept, Duval County, FDOT District Two. Lead Project Engineer for widening project of 6.6 mile segment of interstate from an existing four-lane, limited-access facility to an eight-lane freeway with two managed (express) lanes in each direction separated by a paved buffer from the general purpose lanes. Services included roadway plans, horizontal and vertical geometry, typical section alternatives, rigid and flexible pavement design, drainage support, pavement markings, traffic control plans, noise wall analysis, and public involvement.

Coastline Drive and Liberty Street Bridge Replacement (LAP) Design/Build, Duval County Public Works. Engineer-of-Record for roadway improvements including full reconstruction, widening, milling and resurfacing, cul-de-sac geometry, and reconstruction of the existing riverwalk along St. Johns River. Services included plans production, roadway design, signing and pavement markings, maintenance of traffic, landscape and hardscape design, pavement design, and specifications.

Mobility Works Parramore Road Extension, Duval County, Jacksonville Transportation Authority (JTA), Florida. Lead Project Engineer for conceptual design of a proposed segment of Parramore Road to connect from Youngerman Circle to new site development. The project included roadway design and alternative alignments, signing and pavement markings, closed drainage system, preliminary design of stormwater management facility, and right-of-way acquisition.

Districtwide Enhancement Projects, Various Counties, FDOT District One. Project Engineer providing services for pedestrian safety enhancement projects, including multi-modal facilities such as bike lanes and sidewalks, landscaping projects (included landscaping of plants, decorative brick sidewalks, street printing, and decorative lighting), and restoration of historical train depots. Projects include:

> Central Avenue Sidewalk, Collier County	> Memorial Drive Sidewalk, Highlands County
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Operations & Maintenance (O&M) Campus Storm Damage Assessment, Duval County, Florida, Jacksonville Transportation Authority (JTA). Engineer-of-Record for development of storm damage assessment for JTA O&M campus servicing bus rapid transit (BRT) fleet at Myrtle Avenue. Services included visual inspection of damage caused from Hurricane Matthew to building structures, roadway and driveways, signage, light poles and security fencing throughout the site and preparation of a detailed report of findings and recommendations.

Intersection Improvements, Escambia County, Florida, Department of Public Works. Project Manager and Lead Engineer for roadway and drainage design for intersections of CR 297A at Kingsfield Road and CR 97A at Old Chemstrand Road. Roadway improvements include widening for the addition of left and right turn lanes on each approach, drainage modifications, signing and pavement markings, pedestrian amenities including sidewalk, signalization, utility coordination, and post-design services.

SR 50, Hernando County, Florida. Professional Engineering Intern for design of approximately four miles of roadway widening from an existing four-lane rural to a six-lane rural roadway. Lead on the design of side street alignments, mainline cross sections, driveway half-sections, side street profiles, and back of sidewalk profiles. Other project services include design for signals, signing and pavement marking, lighting, extensive drainage, right-of-way acquisition services and public involvement.



JASON YAM, PE

Summary of Experience

Mr. Yam has considerable experience in project management for Florida Department of Transportation (FDOT) and local government roadway design projects. Most of his career has been spent serving as project engineer or project manager for roadway projects ranging from small rural to large interstate systems. His experience includes roadway reconstruction and capacity improvement projects, milling and resurfacing, and enhancement projects including multiple trail design projects. He is extremely knowledgeable in the preparation of roadway plans, signing and pavement marking plans and maintenance of traffic plans. Mr. Yam is very experienced with FDOT and Florida Greenbook standards and requirements.

Project Experience

Street and Sidewalk Improvements, Pinellas County, FL. Project Engineer for design of various roadway and sidewalk features throughout Pinellas County. To date, services have included design plans, construction documents, permitting, design surveys, conceptual layouts, preliminary design drawings depicting property lines, easements adjacent to right-of-way, curb lines, known utilities, and topographic features.

Pinellas Trail Loop Alignment Study, Pinellas County, FL. Project Engineer for the Pinellas Trail Loop Alignment Study in support of the County's 2015 Tiger Grants submission. This study explored and identified the preferred alignment for two missing gaps in the existing Pinellas Trail Loop. The study areas are located near the center of urbanized Pinellas County and completes the multi-use trail link from Tarpon Springs to St. Petersburg. The corridor will provide a significant recreational and commuter feature.

Design Support Continuing Services, FDOT District Seven. Project Manager for this contract that provides design support services for fast-paced task assignments to provide construction plans updates, post-design services, construction assistance, and expert witness testimony. Tasks assigned under this contract to date have included lighting design, signalization, intersection retrofits, roadway design, sidewalk design, and post-design services.

US 19 from CR 578 to Toucan Trail, Hernando County, FDOT District Seven, FL. Deputy Project Manager for milling and resurfacing and widening 3.7 miles of US 19. Services provided included drainage, signing and pavement marking, signalization, and lighting design as well as right-of-way mapping and subsurface utility engineering. The project included five signalized intersections and five non-signalized intersections. ADA deficiencies were addressed along the corridor. In addition, a study was performed to determine a need for multi-modal enhancement services.

Himes Avenue and Hillsborough Avenue Intersection, Hillsborough County, FDOT District Seven. Project Engineer assisting in post-design services for this intersection improvement project. Tasks included assistance with review of shop drawings, field reviews with the Department staff and contractor, and plan revisions.

SR 580 from Air Cargo Road to Lee Place, Hillsborough County, FDOT District Seven. Project Manager and Engineer of Record for design and preparation of

Project Role
Project Manager

Profession
Roadway Engineer

Years' Experience
19

Joined Cardno
2000

Education
BSCE / Civil Engineering / 1999

Professional Registrations
Professional Engineer FL No. 62449

FDOT Maintenance of Traffic

construction plans for 3.1 miles of six-lane suburban roadway. Services include pavement design, bike lane design, access management, sidewalk design, drainage updates, utility coordination, structural design for steel pole box spans to replace existing poles, signing and pavement marking, signal and lighting upgrades, survey, and public involvement.

SR 688 (Ulmerton Road) from 49th Street to the East Roosevelt Boulevard Interchange, Pinellas County, FDOT District Seven. Project Engineer for milling and resurfacing of this six-lane to eight-lane facility in the densely populated area between Clearwater and St. Petersburg, south of the St. Petersburg-Clearwater International Airport. Services included roadway construction plans, typical sections, stormwater permitting, drainage modifications, ADA compliance, signing and pavement markings, signalization, construction estimates and final quantities.

SR 699 (Gulf Boulevard) from Tom Stuart Causeway to Colony Circle, Pinellas County, FDOT District Seven. Project Engineer for milling and resurfacing of 1.5 miles of existing four-lane urban section of roadway, minor drainage improvements, upgrade to ADA compliance, signalization and signing and pavement markings.

SR 574 (Dr. Martin Luther King Jr. Blvd.), from East of Kingsway Road to East of McIntosh Road), Hillsborough County, FL. Project Manager responsible for reconstruction design of 2.5 miles of an existing two-lane rural section of roadway to a four-lane urban and suburban facility. Designed roadway plans that included sidewalk on the north side of the road, horizontal and vertical geometry, typical section alternatives, drainage and stormwater management facilities, signing and pavement markings, signalization, lighting, traffic control plans, utility coordination, and public involvement.

SR 10A (US 90/Mobile Highway) at CR 99 (Beulah Road), FDOT District Three, FL. This intersection improvement project served to improve safety and operations at a high-speed intersection by introducing new signalization to protect left turn movements, additional turn lanes for capacity and advanced signing to improve awareness. SR 10A daily traffic is approximately 6,200 vehicles while CR 99 has about 3,200. R/W is limited with anticipated acquisition required to construct the improvements. This project required a delicate balance of reduced overhead utility impacts while balancing the need to minimize damage to historical oak trees adjacent to the roadway. Design also includes lighting, signing and pavement marking, utilities, and landscape.

SR 61 (Wakulla Springs Road) at CR 2204 (Oak Ridge Road), FDOT District Three, FL. As part of a design group of roundabout projects, the intent of this project was to design a roundabout intersection improvement at this location. SR 61 has about 6,000 vehicles per day while CR 2204 has about 2,000. Major traffic movements include the northbound through (AM peak) and southbound through (PM peak); therefore, our team reviewed the delay for opposing movements to help ensure appropriate vehicle gaps were available for minor movements. Percent of truck and bus traffic was negligible at this intersection; therefore, the ability to be more flexible with the use of the center apron to reduce the roundabout footprint became a viable design option to reduce tree and/or utility impacts. R/W acquisition was not expected for this location. An existing flashing intersection warning beacon was removed as part of the roundabout implementation, which was addressed within the temporary traffic control plans. Design also includes lighting, signing and pavement marking, utilities, and landscape.

Bee Ridge Road from Mauna Loa Boulevard to Iona Road, Sarasota County, Florida. Senior Roadway Engineer for reconstructing and widening Bee Ridge Road from two to four lanes. The project involved adding street lighting, sidewalks, bike lanes, resurfacing, traffic analysis, trails, and utilities upgrades. Four roundabouts were added along the project for access management and replacing aging signalized intersections.

Yulee Drive Sidewalk, Citrus County, FL. Project Engineer for design of two 6-foot-wide sidewalk segments along Yulee Drive. Improvements included shoulder pavement widening, signing and pavement marking including mid-block cross curves, audible/vibratory pavement marking, and drainage.

44th Avenue East from 19th Street Court East to US 301, Manatee County, FL. Engineer of Record for final plans and specifications for improvements to approximately one mile of roadway. Design consists of a four-lane divided urban roadway with a 22-foot raised median with curb and gutter, two 12-foot travel lanes in each direction, bicycle lanes in each direction, 5-foot sidewalks along both sides of the roadway, and a 120-foot-wide right-of-way. The project includes improvements to adjacent connecting roadways for overall traffic circulation. These improvements include two roundabouts along 38th Avenue East.



ANANDA KELLEY, PE

Summary of Experience

Ms. Kelley has 16 years of extensive experience in structural engineering. Her vast experience with FDOT bridge design includes continuous steel girder bridges, prestressed concrete girder bridges, and cast-in-place concrete bridges for multi-level interchanges, grade-separation interchanges, and coastal and riverine water crossings. In addition to bridge design, she also has experience with miscellaneous structures design, bridge rehabilitation, and existing bridge load ratings. Her miscellaneous structures design experience includes retaining walls, box culverts, signal structures, and bridge fender systems. In Ms. Kelley's consultant experience, she has primarily served the FDOT including all seven districts and Florida's Turnpike Enterprise, but has also served several local government clients including Pinellas County, Collier County, Manatee County, and the City of St. Petersburg. She is an accomplished project manager and currently leads Cardno's structures group.

Project Experience

Citywide Seawall Inspection, St. Petersburg, FL. Project Manager for inspecting, assessing and categorizing the entire length of the City-owned seawall. Currently Cardno is inspecting Phase I of the seawall project which includes approximately 13,000 linear feet of the City's overall 75,000 linear feet of seawall. Cardno structural engineers are collaborating with its in-house asset management staff to provide the City with a GIS-based data set of the wall assessments.

Roser Park Downstream Creek Wall Replacement, St. Petersburg, FL. Senior Project Manager for creek wall evaluation and design. Performed the inspection and assessment of the existing deteriorating walls and developed replacement plans for the downstream section of the channel. The walls will be replaced with sheet pile walls to limit excavation, reduce impacts to adjacent utilities, and maintain traffic. Due to the proximity of residences, sheet installation will only be allowed with the press-in method. Vibrating and driving methods will be prohibited. The final construction of the walls will match the existing geometry and aesthetics in order to fit within the historic neighborhood. Specific tasks included condition assessment/evaluation and detailed design of demolition and construction. Also providing bidding, on-site monitoring, and construction phase services.

Park Street Culvert Replacement. Pinellas County, Florida. Project Manager, Engineer of Record. This project included the design of a double barrel bridge culvert to replace an existing culvert along Park Street over the Admiral Farragut Academy Yacht Basin in St. Petersburg, FL. The culvert is located in an environmentally and historically sensitive area with several adjacent utilities including a water main, a gas line, a cable line, and overhead electric lines. In addition to the culvert, seawall, retaining wall, and critical temporary wall design, an environmental report, permitting, and assistance with utility coordination were required for the tidally located drainage culvert. Coordination was also required with adjacent historical landmarks including the Admiral Farragut Academy, a "Naval Honor School" located in the former Jungle Country Club Hotel. Other adjacent historical landmarks included Casa Coe da Sol, the last building designed by Florida architect, Addison Mizner, and the Jungle Prada Site, the 1528 landing site of Spanish explorer Panfilo de Narvaez.

Project Role

Structures Engineer

Profession

Professional Engineer

Years' Experience

16

Joined Cardno

2016

Education

MS / Civil Engineering / 2003

BS / Civil Engineering / 2001

Professional Registrations

Professional Engineer FL No. 65632

I-4/I-275 Downtown Tampa Interchange, FDOT District Seven. Ananda assisted with structural post-design services for this project that incorporated operational and safety improvements to the tri-level I-4/I-275 Downtown Tampa Interchange. Construction started in October 2002 and was completed in December 2006. The project included the addition of dedicated ramps to eliminate operational weaving problems. The addition of through-lanes midway through design provided compatibility with an adjacent project and improved capacity. Twenty-six bridges within the project limits were widened or replaced, including a new third-level seven-span continuous curved steel flyover structure. Many of the bridge widenings required innovative structural systems to maintain the existing minimal vertical clearance over local roads.

Park Street Culvert Replacement, Pinellas County, Florida. Project Manager, Engineer of Record. This project included the design of a double barrel bridge culvert to replace an existing culvert along Park Street over the Admiral Farragut Academy Yacht Basin in St. Petersburg, FL. The culvert is located in an environmentally and historically sensitive area with several adjacent utilities including a water main, gas line, cable line, and overhead electric lines. In addition to the culvert, seawall, retaining wall, and critical temporary wall design, an environmental report, permitting, and assistance with utility coordination were required for the tidally located drainage culvert. Coordination was also required with adjacent historical landmarks including the Admiral Farragut Academy, a "Naval Honor School" in the former Jungle Country Club Hotel. Other adjacent historical landmarks included Casa Coe da Sol, the last building designed by Florida architect, Addison Mizner, and the Jungle Prada Site, the 1528 landing site of Spanish explorer Panfilo de Narvaez.

US 19 (SR 55) from Whitney Road to South of Seville Boulevard, FDOT District Seven, Clearwater, FL. Structures Design for the reconstruction of US 19 to a six-lane limited access divided highway with two-lane one-way frontage roads on each side. A complex traffic control plan was required to maintain traffic during staged construction of the new bridges. The first three spans of the mainline bridge utilize FUB-72 beams and the last three spans utilize a three-span continuous steel box girder section, resulting in a total bridge length of 1,015 feet. The substructure consists of rigid frame piers with an inverted tee cap at the point of minimum vertical clearance. All of the piers are founded on 24-inch pre-stressed concrete piles. The frontage road bridges utilize pre-stressed deck panels with a cast-in-place concrete topping. Ananda performed geometry, substructure, and pre-stressed slab unit calculations.

Districtwide Load Ratings, FDOT District One, Various locations throughout Southwest FL. Project Manager of this contract. The intent of this contract was to provide up-to-date thorough load ratings for existing locally and state-owned bridges in Southwest Florida. Approximately 800 bridge load ratings were executed during the contract life. The bridge types included various pre-stressed concrete bridges, steel girder bridges, bascule bridges, timber bridges, pipe culverts, and box culverts. Assumptions were made based on historical FDOT structures standards, related bridges, and familiarity with historical FDOT practices, as design plans were not available for most of the structures. To meet an aggressive schedule, Ananda assembled multiple technical teams to perform the load ratings and effectively managed them to meet the FHWA deadline. She was also responsible for the project organization, correspondence, LRFR, and LFR analysis.

General Engineering Consultant (GEC), Tampa-Hillsborough County Expressway Authority (THEA), Tampa, FL. Structural Engineer for the HNTB GEC contract assisting with reviews and assistance with various design and construction projects. Specific tasks have included emergency response and repairs for a pre-stressed beam bridge exhibiting cracks in the beams and pedestals and design assistance with a parking cover structure for THEA's home office.

FEC Railroad All-Aboard Florida (AAF) EW Design, FL. Ananda served as EOR for five structures along the AAF Corridor. The structures included two Combi-Wall system tunnel structures, pre-stressed arch foundations, a reinforced concrete trench, and modifications and rail details for existing pre-stressed beam bridges. The installation of the Combi-Wall systems as bridges will be the first of their kind in the State of Florida. This project was an accelerated Construction Manager/General Contractor (CMGC) type contract for FEC with a 12-month schedule.

Palm Creek Culvert Replacement, Hernando County, Florida. Structural Quality Control Reviewer for replacement of a culvert carrying Palm Creek Drive over Palm Creek in Weeki Wachee. The structure consists of a single-barrel concrete box culvert with a span of 8 feet and a length of 40 feet. The project is currently near the end of the design phase and has a preliminary construction cost estimate of \$440,000.



MARK MODJESKI, PE

Summary of Experience

As Manager of Cardno's Transportation Planning and Traffic Operations Group, Mr. Modjeski oversees Cardno's transportation engineering, traffic signalization, and traffic operation design efforts. He has extensive experience in the areas of transportation engineering, traffic signalization, structural design of signal supports, construction planning and traffic signal design including the structural design of mast arms and strain poles. He has designed traffic monitoring sites for Florida Department of Transportation (FDOT) District Seven as part of roadway design projects. In addition to his design expertise, Mr. Modjeski has practical traffic equipment installation experience, having served for two years as on-site project manager for a local traffic signal, roadway lighting and electrical contractor. He holds IMSA Level II certifications in both traffic signalization and as a traffic signal electrician. He has completely designed or provided upgrade designs for over 400 signalized intersections within Florida.

Project Experience

Belcher Road ATMS, Pinellas County, FL. Project Manager for design of five dynamic message signs, 18 closed circuit television cameras, 11 miles of fiber optic communications, and upgrading of 19 signalized intersections. Project involved preparation of construction plans for expansion of the Pinellas County's ATMS.

Pinellas ATMS Stage I, Pinellas County, FL. Project Manager and Engineer of Record for plans development for the Pinellas Advanced Traffic Management System. The design included nine miles of fiber optic communications design, routing and device assignment. Device design included three dynamic message signs and 18 CCTVs. Eleven signalized intersections were upgraded to include video vehicle detection and 2070N controllers.

Tampa Road Operational and Safety Study, Pinellas County, FL. Project Manager for this study intended to identify operational measures aimed at reducing severe crashes and providing a safer driving environment through an arterial roadway section dubbed by the media as "Dead Man's Curve." Based on data collection, analysis and qualitative review by Cardno's transportation professionals, the County introduced channelization at several median openings along with a more robust signing and marking strategy. Part of this effort included public meetings moderated by Cardno to assess the local public's concerns.

District-wide Traffic Studies & Minor Design Contracts, FDOT District Seven. Project Manager and Engineer of Record for three consecutive contract terms over a nine-year period. Tasks included signal warrant analysis, intersection and corridor qualitative assessments, intersection operational analysis including development of alternative phasing strategies, crash analysis, benefit to cost calculations, school crossing studies, trail crossing studies, pedestrian safety studies, composite studies, interstate ramp wrong way inventory and recommendations study, curve ahead signing inventory and recommendations study, over 100 road safety studies, and LED intersection lighting analysis and concept plans. Project management activities included task work order preparation and execution, progress reporting and subconsultant management.

Project Role
Traffic/Safety/ITS Engineer

Profession
Professional Engineer

Years' Experience
32

Joined Cardno
1989

Education
BS / Chemical Engineering / 1987
AA / Fine Arts / 1985

Professional Registrations
Professional Engineer FL No. 54838

IMSA Traffic Signal Technician, No. BB21381

IMSA Traffic Signal Electrician II, No. BE21381

Affiliations
International Municipal Signal Association

Continuing Professional Traffic Engineering Services Contracts, Hernando County, FL. Project Manager and Engineer of Record for two consecutive contract terms over a nine-year period. Task work orders included the design of overhead reduced speed zone beacons, utility coordination, geotechnical analysis, mast arm structures design and power service design for Springstead High School; design of 1.5 miles of multi- and single-mode fiber optic communications, splicing diagrams and upgrades to the signalized intersections for both the legacy and future ATMS system along Elgin Boulevard; a traffic signal warrant study including traffic turning movement counts, and traffic reassignment for the Yontz Road extension; traffic signal design including survey, subsurface utility excavation, utility coordination, FDOT permitting, geotechnical analysis, drainage design, signing and marking plans and mast arm design for US 19 and Breakwater Boulevard; all-red and yellow clearance timings calculations for all county signals to bring them into MUTCD compliance; and fiber optic communications design for approximately 10 miles of the County's ATMS system for Zones 3, 6 and 8.

Professional Services for Transportation Engineering, Manatee County, FL. Project Manager and Engineer of Record for traffic signalization, signing, marking and lighting design for three consecutive contract terms over a 13-year period. Traffic signal designs including survey, geotechnical analysis, subsurface utility excavation, utility coordination, FDOT permitting, drainage, signing and marking, intersection lighting, ATMS, advance microwave detection, BlueTOAD, and mast arm structures design for Cortez Road at 59th Street; US 301 at Ft. Hamer Road; Cortez Road at 43rd Street; Cortez Road at 26th Street; Cortez Road at 86th Street; Gulf Blvd. at Marina Drive; 44th Avenue at 15th Street; 44th Avenue at 19th Street; US 301 at Haben Boulevard; Ft. Hamer Road at Golf Course Road; and Ft. Hamer Road at Mulholland Road.

ATMS/ITS and General Traffic Engineering Consultant Services Contract, Pinellas County, FL. Project Manager and Engineer of Record for multiple, contiguous contract renewals over 10 years. These ATMS projects included the design of dynamic message signs, closed circuit television cameras, fiber optic communications, splicing diagrams, power service conductor sizing, voltage drop calculations, upgrades to signalized intersections and utility coordination for their ATMS system. Projects included the design of 5 DMS, 18 CCTV, upgrades to 20 signalized intersections and 11 miles of fiber optic communications design for Belcher Road, 5 DMS, 8 CCTV, upgrades to 27 signalized intersections and 7 miles of fiber optic communications design for 66th St. N., 8 DMS, 7 CCTV, upgrades to 10 signalized intersections and 5 miles of fiber optic communications design for Alt 19.

Immokalee Road Traffic Technical Memorandum, Collier County, FL. Project Manager and Engineer of Record for the development of a Traffic Technical Memorandum to develop corridor improvements for 11 signalized intersections for Immokalee Road from US 41 to east of I-75 in Collier County. Efforts included data collection, intersection inventory, warrant analysis, crash analysis, development of Opening and Design Year traffic volumes, turn lane lengths, and intersection and diamond intersection phasing. The analysis also included the development of coordinated timings for three plans in three separate control sections.

Banc of America CDC, Encore Redevelopment, Tampa, FL. Manager of Cardno's Transportation Planning and Traffic Operations. Cardno is providing Civil and Environmental Engineering services for redevelopment of 40-acre former Public Housing complex immediately adjacent to downtown Tampa. This project includes all civil, planning, landscape/streetscape and environmental engineering for office, condo, hotel, retail, multi-family, and open-space/park improvements along with associated infrastructure. This neighborhood LEED project includes recycling stormwater for irrigation, solar panels for net metering, pedestrian friendly designs, recycled construction debris, and transit oriented development design features. This project was funded through a NSP-2 Federal Stimulus Grant.

Brandon Parkway, Hillsborough County, FL. Project Manager and QC Reviewer for design of a Lighting Plan set and Lighting Documentation along the 6.8-mile roadway segments of Brandon Parkway and Lakewood Drive. Also assisted on the intersection design and interconnect run for Brandon Parkway at Town Center Boulevard, Brandon Parkway at Lakewood Drive, Brandon Parkway at Pauls Drive (Functional Design), Brandon Parkway at Lumsden Road, Lakewood Drive at Brandon Main, Lakewood Drive at Oakfield Drive, and Lakewood Drive at SR 60.

US 19 from CR 578 to South of Toucan Trail, Hernando County, FL. Project Manager and QC Reviewer for design for new lighting from CR 578 to Spring Hill Drive as well as adjustments to the existing lighting from Spring Hill Drive to south of Toucan Trail. Replaced existing lighting due to roadway widening and regrading. Performed a Lighting Analysis Report from CR 578 to Spring Hill Drive. Also responsible for design of signing and pavement marking plans.



BRYAN ZARLENGA, PE

Summary of Experience

Mr. Zarlenga has more than 26 years' experience in the Site Development Industry. He serves as Practice Group Leader in Site Development within the Governmental and Infrastructure Division of Cardno. He specializes in all aspects of the development process including pre-design services, construction document preparation, permit expediting, constructability reviews, and project management for Clients within the Federal, Municipal, & Private Sectors. He manages a team of Project Managers, Engineers, Landscape Architects, Planners and Designers. His project management and leadership skills have enabled him to deliver projects on schedule and within budget, always focusing on sustainable solutions.

Project Experience

Marker 1 Marina, Dunedin, FL. Project Manager. Cardno provided the services necessary to redevelop 339 dry docks with clubhouse, dining rooms, restrooms, swimming pool, marina store, offices and retail sales for yacht sales and services. Cardno assisted in site design and permitting, providing significant support for planning services and public involvement to rezone the property. Key services included schematic design, parking analysis, conceptual site plans, construction management, land planning, civil engineering, landscape architecture, site circulation, stormwater design and permitting.

St. Petersburg-Clearwater International Airport Landside Improvements. Pinellas County, FL. Project Manager. Planning, design and permitting of a new \$13 Million landside improvements at the Airport including long term parking, short term parking, rental car parking, taxi and shuttle lot, future parking garage study, reverse access roadway, recirculation roadway, perimeter roadway, relocated main entrance, signals, static and dynamic signage, wayfinding, pedestrian walkways, pet relief areas, lighting, toll plazas and revenue collection. Utility Design and coordination with the all utility providers, including Pinellas County BTS (Communication), Pinellas County Utilities (Water), City of Largo (Sanitary Sewer) and all "soft" private utility providers. Extensive coordination with the adjacent FDOT Gateway Express roadway design build project to sequence parking, access and maintenance of traffic (Phasing) throughout construction of the airport project.

Oldsmar Trail – Bike/Pedestrian & Multi-Modal Transportation Enhancements Project, Pinellas County, FL. Project Director for proposed construction of a multipurpose walking / bicycle trail with boardwalks (Oldsmar Trail-Phases 1 through 5) throughout the City of Oldsmar, Pinellas County, FL. This 7.75 mile trail system travels through natural sections of the City, utilizes an existing Gas Transmission easement, and City Right-of-Ways to interconnect the City's extensive Parks and Recreational areas. This project was design in collaboration with private and public utility providers to determine the most cost effective design. Permitting was through SWFWMD, the City of Oldsmar, and FDOT. The FDOT LAP permitting process included submittals of construction plans, specifications, and bid quantities through the designated LAP Coordinator for approval by various FDOT Departments.

Public Facilities, Various Locations, FL. Project Director/Manager for numerous public facility planning and design projects including site design, concept planning,

Project Role

General Civil

Profession

Professional Engineer

Years' Experience

26

Joined Cardno

1998

Education

BS / Civil Engineering

BA / Business Administration

Professional Registrations

Professional Engineer FL No. 52167

permitting, technical specifications, contract administration, and construction management. Projects have included Parks, Schools, Fire Stations, Public Utilities, Bus Terminals, Municipal Buildings, and special use facilities. Major clients or projects include:

> Clearwater Mall Fire Station No. 49	> Clearwater NW Fire Station No. 51
> HARTline NW Transfer Center	> 78th Street Sports Complex
> New Port Richey Public Works Facility	> USF Juniper-Poplar Residence Hall
> JC Handley Soccer Complex	> Pinellas Suncoast Transit Authority
> Pinellas County Jail	> HARTline Netpark Transfer Center
> Pasco County Utility Admin. Building	> Pinellas County Emergency Responders Building
> Shimberg Park Soccer Expansion	> St. Pete/Clearwater International Airport Parking Lot Expansion
> Anchorage Park	> Clearwater Sand Key Fire Station No. 44

Veterans Affairs Medical Center (VAMC), Bay Pines Inpatient-Outpatient, St. Petersburg, FL. Engineer-of-record responsible for the master planning and civil engineering associated with the construction of a multi-level 178,380 GSF addition to the main hospital building located within the over 100-acre campus. This project will provide the capacity to meet the identified long-term care need in west central Florida and will align with current Main Hospital Building 100, for patient and interstitial floors. The structure will be designed to support a future additional floor to match the Main Hospital. In addition, there will be renovations to a Historic Building 1, modifications to the existing Central Energy Plant, relocation and construction of a New Warehouse Building, a Temporary Modular Village, and the relocation of approximately 400 new spaces. Cardno is responsible for all Environmental Assessments (EA, FONSI & SHIPPO), Civil Engineering and Landscape Architecture for the proposed improvements, including support for LEED Silver Certification. Significant coordination amongst the joint venture team VOA Ellerbe Beckett JV for issues like Pedestrian relocation, utility displacement, roadway relocations, site master planning, master storm water permitting, etc. makes this a very opportunistic project.

Pinellas County Emergency Responders Building, Clearwater, FL. Working in concert with architect, Mason Blau, Mr. Zarlenga served as Director responsible for overseeing Engineer-of-Record and Q/A-Q/C of the design, permitting and construction of the County's Public Works Emergency Responders and Traffic Operations Building. The 80,000 square-foot, LEED NC Gold certified building is a Category-5 hurricane resistant structure, is self-sustaining for up to 1 week without connection to the public power supply or utilities and is skillfully located on a 6-acre portion of the 20-acre Pinellas County Public Works and Highway campus. Cardno was responsible for providing pre-design master planning and site layout services, floodplain mitigation design, stormwater, pavement, grading and water and sewer civil engineering design services, landscape architecture and irrigation design, LEED application completion, permitting through local, state & federal agencies and construction management administration services. The project, which opened prior to the 2010 hurricane season, was completed ahead of schedule and on budget.

Pinellas Suncoast Transit Authority (PSTA), Pinellas County, FL. Project Manager for the new PSTA administration/operations/maintenance facility located on 35 acres in Pinellas County, Florida. The site included an administration building, maintenance building/garage, warehouse, parking, and fuel lanes for diesel, gas and compressed natural gas. Cardno provided civil engineering services including site design, stormwater design, utility design, off-site roadway improvements, off-site utility improvements, landscaping and irrigation, traffic studies and environmental permitting.

Sand Key Fire Station, Clearwater, FL. Project Manager instrumental in the design of this award winning 7,000-square foot, two-story fire and rescue facility located south of the Sand Key Bridge along Gulf Boulevard. Civil engineering plans included access and emergency signals, vehicle movements, drainage, utility relocations and design, grading and landscaping. Scope included permitting through such agencies as SWFWMD, Pinellas County Parks and the City of Clearwater.

Northwest Fire & Rescue Station No. 51, Clearwater, FL. Project Manager instrumental in the design of this new award winning 12,300-square foot, fire and rescue facility located along Overbrook Avenue at the intersection of Betty Lane in the North Greenwood neighborhood, which accounts for more than 25% of the city's working fires.



JAMES E. GODFREY, PLS

Summary of Experience

Mr. Godfrey has significant experience as a survey consultant for the Florida Department of Transportation (FDOT) including surveying and mapping for interstate projects, control surveys, design surveys, and expert witness testimony. Mr. Godfrey was involved in preparing and implementing the FDOT staff-hour survey form currently in use. During Mr. Godfrey's 36 years of survey experience, he has managed numerous continuing and miscellaneous contracts for municipalities across the state. Mr. Godfrey has a reputation of understanding clients' needs and furnishing required deliverables in a timely manner.

Project Experience

SR 694 (Gandy Boulevard), St Petersburg, FL. Project Surveyor for the preparation of preliminary and final construction plans for improvements to Gandy Boulevard from west of 9th Street to east of 4th Street, including widening the roadway to four to six lanes with urban interchange overpasses at major street crossings. Services included preparation of construction plans including surveys, roadways, structures, intersections, interchanges, geotechnical, drainage, signing and pavement markings, signals, lighting, utility relocations, landscaping, right-of-way maps, maintenance of traffic, cost estimates, permits, mitigation plans, and quantity computation books.

I-275 Section 2A Design Services, Tampa, FL. Project Surveyor for design of the first major upgrades to I-275 (Section 2A – Himes Avenue to East of the Hillsborough River) since the early 1960s. This complex project included 8-10 collector/distributor lanes, frontage roads, three interchanges, and 26 bridges in a 2.2-mile urban area of downtown Tampa. The scope of services included survey, roadway geometrics/design, structural design, drainage design, traffic design, noise-barrier analysis, utility coordination, permitting, and landscaping. Provided survey right-of-way mapping.

US 41 (SR 45) from SR 44 to SR 200, Citrus County, FL. Survey services included recovering geodetic baseline control on NAD 83 adjustment of 1990 for recovering and/or re-establishing the survey line on the Florida State Plane Coordinate System and assuring an error-free or closed survey line; staking and stationing the survey line at 100-foot intervals so survey line stations coincided with the Florida State Plane Coordinate System; updating existing topographic survey as needed for the limits of the project; locating any additional above-ground utilities; incorporating right-of-way information for entire project in final topography deliverable; and right-of-way mapping.

SR 679, FDOT District Seven, Pinellas County, FL. Project Surveyor for a PD&E study for proposed improvements to the Bayway Bridge. Scope included alignment, vertical control, design survey and wetland specific purpose survey.

SR 685, FDOT District Seven, Hillsborough County, FL. Project Surveyor for the design survey and right-of-way control survey for Florida Avenue (SR 685) from Kennedy Boulevard (SR 60) north to Martin Luther King Jr. Boulevard (SR 574).

SR 400 (Segments 2 and 3), FDOT District One, Polk County, FL. Project Surveyor for the design survey, preparation of a right-of-way control and right-of-way maps for Interstate 4 (SR 400) from the Memorial Boulevard east to SR 33.

Project Role

Survey/SUE/Right-of-Way

Profession

Professional Surveyor and Mapper

Years' Experience

36

Joined Cardno

2018

Education

BA / Business Management / 2000

Professional Registrations

*Professional Surveyor and Mapper
FL No. 4541*



SR 70, FDOT District One, Manatee County, FL. Project Surveyor for design survey and right-of-way control survey from I-75 (SR 93) east for 3 miles to Lorraine Road.

Florida Department of Environmental Protection (FDEP), Pinellas County, FL. Provided cross-sections for beach erosion along 35-mile stretch of beach in Pinellas County at 1,000-foot intervals.

General Engineering Consultant Services, West Florida, FDOT District Seven, Hillsborough, Pinellas, Pasco, Citrus, and Hernando Counties, FL. Survey Task Manager. This contract consists of consultant services that include surveying and mapping, support, project management, plans and design review, traffic studies, design element updates, project scheduling, contractual services, right-of-way acquisition, permitting and other specialized services as-needed for the District.

Pinellas Suncoast Transit Authority Bus Facility, Pinellas County, FL. Project Surveyor for detailed topographic survey of all of the paved surfaces scope including all pavement edges, joints, inlets, building finish floor elevations. This project was completed utilizing a Leica ScanStation capturing multiple 3D laser scans to collect detailed topographic information of the paved areas of the Pinellas Suncoast Transit Authority Bus Facility.

General Surveying and Mapping Services, Hillsborough County, FL. Project Manager. As part of this miscellaneous surveying and mapping contract for Hillsborough County's survey division, project assignments included design for water and wastewater improvements, photogrammetric control and topographic verification, as well as certified DTM surveys in Computer Aided Integrated Civil; Engineering and Surveying system. (CAICE) metric format for use in design surveys for water line construction, right-of-way surveys wetland jurisdictional surveys and horizontal and /or vertical data surveys. Also provided design/right-of-way mapping services for work orders under this contract.

As-Needed Surveying Services, Tampa Bay Water, FL. Project Manager. This multi-year contract consists of surveying and mapping services as needed for projects in Pasco, Pinellas, and Hillsborough counties. Professional land surveying services include preparation of legal descriptions, as well as property boundary, baseline control, aerial control, cross section, utility, right-of-way, and construction surveys. Services included elevations and topographic surveys using conventional methods as well as GPS with CADD and GIS.

Polk City Interm Waste Water Treatment Clearwater Beach Walk Planning and Design Services, Clearwater Beach, FL. Survey Task Manager. The Beach Walk project for the City of Clearwater Beach involved realignment and design of a six-block section of Gulfview Boulevard to provide a pedestrian-friendly environment that included curvilinear promenade adjacent to hotels, shops, and restaurants with outdoor seating. The scope of services consisted of roadway surveys, utility, drainage, and site design, urban design, and landscape architecture. Enhancements to the pedestrian environment included the pedestrian mall, roadway realignment, upgrades to neighboring roadways to re-direct commercial and residential traffic, planning design, a trail for hiking and biking, accent paving, interactive fountains, beach-inspired public art, traffic calming techniques, and the development of outdoor sidewalk cafes, restaurants, hotels, courtyards, balconies and seating areas.

Tampa International Airport Airfield Rescue and Firefighting Facility Architectural and Engineering Services, Tampa, FL. Surveyor of Record, provided surveying services for the construction of The Tampa International Airport Airfield Rescue and Firefighting Facility (ARFF). Services included establish control based on airport network, design survey and as-builts as required by the engineer of record.

SR 574 (MLK), Hillsborough County, FL. Project Surveyor for a 4-mile roadway resurfacing project. Services included alignment, horizontal and vertical control, set targets for photogrammetry and design survey in obscured areas.

US Business 41 / SR 685 (Florida Avenue), Hillsborough County, FL. Project Surveyor for a 1-mile roadway resurfacing project. Services included alignment, horizontal and vertical control, set targets for photogrammetry and provided design survey in obscured areas.

SR 595 (Seminole Boulevard), Pinellas County, FL. Project Surveyor responsible for the preparation of the design survey required to reconstruct a CSX railroad crossing. Services included preparation of a full topographic survey and DTM with cross sections provided at 25' on center.



HAMID FARAJI, PE

Summary of Experience

Mr. Faraji is experienced in highway design and considered an expert in drainage facility design for transportation projects. His drainage experience includes preparation and design of location hydraulic reports, pond siting reports, bridge hydraulic reports, scour analysis, stormwater collection system design, hydrology and hydraulic analysis, computer modeling, and cross drains design. He has extensive experience acquiring permits from the various water management districts and other federal and local agencies throughout Florida. Also, Mr. Faraji has managed and has been the engineer of record on several roadway/highway design projects .

Project Experience

General Engineering Services Contracts. Senior Drainage Engineer for a variety of general engineering services contracts with public sector clients. Duties have ranged from project manager, contract management, project oversight, technical support, public involvement, stormwater collection system design. Open and closed conveyance design, stormwater management facility design, environmental permitting, roadway design, development review, master planning and construction coordination. Clients include:

- > City of Clearwater
- > Hillsborough County
- > City of Seminole
- > Pinellas County
- > City of Oldsmar
- > Sarasota County
- > Manatee County
- > City of Tarpon Springs
- > City of Temple Terrace
- > City of St. Petersburg
- > City of Tallahassee
- > City of Tampa
- > Hernando County
- > Collier County

SR 60 (Gulf to Bay Blvd) from Court Street/Highland Avenue to West of Damascus Road and from Court Street/Highland Avenue to West of Bypass Drive, Pinellas County, Florida. Project Manager and Senior Drainage Engineer for drainage improvements and resurfacing along two segments of SR 60. Project involves rehabilitation of the storm sewer system, pipeline replacement, addition of new drainage structures to meet the spread requirements, modification to the curb and gutter to improvement drainage conveyance and to meet ADA standards.

Antilles Drive / Antigua Drive / Oakhurst Road Sidewalk and Drainage, Pinellas County, FL. Project Manager and Engineer of Record for the safety improvements of Oakhurst Road for the motorist, bicyclist and pedestrian. Also, the stormwater runoff sheet flowed across Oakhurst Road and flooded the properties on the west side. The project included construction of paved shoulder and new sidewalk and a major stormwater collection and conveyance system. Drainage study consisted of the development of a hydrologic and hydraulic model for the existing and proposed conditions. Proposed drainage improvements were analyzed to minimize street flooding during 10-year, 24-hour storm event and reduce the 100-year, 24-hour flood stage to below the finished floor of the residential properties. Drainage concerns have been identified within the following project locations: (1) drainage basin area discharging to the ditch on the west side of Oakhurst Road just north of Antiqua Drive; (2) limits of basin area are Martinique Drive on the north, Antilles Drive on the east Montego Drive on the south and Oakhurst Road on the west, and (3) flooding of residential properties along the west side of Oakhurst from Montego Drive to Martinique Drive.

Project Role
Drainage Engineer

Current Position
Manager, Roadway Drainage Group

Profession
Professional Engineer

Years' Experience
32

Joined Cardno
February 2000

Education
BS / Civil Engineering, 1986

Professional Registrations
Professional Engineer FL No. 51581

SR 688 (Ulmerton Road) from 49th Street to the East Roosevelt Interchange, Pinellas County, FL. Drainage Engineer for milling and resurfacing of this six-lane to eight-lane facility south of the St. Petersburg–Clearwater International Airport. Services include roadway construction plans, typical sections, stormwater permitting, drainage modifications, ADA compliance, signing and pavement markings, signalization, construction estimates and final quantities.

Park Boulevard Drainage Improvements – Phase III, Basin C, Pinellas Park, FL. Senior Drainage Engineer for preliminary and final design of drainage and water quality improvements jointly funded through the SWFWMD Cooperative Funding program and the FDOT Local Agency Program. Separated Park Boulevard drainage from other flood prone areas. The targeted approach maximized drainage and water quality improvement while reducing estimated construction costs from \$12M to \$5M. Also included was replacement of triple 60" CMP cross-drain with a double 5-foot by 10-foot box culvert.

Channel 2 Culvert Upgrades at Gandy Boulevard, Pinellas Park, FL. Senior Drainage Engineer for preliminary and final design of an additional 5-foot by 10-foot box culvert barrel under busy Gandy Boulevard. The additional culvert capacity will reduce flood potential in PPWMD Channel No.2 drainage basin. Coordinated operational modifications to SWFWMD control structure in order to abate downstream impacts. Coordinated permitting through SWFWMD and FDOT. Developed a MOT plan that avoided lane closures.

Tarpon Woods Stormwater Feasibility Study, Pinellas County, FL. Senior Drainage Engineer for investigation of drainage alternatives intended to prevent severe and extended duration street and yard flooding in the Tarpon Woods neighborhood. Identified a set of cost effective interim measures are being pursued by the County in advance of comprehensive Brooker Creek watershed improvements by SWFWMD. The interim measures will greatly enhance drainage level of service for most storm events.

Pop Stansell Stormwater Treatment and Habitat Restoration, Pinellas County, FL. Senior Drainage Engineer to improve the quality of non-point source stormwater runoff from the Sutherland Bayou drainage basin and to provide coastal and upland habitat within the coastal basin. Project includes construction of a stormwater treatment pond, habitat restoration, invasive plant removal and extension of the 8th Street cross-drain.

City of Largo Sidewalks Enhancement, Largo, FL. Senior Drainage and Environmental Permitting Engineer for sidewalk enhancements along Adrian Avenue from Indian Rocks Road to Trotter Road and Gladys Street from Hillsdale Avenue to Dryer Avenue as part of FDOT District Seven's Districtwide Enhancement Project. Project encompasses replacing the existing open drainage system with new stormwater collection and closed conveyance systems in order to construct sidewalks, American with Disabilities Act (ADA) improvements, pedestrian signals and improved crosswalks.

Commerce Boulevard and Douglas Road Intersection Improvements, City of Oldsmar, FL. Senior Drainage Engineer for this intersection improvements for the Commerce Boulevard and Douglas Road in the City of Oldsmar. The project converted the four-way stop condition to a mast arm signalized intersection. Improvements included: widened approaches, drainage improvements, rural cross section to urban cross section with curb and gutter, and ADA compliant ramps.

SR 580 from Air Cargo Road to Lee Place, Hillsborough County, Florida. Senior Drainage and Environmental Permit Engineer for design and preparation of construction plans for 3.1 miles of six-lane suburban roadway. Responsibilities included modification to the existing stormwater collection and conveyance systems, modification to the existing treatment facilities to accommodate the addition of sidewalk on both sides, and environmental permitting.

Columbus Drive Extension, Hillsborough County, FL. Drainage Project Manager for this design-build project involving design and construction for a new 0.9-mile-long, four-lane divided urban roadway. The project included four-foot-wide bicycle lanes in each direction and a six-foot-wide sidewalk along both sides of the roadway. The project also included underground drainage, stormwater treatment ponds, floodplain compensation, signing and pavement marking, roadway lighting and traffic signals, and an environmental mitigation area. This project received the Florida APWA Project of the Year Award for 2010.

Elgin Boulevard (CR 572), Hernando County, FL. Senior Drainage Engineer responsible for stormwater collection and conveyance system design, hydrology and hydraulic analysis, stormwater management facility design and preparation of the environmental permitting for widening 0.8 miles from a two-lane rural to a four-lane divided urban section.



JACK RICHERT, PE

Summary of Experience

Mr. Richert has 10 years of experience in the design and construction engineering and inspection fields. He has served as a Highway Designer on Design Build projects and as an Inspector, Senior Inspector, Assistant Project Administrator and Project Engineer on Construction Engineering and Inspection contracts. He offers diversified experience in the field and management of day to-day CEI operations.

Project Experience

CEI General Engineering Consultant, Florida Department of Transportation District Seven, Project Manager Conrad Campbell 813.242.2463. Project Manager for this contract that provides administrative and engineering services professional support to the District Construction Office including the following services: constructability plan reviews, schedule and claims support, public information, utility coordination, final estimates support, compliance office support and various administrative services. This support is performed throughout District Seven involving all of the Resident Offices as well as the District Office.

- Gateway Expressway Design-Build, Florida Department of Transportation District Seven, Project Manager Conrad Campbell 813.242.2463.**
- > City of Clearwater
 - > Hillsborough County
 - > City of Seminole
 - > Pinellas County
 - > City of Oldsmar
 - > Sarasota County
 - > Manatee County
 - > City of Tarpon Springs
 - > City of Temple Terrace
 - > City of St. Petersburg
 - > City of Tallahassee
 - > City of Tampa
 - > Hernando County
 - > Collier County

Seven, Project Manager Conrad Campbell 813.242.2463. Project Manager for this design-build project that includes construction of a limited-access, elevated toll facility connecting the south end of the Bayside Bridge to 118th Avenue and US 19 to I-275, and widening I-275 to incorporate express lanes. The project will include the construction of 27 bridges, mechanically stabilized earth (MSE) walls, concrete and asphalt paving, electronic toll gantries, lighting, signing, and Intelligent Transportation Systems (ITS) installations.

I-275 Design / Build from SR 60 to Hillsborough River, Florida Department of Transportation District Seven, Project Manager Duane Aldrich 727.287.8275. September 2015 - Present. Project Engineer for this \$215M design-build project included reconstruction of all southbound lanes and bridges, as well as northbound lanes and bridges from SR 60 to Himes Avenue. The improvements to I-275 include construction of 18 new bridges and widening three other bridges, as well as modifying ramps and interchanges to improve traffic flow. Construction consisted of Florida Bulb-T girder bridges on pile and drilled shaft foundations, MSE walls, drainage installation, lighting, signalization, and architectural features.

SR 26 at I-75 Operational Improvements Alachua County, FL. Cardno provided the control alignment right of way and design survey for to include subsurface utility engineering (designating and locating). In addition, Cardno provided the Utility Coordination and Constructability review of the design.

I-75 from North of SR 52 to Pasco/County Line, Design-Build, Florida Department

Project Role
Construction & Inspection Services

Current Position
Project Engineer

Years' Experience
10

Joined Cardno
2010

Education
BS / Civil Engineering / 2006
MBA / Finance and Management

Professional Registrations
Professional Engineer FL No. 73857

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of Transportation District Seven, Project Manager Tom Lay 813.242.2454. January 2014 - September 2015. Project Engineer for this \$47M design-build project that includes widening I-75 from four to six lanes, with three 12-foot-wide lanes in each direction. The project included adding lanes in each direction, resurfacing the existing lanes, extensive drainage construction, overhead signing, ITS installations and high-mast lighting.

I-4/Selmon Expressway Connector, Florida Department of Transportation District Seven, CEI Resident Engineer Conrad Campbell 813.242.2463. March 2010 - April 2015. Assistant Project Administrator for this \$389M ARRA project that consists of a limited-access interchange from the Lee Roy Selmon Expressway north along the west side of 31st Street to I-4. Construction consisted of segmental and Florida Bulb-T girder bridges on drilled shaft foundations, widening and deck replacement on the Selmon Expressway, MSE walls, drainage installation, lighting, signalization, architectural features and a state-of-the-art toll facility with all-electronic toll collection system that allows traffic to maintain highway speeds and maintenance of toll equipment without disrupting traffic.

Volkert & Associates, Inc., Tampa, FL. Highway Designer (February 2009 - March 2010). SR 80 from CR 833 to US 27, Hendry County, FL, Florida Department of Transportation District One. Roadway Designer for the widening of SR 80 from two lanes to four lanes and alignment improvements. SR 80 was designed on a new alignment to the north of the existing facility to provide two 12-foot lanes in each direction separated by a 64-foot grassed median, with 8-foot unpaved inside shoulders and 10-foot outside shoulders, five feet paved.

Volkert & Associates, Inc., Tampa, FL. Highway Designer (February 2009-March 2010). SR 80/US 27 Interchange, Hendry County, FL, Florida Department of Transportation District One. Roadway Designer. This existing US 27 intersection was relocated approximately 3,000 feet to the north and the existing intersection with US 27 became an elevated "T" interchange. Project scope included roadway and structural design, surveys, drainage, signing and pavement markings, utility relocation, signalization, lighting, landscape architecture, right-of-way mapping and legal descriptions, geotechnical, maintenance of traffic, cost estimates, permitting, and environmental mitigation.

HDR Engineering, Inc., Tampa, FL. Highway Designer (March 2007 to January 2009), I-75 Design-Build-Finance, Florida Department of Transportation District One. Highway Designer for the \$500M Mega construction project in southwest Florida that included widening I-75 from four to six lanes, from Colonial Boulevard in Fort Myers to Golden Gate Parkway in Naples. The project also included a new interchange at Immokalee Road in Collier County, four new bridges, and 22 bridge widenings. Responsibilities included horizontal and vertical geometric design, drainage design, roadside design, ROW layout, traffic maintenance, and construction cost estimating.

SR 559 Extension, Florida Department of Transportation District One, Polk County, FL. Roadway Designer for the half-mile project that runs from SR 655 to south of Derby Avenue in Polk County. The project extended the existing two-lane roadway to a new terminus at SR 655 (Recker Highway). The scope of work included roadways, structures, intersections, interchanges, utility relocation, right-of-way maps, cost estimates, environmental permits and mitigation plans and quantity computation books.

Dunn Engineering of Gainesville, Inc., Gainesville, FL. Intern (May to August 2005). Assisted in the preparation of construction plans for several projects in the field of land planning and subdivision design. Worked from topographic surveys in AutoCad to become familiar with the design of roadways, lot layouts, potable water, sanitary sewer systems and storm drainage. Performed field inspections to observe conversion of plans to finished product.



TERRY GRIFFIN, PG, CGWP

Summary of Experience

Mr. Griffin has over 35 years of experience conducting geologic and hydrogeologic investigations. As a senior project manager with Cardno, Mr. Griffin's responsibilities include the management of complex hydrogeologic and groundwater contamination assessment investigations, and remediation activities at numerous locations throughout the Southeastern U.S. He has conducted extensive research of chlorinated solvent assessment and remediation techniques, particularly DNAPL assessment techniques. His duties include management of complete site characterization efforts, remediation strategy development and system design, data evaluation and management, and optimization of ongoing remediation activities. He has extensive knowledge of RCRA and state programs. Mr. Griffin has served as project manager for numerous environmental site assessments and has written RCRA Facility Investigation (RFI) Work Plans and/or Reports, and Corrective Measures Work Plans and Studies for more than 80 solid waste management units. He has also managed several municipal wellfields in central Florida and has negotiated numerous permits ranging from municipal water supply, industrial water use, operation and closure of RCRA regulated units or facilities, and long-term care of municipal landfills. He has also managed the physical closure of such facilities/units.

Mr. Griffin has designed and implemented numerous multi-component remediation programs associated with chlorinated solvent, petroleum hydrocarbon, manufactured gas plant waste, and heavy metals impacts (including DNAPL remediation). Remediation technologies used include: vertical and deep horizontal recovery wells (trenched and directionally drilled), DNAPL recovery systems, dual-phase extraction systems, air sparge/soil vapor extraction, horizontal air sparge, de-watering and excavation, air stripping, adsorption, stabilization, in-situ chemical oxidation, surfactant enhanced bio-augmentation, and monitored natural attenuation. Pilot scale systems have also been tested for six-phase resistive heating, in-situ solidification (ISS), and self-sustaining treatment for active remediation (STAR).

Project Experience

City of Daytona Beach, FL, Former Clyde Morris Landfill Site, Daytona Beach, FL. Project Manager. Mr. Griffin is currently managing environmental assessment and remediation activities at this former landfill site, under the state Brownfields program. The site is impacted with substantial quantities of free product contamination related to former manufactured gas plant (MGP) waste. Innovative NAPL assessment techniques have been used to delineate free product, including FluteLiner, Sudan IV dye tests, and TarGOST (laser induced fluorescence). Assessment is complete and free product recovery is underway while In-Situ Solidification (ISS), Self-sustaining Treatment for Active Remediation (STAR), and direct excavation pilot testing is being conducted.

Northwood Anchor Site – Treasure Coast Regional Planning Council, City of West Palm Beach, FL. Project Manager. Treasure Coast Regional Planning Council. West Palm Beach, FL. Mr. Griffin has managed Brownfields site assessment activities for this multi-block urban area, which previously included auto salvage facilities, gas stations, a dry cleaner, and various paint and body shops. A combined document Brownfields site assessment report and remedial action plan has been submitted to support planned

Project Role

Hydrogeological / Environmental

Profession

Senior Hydrogeologist

Years' Experience

36

Joined Cardno

2004

Education

MS / Hydrogeology

BS / Geology

Professional Registrations

Professional Geologist FL No. 135

*Certified Groundwater Professional -
AGWSE No. 350*



redevelopment of the area as a mixed use, commercial/ residential area. The RAP/ABCA has been approved and the air sparge/soil vapor extraction system remediation system began operation in December 2016. Cardno is currently completing O&M services and routine assessment and reporting.

Seaport Town Centre, LLC, Seaport Channelside Redevelopment, Tampa, FL. Project Manager. Synergy Properties, Inc. Tampa, FL. Responsible for FDEP Brownfields Site Assessment, FDEP Remedial Action Plan and FDEP Interim Source Removal, risk assessment and groundwater treatment activities in accordance with the Florida Brownfields program. This former City vehicle maintenance facility was impacted with petroleum hydrocarbons, select metals, and chlorinated solvents. Nine underground storage tanks were identified and removed and extensive shallow soils were excavated to support subsequent construction activities. Recovery and treatment of impacted groundwater was conducted to support construction of a six-story, 400+ unit apartment complex and parking garage. Coordination of environmental remediation and construction activities was a critical component of this project. Cardno recently completed Natural Attenuation Monitoring and a Site Rehabilitation Completion Order with conditions has been approved for the \$60 million redevelopment project.

Seminole Tribe of Florida, Red Barn Cattle Dip Vat Site, Brighton Indian Reservation, FL. The Red Barn site is impacted with exceedingly high concentrations of arsenic from former cattle dip vat operations. Cardno performed soil and groundwater assessment activities at the site and implemented an innovative full scale pilot remediation program that was not previously used for groundwater remediation. The BluePRO™ system is an ex-situ chemical oxidation and continuous backflow filtration system that precipitates and filters metal contaminants while requiring minimal maintenance. Removal rates of 85% arsenic have been obtained in this closed loop re-infiltration system, with minimal quantities of high concentration arsenic sludge being generated. System was shut down after an approximately one year demonstration period.

City of Casselberry Police Station Site, Casselberry, Florida. This former gas station site has extensive petroleum hydrocarbon contamination associated with former leaking USTs. Completed environmental assessment and air sparge/soil vapor extraction remediation system design and construction. Currently under active remediation and routine reporting.

Tarpon Springs Class III Landfill Long Term Care Permitting, Tarpon Springs, Florida. Project Manager. Long Term Care Permit Renewal, monitor well replacement and routine groundwater monitoring report preparation and submittal. LTC permit was renewed in 2012, with revisions to groundwater and gas monitoring programs, emergency response, cap and cover maintenance, and other relevant support documentation. Mr. Griffin was also involved in a landfill redevelopment feasibility study for this landfill, a prospect that remains under consideration by the City of Tarpon Springs. Mr. Griffin is currently performing semiannual reporting for this landfill site and is evaluating permit modifications for the movement of a scale house/ weigh system onto the existing closed landfill site.

Former Clyde Morris Landfill Site, Daytona Beach, FL. Project Manager. Mr. Griffin is currently managing environmental assessment and remediation activities at this former landfill site, under the state Brownfields program. The site is impacted with substantial quantities of free product contamination related to former manufactured gas plant (MGP) waste. Innovative NAPL assessment techniques have been used to delineate free product, including FluteLiner, Sudan IV dye tests, and TarGOST (laser induced fluorescence). Assessment is complete and monitoring, free product recovery, and routine reporting is underway.

Embry-Riddle Aeronautical University, Daytona Beach, FL. Project Manager. Recently completed environmental and geotechnical evaluation of prior landfill site to support mitigation and redevelopment by ERAU. Approximately 3,500 tons of contaminated material were initially removed from the site, and areas where ponds and buildings are being constructed were excavated to a depth of 6 feet and the solid waste material was power screened so that residual screen material (RSM) could be evaluated and re-used on site. Approximately 3,100 tons of solid waste was removed from the site with approximately 80% RSM re-use achieved.

Joe DiMaggio Sports Complex/ Landfill, Clearwater, FL. Project Manager. Cardno conducted environmental assessment of groundwater and landfill gas (LFG) at this 38 acre, former Class I MSW landfill site for the City of Clearwater, Florida. Primary assessment were related to leachate migration and LFG management. Landfill gas mitigations measures were proposed.



MILES BALLOGG

Summary of Experience

Mr. Ballogg serves as the Brownfields Practice Leader and Economic Development Director for Cardno. He assists public and private sector clients with land redevelopment programming, assessment, and remediation, specifically in environmentally-blighted areas. Miles has been involved in the implementation of both federal and state Brownfields programs for over 20 years including during their inception. He is a strong advocate for environmental justice and has been recognized as the National Leader of the “Healthfields Movement” by utilizing Brownfields and other leverage resources to improve access to health care for underserved communities.

Miles provides comprehensive programmatic support, technical assistance, and project coordination for numerous Brownfield Redevelopment Projects utilizing EPA Assessment, Cleanup Multi-Purpose, and Cleanup Revolving Loan funding. He successfully assisted clients in obtaining over \$75 million in EPA Brownfields and other redevelopment-related grants and incentives. Miles has assisted more than 50 clients (including government agencies, non-profits, and private sector developers) with Brownfields consulting, grant writing services, and programmatic support to facilitate the transformation of environmentally-impaired properties into benefits to their communities.

Significant Projects

- > Treasure Coast Regional Planning Council (TCRPC) EPA Brownfields Assessment and Cleanup Revolving Loan Fund (RLF), Cardno Project Director
- > Central Florida Regional Planning Council (CFRPC) – EPA Assessment, Cleanup Revolving Loan Fund and Area Wide Planning Grant, Cardno Project Director
- > City of Clearwater – EPA Brownfields Assessment, Cleanup Revolving Loan Fund and Workforce Development, , Cardno Project Director
- > City of Cocoa EPA Brownfields Assessment, Cardno Project Director
- > City of Ft. Pierce EPA Brownfields Cleanup, Cardno Project Director
- > City of Gulfport EPA Assessment, Cardno Project Director
- > Pasco County EPA Brownfields Assessment and Cleanup, Cardno Project Director
- > City of Tampa EPA Brownfields Assessment and Cleanup, Cardno Project Director
- > Sarasota-Manatee Metropolitan Planning Organization (MPO) – EPA Brownfields Coalition Assessment Grant, Cardno Project Director
- > City of Lake Worth EPA Brownfields Assessment, Cardno Project Director
- > Seminole Tribe of Florida EPA Brownfields Assessment, Cardno Project Director
- > Anchorage Park Redevelopment Project , Village of North Palm Beach
- > Former HD King Power Plant Redevelopment Project, Ft. Pierce, FL
- > Rio Civic Center, City of Jensen Beach, FL
- > Pahokee Plaza Redevelopment Project, Pahokee FL
- > 480 U.S Highway 27 Redevelopment Project , City of South Bay
- > Northwood Redevelopment Project , City of West Palm Beach, FL
- > ENCORE Redevelopment project, Tampa, FL
- > Prospect Lake Redevelopment Project, Clearwater, FL

Project Role

Grant Administration

Profession

*Brownfields Practice Leader and
Economic Development Director*

Years' Experience

34

Joined Cardno

2001

Education

*BA / Environmental Science and
Biology*

- > Robinson Preserve Assessment – Manatee County
- > Lacochee Community Center Project – Lacochee, FL
- > Premiere Health Care Center- Lacochee, FL
- > Central Florida Health Care Facility – Mulberry, FL

Grant Funding and EPA Designation Support

- > Assisted in securing over \$75 million in Brownfields and other redevelopment grants and incentives since 2001 for Cardno Clients.
- > Initiated and works closely with the most successful Brownfields Grant Writing Team in Florida.
- > Obtained the only EPA Multi-Purpose Grant for the City of Tampa awarded in EPA Region IV (to date).
- > Obtained one of 10 nationwide EPA One Cleanup/Land Revitalization Designations for Pinellas County for the Cross Bayou Watershed.
- > Obtained one of two EPA Region IV Brownfields Petroleum Corridor Designations for the Sarasota/Manatee County MPO – Tamiami Trail Scenic Highway
- > Facilitated award of one of three nationwide NOAA Portfields Designations for the Tampa Port Authority.

Project Experience

City of Clearwater Brownfields Program, Clearwater, FL. Project Manager. Miles is providing the City with ongoing Brownfields Program Management. Developed an approved EPA Brownfields Quality Assurance Management Plan and provided technical assistance in the development of numerous QAPPs in accordance with the terms and conditions of EPA Brownfields Assessment Grants, provides technical assistance and project coordination for numerous Brownfield Assessments utilizing EPA grant funding, prepared property profile and US EPA MBE/WBE Utilization forms, developed grant workplans, provides required EPA Quarterly reports, and developed Florida Brownfields Site Rehabilitation Agreements for the City. Assisted in obtaining over \$2.5 million in EPA/ FDEP Brownfields & UST fields Assessment Grant Funding.

Pinellas County Brownfield Services, Pinellas County, FL. Cardno has been providing Brownfields Programmatic Assistance to Pinellas County since 2003. Our staff was instrumental in the initial development of the program, providing technical support to assist in the development of program documents approved by the Board of County Commissioners on June 17, 2003 establishing the County Brownfields Program. Cardno has also served as an approved Brownfields Site Assessment Consultant since 2005. Working closely with the County to obtain \$400,000 in EPA Brownfields Assessment funding and over \$90,000 in EPA One Cleanup/Land Revitalization Funding.

Gulfport Waterfront Improvements Grant, Gulfport, FL. Cardno Landscape Architects, planners and engineers coordinated with the City of Gulfport to generate an initial conceptual streetscape design for approximately 1,775 LF along Shore Boulevard. Based on the City's desired program elements, the conceptual design looked to improve the overall streetscape aesthetic feel and safety by adding traffic calming elements at intersections such as brick crosswalks and bulb-outs where there was existing on-street parking. A brick seat wall, improved sidewalk connections and landscaping were designed along the stretch of streetscape adjacent to the beach parking lot in order to create a visual separation between the pedestrian and vehicular components. Street lighting was proposed along the entire length of the streetscape that would be more pedestrian and "human" in scale.

City of Bartow Revolving Loan Fund Services, Bartow, FL. Project Manager. Cardno is providing RLF services under a subgrant from the CFRPC for the Environmental Cleanup of the historic Bartow Cigar Factory. A broad range of services have been provided including grant programmatic support, Davis-Bacon Act compliance, Qualified Environmental Professional and subcontractor oversight – Asbestos, lead-based pain, mole and pathogen abatement, and hazardous substance impacted soil removal concluding with confirmatory sampling.

Palm Beach County Revolving Loan Fund Services, Palm Beach, FL. Project Manager. Cardno has performed programmatic and QEP support for this RLF program and has assisted the County in the identification of key projects leading to the success of their Brownfields RLF Grant. Miles has provided technical assistance with several successful Brownfields RLF projects to date. The County received a \$1M USEPA Brownfields RLF grant in 2013 and a supplemental \$300k RLF in 2015. Cardno assisted the County with both RLF awards.

RICK BOWERS, PE, GISP



Project Role
GIS

Profession
Professional Engineer and
Geographic Information Systems
Analyst

Years' Experience
30

Joined Cardno
1998

Education
PhD Candidate, Water Resources

MBA / 2004

BS / Civil Engineering / 1991

Professional Registrations
Professional Engineer FL No. 50704

GISP FL No. 57194

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Summary of Experience

Mr. Bowers is the Director of GIS/Asset Management Services. He provides project management, including Work Order and Asset Management (WAM) implementations. He has extensive national and international experience for engineering applications such as:

- > Sanitary sewers system evaluations
- > Potable water master plans
- > Rate studies
- > Stormwater master drainage plans
- > Roadway right-of-way corridor preservation studies

Mr. Bowers has directed and managed multi-million dollar to small-scale GIS, asset management and engineering projects. His project management experience includes:

- > GIS and Asset Management Implementations
- > Administration of Consulting and Application Development Services
- > Monitoring customer issues
- > Client representation at Council/Commission meetings
- > Planning, managing, coordinating numerous projects from inception to completion
- > Extensive coordination of project activities with users, consultants, regulatory agencies and contractors.

Project Experience

Engineering, Town of Belleair, FL. Implemented ESRI's ArcGIS. Developed potable water, sanitary sewer, and stormwater management system layers, as well as electrical by inventorying assets via map-grade GPS.

Comprehensive Asset Management System, Hillsborough County, FL. Project Manager for the Hillsborough County Water Resources Department's Comprehensive Asset Management Project for which Cardno was a subconsultant to Oracle. Oracle is the developer of the electronic WAM selected by the Water Resources Department. Responsibilities included project coordination, hardware/software installation, database conversion, management report programming, business process review, and software training.

Computerized Maintenance Management System, St. Petersburg, FL. Project Manager responsible for migrating data from the Water Resources Department's existing software systems to Oracle's WAM. Provided data migration plan and detailed data mapping plan of each system. Developed MapGuide interface with WAM. Successful go-live in June 2008.

Enterprise Asset Management and GIS Services. Project Director, Manager or technical lead for performing needs analysis, data development and migration, business process re-engineering, legacy system integration, management reporting system development, mapping, application development, software installation or training for:

Infrastructure Inventory and Assessment Services, Hillsborough County, FL.

Served as the Program Manager for Hillsborough County's Water Resource Services Department Infrastructure Inventory and Assessment project where the objective was to field identify Department assets and provide an assessment on asset condition. Spatial location, asset attributes and condition data were migrated into the Department's work order and asset management system, called CAMS (Computerized Asset Management System) and its GIS; Oracle's WAM and ESRI's ArcGIS, respectively. The inventory was divided into three projects based on system feature type and the level of accuracy required. The below-ground gravity sanitary sewer system inventory and condition assessment project required GPS field data collected for manholes and pipes at survey-grade accuracy, CCTV and condition assessment per NASSCO's PACP and MACP specifications. About 5% of the pressure pipe, for potable water, force main and reclaimed water, was GPS-inventoried at survey-grade accuracy. The above-ground pressurized appurtenance inventory project required GPS field data collected for potable water, reclaimed water and wastewater above-ground features such as system valves, control valves, meters and hydrants at map-grade accuracy.

Engineering and Public Works, City of Temple Terrace, FL. Implemented ESRI's ArcGIS. Developed potable water, sanitary sewer and stormwater management system layers. Scrubbed Sungard HTE customer billing database to link to GIS parcel layer. Performed GIS needs assessment, desktop and Web application development, GIS analysis of engineering data, GIS software training, utilities infrastructure management recommendations and WaterGEMS hydraulic modeling and EPA/GASB 34 compliance.

Engineering and Utilities, City of Clearwater, FL. Implemented ESRI's ArcGIS. Developed potable water, sanitary sewer, reclaimed water and stormwater management system layers, as well as easements, right of way and gas pipelines. Performed GIS needs assessment, hardware/software integration, desktop and Web application development, GIS analysis of engineering data, GIS software training, data model development, utilities infrastructure management recommendations, InfoWorks CS hydraulic modeling and EPA/GASB 34 compliance.

Environmental Services, City of Largo, FL. Developed sanitary sewer layer in ESRI's ArcGIS.

Public Services City of Tarpon Springs, FL. Implemented ESRI's ArcGIS. Developed potable water, sanitary sewer, and stormwater management system layers by field inventorying assets via map-grade GPS.

IT, Engineering and Transmission & Distribution, City of Cocoa, FL. Performed GIS Needs Assessment. Implemented ESRI's ArcGIS. Developed potable water layer by field inventorying assets via map-grade GPS.

Water Resources, City of St. Petersburg, FL. Implemented Oracle's Work and Asset Management software. Responsible for migrating data from the Water Resources Department's existing software systems to Oracle's Work Order and Asset Management (WAM). Provided data migration plan and detailed data mapping plan of each system. Developed MapGuide interface with WAM. Successful go-live in June 2008.

Sanitary Sewer System Evaluation and Asset Management Program, City of St. Petersburg, FL. Development and analysis of GIS data to assist in the evaluation and recommendations for the reduction and elimination of sanitary sewer system overflows.

Sanitary Sewer I/I Program and Capacity Improvement Analysis, City of Largo, FL. Development and analysis of GIS data to assist in the evaluation and recommendations for the reduction and elimination of sanitary sewer system overflows. Prepared model-ready GIS datasets for InfoWorks CS hydraulic modeling.

Sanitary Sewer System Evaluation, Clearwater, FL. Development and analysis of GIS databases to assist in the evaluation and recommendations for the reduction and elimination of sanitary sewer system overflows (SSOs).

Utility Master Plan Update, Cape Coral, FL. Engineer responsible for preparing potable water, wastewater and reclaimed water hydraulic models and master plan report.

GIS, New Port Richey, FL. As-needed GIS services under the general contract for planning / engineering. The as-needed GIS services will be for the City of New Port Richey city limits and utility areas.