ARCADIS

STATEMENT OF QUALIFICATIONS

City of Hollywood, FL

Engineering Services for Stormwater Pump Station #16 Jackson to Jefferson Street Along SRA1A

RFQ-365-26-JJ

FEBRUARY 2026

Arcadis U.S., Inc.
150 Pine Island Road, Suite 315
Plantation, FL 33324
Tel: 954.761.3460
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www.arcadis.com

City of Hollywood Community Redevelopment Agency
Jean Joinville, *Procurement Manager*
2600 Hollywood Blvd., Suite 303
Hollywood, FL 33020

February 12, 2026

Re: RFQ-365-26-JJ, Engineering Services for Stormwater Pump Station #16 – Jackson to Jefferson Street along SR A1A

Dear Mr. Joinville and Selection Committee Members:

Arcadis U.S., Inc. (Arcadis) is pleased to submit our qualifications to provide professional engineering services for the City of Hollywood's Community Redevelopment Agency (CRA/City) Stormwater Pump Station #16 project located from Jackson to Jefferson Street along SR A1A. With more than 25 years of partnership, Arcadis remains committed to advancing the City's vision of economic opportunity, diversity, and innovation. This project directly supports the CRA/City's priority to enhance resilience, sustainability, and quality living environments for all residents. By improving flood mitigation along the barrier island, the initiative strengthens the CRA/City's long term resilience efforts and ongoing redevelopment of the City's Beach District.

A History of Partnership and Performance. Arcadis has gained a deep understanding of the City's operations, priorities, and community expectations. This long-standing familiarity enables us to accelerate project delivery, reduce onboarding time, and focus immediately on the technical complexities unique to this project. Our institutional knowledge and collaborative approach allow us to minimize disruptions, streamline coordination with stakeholders, and confirm solutions align with the CRA/City's project requirements and goals.

A Locally Led and Experienced Team. Our Project Manager, Paul Walansky, PE, and core team members are based in South Florida and bring extensive experience delivering stormwater pump stations for coastal communities, including projects on barrier islands and along SR A1A. Supported by mechanical, civil, electrical, and structural engineers, as well as experienced condition assessment, cost, permitting, and construction specialists, our team provides the CRA/City with continuity, strong institutional knowledge, and technical excellence for efficient, well coordinated delivery. With more than 400 professionals across nine Florida offices, including our Plantation office serving this contract, we offer responsive, locally informed support backed by robust in house expertise.

A Nationally Recognized Water Management Practice. Arcadis delivers comprehensive stormwater and water management solutions that integrate advanced engineering, digital innovation, and sustainable practices to address complex water challenges worldwide. Our expertise spans flood risk management, urban drainage, wastewater treatment, and resilient water infrastructure design, ensuring communities have reliable and safe water resources.

We appreciate the opportunity to present our qualifications for your consideration and look forward to the possibility of supporting the CRA/City's stormwater management and redevelopment efforts. Please do not hesitate to contact us should you have any questions or require further information.

Sincerely,
Arcadis U.S., Inc.

Leah Richter, PE
Principal-in-Charge
✉ Leah.Richter@arcadis.com | ☎ 954.599.7368

Paul Walansky, PE
Project Manager
✉ Paul.Walansky@arcadis.com | ☎ 561.702.4370

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Tab B.

Executive Summary

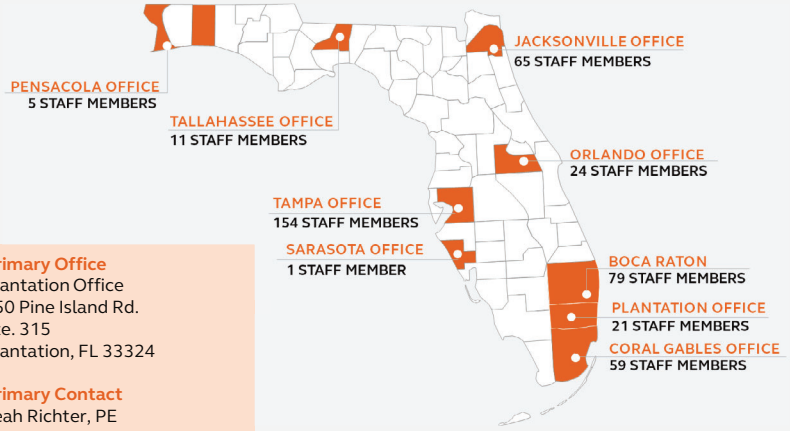
Tab B. Executive Summary

Rooted in our Dutch heritage of living with water, Arcadis brings over 135 years of expertise in delivering sustainable coastal and inland water solutions. This legacy of innovation and resilience has shaped our global approach and continues to guide our work in Florida, where we have proudly operated for more than 30 years. As a global leader in sustainable coastal climate resilience and stormwater management, Arcadis combines deep technical expertise with local insights to address the unique challenges and opportunities faced by the City. Our full-service consultancy seamlessly integrates national experts with local stormwater specialists, delivering comprehensive solutions to both current and emerging issues, supporting resilient communities like the City's Beach District.

Arcadis with our construction partner, provided the design and construction of the world's largest water management pump station, the Gulf Intracoastal Waterway Closure Complex.

For more than two decades, Arcadis has provided professional engineering consulting services under Continuing Contracts to support the City's water and wastewater Capital Improvement Program. This enduring partnership has given us valuable insights into the City's expectations for service quality, timeliness, and performance. Leveraging this institutional knowledge, along with our extensive stormwater expertise, we are well-positioned to support the CRA/City by providing Engineering Services for Stormwater Pump Station #16 – Jackson to Jefferson Street along SR A1A. Our deep understanding of regional and local conditions, combined with the capabilities of a large, diversified firm, enables us to deliver comprehensive solutions to the CRA/City. Our multidisciplinary approach provides the CRA/City with a unique, big-picture perspective from a trusted and committed partner. Our team excels at tackling complex challenges faced by public entities. Blending local expertise with insights from our national specialists, we bring fresh perspectives and innovative solutions that advance sustainable outcomes and improve quality of life.

Arcadis is Local



Primary Office
Plantation Office
150 Pine Island Rd.
Ste. 315
Plantation, FL 33324

Primary Contact
Leah Richter, PE
T: 954.525.2499
E: Leah.Richter@arcadis.com

Our South Florida practice is supported by over 400+ professionals among 9 Florida offices. Arcadis has performed a thorough review of resources in the State to ensure that local knowledge and established local relationships can be leveraged to bring the CRA/City exemplary services.

Company History and Background

Business Entity: Arcadis U.S. Inc., a Delaware Corporation, is wholly owned by Arcadis North America, Inc., a Colorado Corporation, whose sole shareholder is Arcadis USA, B.V., a Dutch company.

Background: Arcadis is a leading global natural and built asset design and consultancy firm working in partnership with our clients to deliver exceptional and sustainable outcomes through the application of design, consultancy, engineering, construction management, and project management services. Arcadis operates through four Global Business Areas (GBAs): Resilience, Places, Mobility, and Intelligence.

Founded in 1888, the firm's roots began when the organization was founded in the Netherlands as an association for wasteland redevelopment. Arcadis has evolved throughout the 20th century, expanding its global reach and range of service offerings through strategic initiatives and targeted acquisitions.

Key Individuals and Office Locations

Plantation, FL

Leah Richter, PE | VP, Principal in Charge

As Principal-in-Charge and South Florida Area Manager, Ms. Richter brings Arcadis' corporate commitment to the CRA/City and will provide support to the delivery team to ensure we meet contractual obligations and project goals. Her leadership supports our team's successful delivery of innovative, sustainable solutions for clients and communities in South Florida.

Ms. Richter is located in our Plantation office, just minutes from the City to provide rapid response to any request. She has a diverse background in civil engineering, program management, business advisory and financial consulting services. Also, she specializes in assisting municipal clients in South Florida with managing their planning, operational and capital program needs. She has worked with the City of Hollywood for over two decades.

Boca Raton, FL

Paul Walansky, PE | Project Manager

As Project Manager, Mr. Walansky will serve as the primary point of contact for the CRA/City, ensuring streamlined communication and efficient project delivery. His extensive local knowledge of South Florida hydraulics and hydrology, combined with his expertise in water and stormwater planning, design, and project management, will provide the leadership necessary to successfully deliver the project.

Mr. Walansky is an Arcadis Certified Project Manager and Principal Civil Engineer with professional experience in the management, design, and construction management of various coastal and water resource design projects. Mr. Walansky's engineering background includes inspection and condition assessment of water control structures, cost estimating, flood studies, pump station design, bridge scour analysis, economic analysis, retaining wall design, wetland restoration, reservoirs, flow equalization basins, stormwater treatment areas, public recreation area design and specifications.

Portland, OR

James O'Shaughnessy, PE | Mechanical – Pump Stations

Mr. O'Shaughnessy is a Principal Water Engineer with experience in design and construction management of stormwater, water and wastewater pump stations. He is a pump station design leader within Arcadis and specializes in large pump station and stormwater conveyance facility design, construction, and operations. Having delivered over 5000 cfs of pumping capacity, he is uniquely aware of common operational and maintenance challenges associated with large pump stations and stormwater conveyance facilities. He has a proven track record of efficiently delivering high quality multidisciplinary water and wastewater projects.

Boca Raton, FL

Tony Michuda, PE | Civil

Mr. Michuda is a principal civil/water resource engineer with more than a proven track record as design manager and project engineer for numerous public and private sector clients. He has extensive experience with the management, design and implementation of water resource and heavy civil infrastructure facilities for a variety of flood protection, dam, navigation lock, stormwater treatment and reservoir storage projects. Mr. Michuda's previous work with the South Florida Water Management District and various municipal clients enhances his expertise in addressing the region's water management challenges and opportunities.

Plantation, FL

Jose Custodio, PE | Conveyance

Mr. Custodio is a professional engineer with extensive experience in designing water, wastewater, and stormwater pipeline/conveyance projects. His expertise includes various trenchless technologies such as pre-chlorinated pipe bursting, horizontal directional drilling, jack-and-bore, compression fit lining, and cured-in-place pipe rehabilitation. His work spans planning, design, and permitting phases, and has previous working experience with the City. Additionally, Mr. Custodio brings valuable public sector experience, having served as a Project Manager for the City of Fort Lauderdale and as Public Works Director/Town Engineer for the Town of Bay Harbor Islands, Florida.

Conshohoken, PA

Michael DeVuono, PE, CPESC, LEED AP | Quality Assurance / Quality Control

Mr. DeVuono is a National Practice Lead for Stormwater Design and Engineering at Arcadis. A licensed Professional Engineer with 30 years of experience in water resources and stormwater engineering, he specializes in assisting public and private sector clients with stormwater conveyance and control measure design, right-of-way utility design, interior drainage engineering, flood mitigation design, erosion and sediment control design, public policy development, and capital planning.

Key Elements of the Proposal: Our Value to the CRA/City

Qualifications and Experience – A global perspective, with Local Understanding

Arcadis offers specialized experience and proven capability in the planning, design, and delivery of urban stormwater pumping and conveyance systems. Our team has successfully completed similar projects in coastal and flood-prone cities, consistently meeting client objectives for resilience, regulatory compliance, and public safety. Our proposed multidisciplinary team has successfully delivered innovative, resilient pump stations tailored to unique coastal and urban stormwater challenges. Leveraging advanced modeling, sustainable design principles, and local regulatory knowledge, Arcadis provides efficient, reliable, and cost-effective stormwater management solutions that protect communities and support long-term resilience.

Project Team - Local, Multidisciplinary and Experienced

Arcadis has national and international resilience, water management, and stormwater expertise that informs our work on sea level rise, storm surge, coastal risk, climate adaptive design, and Envision-aligned sustainability. Our team is led by South Florida-based staff who understand local expectations and are invested in the success of the CRA/City. We blend global best practice with local knowledge to deliver solutions that meet today's urgency and tomorrow's conditions.

Project Approach - Collaborative Delivery, Community-Focused Outcomes

Our stormwater pump station designs deliver sustainable solutions by combining resilient, climate-informed engineering with integrated innovation. We use advanced hydrologic and hydraulic modeling to size and site facilities for current needs and future sea-level rise, specify redundant, low-energy pumping and controls for reliability, and incorporate habitat-friendly and low-maintenance materials to reduce lifecycle costs. Coupled with smart monitoring and automated controls for optimized operation, and an emphasis on easy inspection and maintenance access, our approach minimizes environmental impacts while maximizing long-term performance and community benefit.

Our Trusted Partners

Arcadis shares the CRA/City's commitment to support Local / CBE / SBE businesses. We are committed to using the following local, well-qualified, and strategically selected certified subconsultants to meet project goals and objectives, specialty needs and provide additional depth of resources locally.

Dickey Consulting | Javier E. Bidot & Associates Land Surveyors & Consultants | Keith Engineering Inspired Design. | WIRX Engineering

Our subconsultants are discussed further in Tab H: Sub Consultant Information.

Arcadis United States	ENR 2024 Global Sourcebook Rankings			
At a Glance	Water Supply	#4 Water Supply	#3 Treatment and Desalination	#4 Dams and Reservoirs	#5 Transmission Lines and Aqueducts
7,000+ Staff	Sewerage & Solid Waste	#14 Sewerage and Solid Waste	#14 Wastewater Treatment	#7 Sanitary and Storm Sewers	
130+ Offices					

Tab C.

Firm Qualifications and Experience

Tab C. Firm Qualifications and Experience

Arcadis History and Background

Rooted in our Dutch heritage of living with water, Arcadis brings over 135 years of expertise in delivering sustainable coastal and inland water solutions. This legacy of innovation and resilience has shaped our global approach and continues to guide our work in Florida, where we have proudly operated for more than 30 years. As a global leader in sustainable coastal climate resilience and stormwater management, Arcadis combines deep technical expertise with local insights to address the unique challenges and opportunities faced by the City. Our full-service consultancy seamlessly integrates national experts with local stormwater specialists, delivering comprehensive solutions to both current and emerging issues, supporting resilient communities like the City's Beach District.

We possess a deep understanding of both regional and local conditions while offering the capabilities of a large, diversified firm to the CRA/City. Our team is skilled at addressing the complex challenges faced by public utilities today, including difficult rehabilitation projects, constrained budgets, future capacity planning, evolving customer expectations, and tight schedules. We collaborate closely with our clients to overcome these obstacles effectively. Combining local expertise with insights from our national specialists, we bring fresh perspectives and innovative solutions to the CRA/City.

Since our internal company was founded in 1888, Arcadis has served as a trusted partner to communities worldwide, developing innovative ideas and solutions for some of the most complex problems and projects. Your community is our community, and we are vested in the success of your projects and improving quality of life.

Arcadis at a Glance

Worldwide	United States
36,000 + Staff	7,000 + Staff
30+ Countries	130 + Offices

Arcadis Generates **Over $5 Billion** in Revenues

Firm Ownership

Arcadis U.S., Inc., a Delaware Corporation, is owned 100% by Arcadis North America, Inc., a Colorado corporation.

Project Office (Located less than 20 minutes from the City)

150 S. Pine Island, Suite 315, Plantation, FL 33324

Corporate Headquarters & Website

630 Plaza Drive, Highlands Ranch, CO 80129 | www.arcadis.com

Contact Person

Leah Richter, PE, VP, Principal-in-Charge | 954.599.7368 | Leah.Richter@arcadis.com

Organizational Structure

Arcadis U.S., Inc. is a corporation registered in the State of Delaware, and a subsidiary of Arcadis N.V., a Dutch company (founded in 1888).

Experience with the City

Arcadis has over 25 years of experience working with the City of Hollywood. Beginning in the early 2000's, Arcadis has worked closely with the City in supporting its mission of delivering clean, safe drinking water to the City's residents and customers.

From locating and permitting of new Biscayne and Floridan wells, to upgrading the WTP's treatment to leverage advances in technology, Arcadis has helped the City navigate growth and continually updated regulations. As a leader in the water industry, Arcadis works closely with Federal and industry to help shape policy and anticipate future needs.

In the last 5 years, the value of Contract Awards to Arcadis is approximately $5,525,000. Recent successes and completed projects with the City includes:

1. Design and Construction for the HSPS upgrades
2. Hydraulic Modeling and System Calibration Updates
3. Condition Assessments of all Water Facilities assets
4. Condition Assessment of all Linear Assets
5. 4-Log BODR and Pilot Testing (DBPs)
6. Currently providing SRF funds support
7. Water System Master Planning through 2045 and beyond (Completed 2025)
8. Pilot Testing and BODR development for MS/RO Facilities
9. WTP Filter Upgrades Evaluation
10. AWIA Risk and Resiliency Assessment and Emergency Response Planning (currently providing 2025 Recertification Support)
11. Lead and Copper Rule Revisions Compliance Support
12. Hurricane and Emergency Electrical Outage Planning
13. ABPS Pump Station Upgrades (in bidding phase)
14. MIT Testing for IW-1

Over 25 years of partnership! Arcadis and the City of Hollywood have collaborated on engineering, design, and consultancy to enhance the quality of life for residents and visitors through resilient water systems.

Florida Licenses

Arcadis U.S., Inc. Engineering Firm License

Registry # 7917

PLEASE NOTE: Florida engineering laws changed on 10/1/2019 regarding firm licensure. Firms are no longer required to obtain a license, however, must qualify through a pe/officer. Information on the company will appear under that individuals license through the FL DBPR's site.

As we no longer are required to obtain and display a physical license, the Board requires we include our new registry number on any plans, documents, reports, etc.

Gus Suarez is the PE qualifier for the firm.

State of Florida
Department of State

I certify from the records of this office that ARCADIS U.S., INC. is a Delaware corporation authorized to transact business in the State of Florida, qualified on February 26, 1998.

The document number of this corporation is F98000001104.

I further certify that said corporation has paid all fees due this office through December 31, 2025, that its most recent annual report/uniform business report was filed on March 10, 2025, and that its status is active.

I further certify that said corporation has not filed a Certificate of Withdrawal.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Ninth day of April, 2025

Secretary of State

Tracking Number: 0329560727CU

To authenticate this certificate,visit the following site,enter this number, and then follow the instructions displayed.

https://services.sunbiz.org/Filings/CertificateOfStatus/CertificateAuthentication

Florida dbpr Department of Business & Professional Regulation

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LICENSEE DETAILS

10:51:46 AM 3/3/2025

Licensee Information

Name:	SUAREZ, GUSTAVO (Primary Name)
Main Address:	706 BRANTENBURG WAY LUTZ Florida 33548
County:	HILLSBOROUGH

License Information

License Type:	Professional Engineer
Rank:	Prof Engineer
License Number:	58189
Status:	Current,Active
Licensure Date:	02/01/2002
Expires:	02/28/2027

Relevant Experience

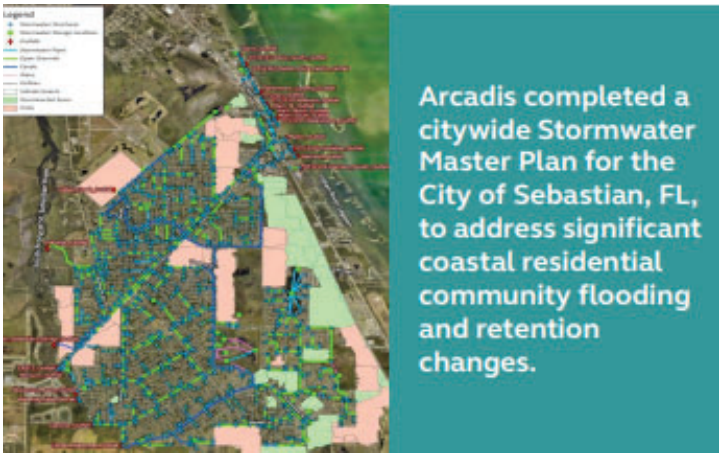
Stormwater

Managing stormwater is about both quantity and quality. Municipalities want to control the quantity of stormwater to minimize its impact on communities and ecosystems and manage the cost of meeting the water quality demands imposed by environmental regulations. Arcadis takes a more expansive view of stormwater management that emphasizes quality using stormwater as an asset. Sustainable stormwater management solutions must be cost-effective and watershed based. Arcadis offers a comprehensive approach tailored to specific watershed characteristics and integrating all related activities within the watershed. Our approach involves capitalizing on available stormwater for beneficial use and coordinating stormwater management with the management of ground and surface water.

Arcadis provides the CRA/City a network of local and national experts that have knowledge and experience gained from hundreds of stormwater projects comparable in scale, size, geographic features, and complexity to the CRA/City's proposed work. Our projects range from small neighborhood scale culvert and bioretention designs to large-scale design of flood mitigation and resilience projects. With increasing emphasis on resiliency, water quality, and reduction of stormwater runoff quantity, we deliver innovative and practical solutions that are easy to construct and reduce long-term maintenance costs.

We bring a wealth of knowledge and innovative stormwater solutions to the CRA/City. In the U.S., we are leading major stormwater projects like the Lower East Side Resiliency project in NYC, the Green City Clean Waters program in Philadelphia and the new Stormwater Erosion & Sediment Control/BMP Design Handbook in Virginia. In Florida, our ongoing and past work with the South Florida Water Management District, City of Sebastian, City of Tavares, and Pensacola, further demonstrate our investment in our local communities. Also. Arcadis' staff have contributed to the development of stormwater standards, manuals, and bring extensive regulatory knowledge.

Arcadis provides a range of services on stormwater, flood control and water quality improvement projects, including modeling, completion of conceptual and final designs and preparing plans, specifications, and cost estimates. Our modeling experience includes use of a range of H&H models including ICPR, SWMM, HEC-HMS and HEC-RAS, ICPR, etc.) and water quality models for pollutant/ nutrient load analysis. Our modeling team has developed an innovative storm inlet-centered hydrologic modeling approach for urbanized areas that allows for the quantification of flow attributed to different surface features and provides an ideal mechanism for incorporating GI units in the model to predict their benefit in terms of storm flow reduction. We also have strong experience working holistically with communities to reduce flooding issues and improve quality of life by linking potential stormwater improvements to community needs, including economic development and redevelopment, and community amenities such as recreation areas and open space.



Arcadis completed a citywide Stormwater Master Plan for the City of Sebastian, FL, to address significant coastal residential community flooding and retention changes.

Arcadis identifies system problems such as flooding, erosion, excess nutrients, undersized and/or deteriorated drainage facilities, street flooding/roadway overtopping, etc. and recommends solutions that involve traditional gray stormwater controls as well as stormwater control measures (SCM), including green infrastructure or low impact development (LID) alternatives that are technically feasible and can be used to mitigate flooding, minimize erosion and improve water quality. Arcadis has significant experience evaluating and developing neighborhood-level and watershed-level improvements using the latest models, GPS and GIS tools.

Pump Stations

Arcadis offers specialized experience and proven capability in the planning, design, and delivery of urban stormwater pump stations. Our team has successfully completed similar projects in coastal and flood-prone cities, consistently meeting client objectives for resilience, regulatory compliance, and public safety.

A recent example is the Ohio Creek Watershed Project in Norfolk, VA, where Arcadis served as the prime consultant for a $112 million federally funded flood resilience initiative. Our team led the evaluation, design, and implementation of stormwater pump stations integrated with green infrastructure, living shorelines, and tidal flood barriers. We used advanced hydrologic and hydraulic modeling to optimize pump station size and function, ensuring the system only operated when gravity drainage was not feasible, reducing energy use and lifecycle costs. The project involved extensive coordination with the City, residents, and multiple permitting agencies, as well as the integration of resilient features to address future sea level rise and storm surge. Arcadis facilitated community workshops, supported grant applications, and delivered construction documents that met HUD, USACE, and local regulatory requirements.

Arcadis is currently engaged as the prime designer for the Windsor Woods, The Lakes, and Princess Anne Plaza Flood Risk Reduction Program in Virginia Beach, where our team is currently engaged in the design and construction of two large pump stations, tide gates, and related flood barriers. This progressive-design build work required advanced stormwater modeling, integration with neighborhood infrastructure, and close coordination with regulatory agencies.

In Fairfax County, VA Arcadis designed the Huntington Levee and associated stormwater pump stations, protecting more than 160 homes from Cameron Run flooding. This project involved complex hydraulic modeling, major utility relocations, and comprehensive permitting. Our experience with the Huntington project demonstrates our ability to deliver pump stations with capacities ranging from 9 to 154 million gallons per day, tailored to fit urban constraints and client requirements.

Our team also led design efforts for the North/West Resiliency Project (The “Big U”) in New York City, developing flood protection systems that include stormwater pump stations engineered for climate adaptation and sea-level rise. These projects required advanced site investigation, multi-agency coordination, and stakeholder engagement, skills that Arcadis brings to every assignment in every locale.

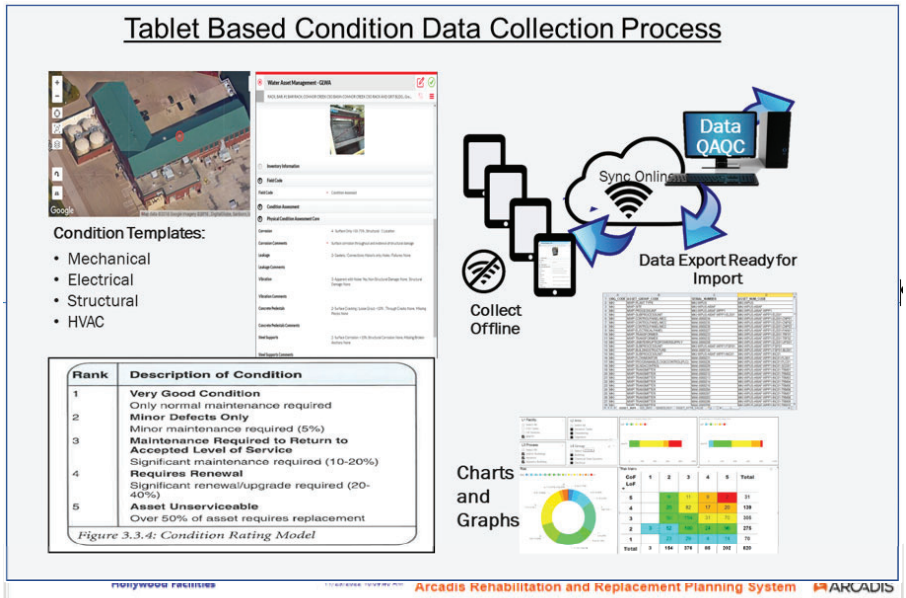
Our staff includes licensed engineers with direct experience on these projects, ensuring technical depth and project leadership drawn from real-world success. Arcadis is fully prepared to deliver the design, permitting, and construction support needed for the City of Hollywood’s Stormwater Pump Station 16, building on our track record of resilient infrastructure solutions in challenging environments.

Arcadis was selected by the City of Norfolk to advance the Ohio Creek Watershed Transformation Plan, providing water management strategies to reduce flooding risk and foster resilient, economically vibrant communities through strategic, replicable solutions.

Condition Assessment

Arcadis brings deep, demonstrated expertise in developing and executing condition assessment programs for infrastructure system assets (stormwater, water, wastewater). Our teams have delivered comprehensive assessments using desktop analytics, advanced field-testing methods, and artificial intelligence (AI), to evaluate asset condition, remaining useful life, and risk, supporting long term capital planning and regulatory compliance.

Arcadis regularly performs assessments to understand and assign value to existing equipment and facility conditions. The intersection of criticality with condition assessment defines the client's potential for risk, which can then be measured against the system's defined level of service goals to support and guide the overall decision process for investment in repair, upgrade, or replacement. Arcadis' experience in just the past 10 years, includes over 500,000 vertical assets and thousands of miles of linear and ancillary assets, including stormwater infrastructure. We have performed condition assessments for many large-complex utilities and municipalities including JEA, Miami-Dade Water and Sewer Department, City of Plant City, City of Hollywood, Toho Water Authority, City of Sebastian, Indian River County, Sarasota County, New York City DEP, City of Atlanta, Anne Arundel County, and City of Phoenix to name a few.



- Extend asset useful life and optimize renewal investments
- Target high risk assets with appropriate technologies
- Improve regulatory compliance and system reliability
- Produce defensible, data driven capital improvement plans
- Transition to long-term, sustainable asset management practices

Construction Administration

Arcadis offers comprehensive construction administration services that provide critical oversight and management throughout all phases of construction to ensure projects meet established standards, maintain high quality, and achieve on-time completion. Our expertise spans the full project lifecycle, from pre-construction planning, through construction execution, to post-construction closeout and commissioning.

Our South Florida team comprises highly experienced construction inspectors, administrators, and construction managers who act as an extension of the CRA/City. We work closely with your staff to manage daily construction activities, monitor contractor performance, verify compliance with contract documents, and proactively address issues to mitigate delays or cost overruns.

Key elements of our construction administration services include:

- **Pre-Construction Support:** Assisting with bidding, contractor evaluation, constructability reviews, and schedule optimization to set projects up for success.
- **Construction Oversight:** Conducting regular site inspections, progress reporting, quality assurance testing coordination, and documentation control to ensure adherence to design specifications and industry standards.
- **Contract and Change Management:** Managing contract compliance, processing pay applications and change orders, and facilitating clear communication between stakeholders to maintain project scope and budget.
- **Safety and Compliance:** Enforcing safety protocols and regulatory requirements to protect workers, the public, and the environment.
- **Post-Construction Services:** Coordinating punch-list resolution, facilitating final inspections, supporting commissioning, and delivering comprehensive closeout documentation.

Arcadis leverages best practices from our extensive portfolio of infrastructure construction projects, including complex stormwater, water, wastewater, and coastal resilience works. Our collaborative approach fosters innovation and efficiency, enabling us to deliver value-added solutions tailored to the CRA/City's unique needs.

By embedding our construction administration team within the project framework, we provide continuity and reliability, ensuring smooth communication and rapid response to challenges as they arise. With a proven track record of successfully managing projects in South Florida's demanding environment, Arcadis is well-equipped to support the CRA/City in achieving superior outcomes through this project.

Arcadis is currently partnering with Orlando Utilities Commission, Hillsborough County, Sarasota County, Gateway CDD, the City of Fort Lauderdale, and the South Florida Water Management District, among others in Florida to provide construction management, inspection, and other construction phase administrative and support services on a wide variety of pipeline, conveyance and water management projects.

Previous Project Examples

Project descriptions to follow demonstrate Arcadis' ability to satisfy qualifications and scope of service requirements.

C-139 Flow Equalization Basin Impoundment Design

South Florida Water Management District

Client Contact
Vijay Mishra, PE
3301 Gun Club Road
West Palm Beach, FL 33406
561.682.2810
vimishra@sfwmd.gov

Contract Term
2020 - Ongoing (Scheduled Completion April 2026)

Key Personnel
Paul Walansky
Tony Michuda
Melissa Pomales
Errol Dawkins
Brian Duane
Sopeark Chhea

Relevancy
- ☑ **H&H Modeling**
- ☑ **Pump Station Design**
- ☑ **Flood Management**
- ☑ **Civil & Site Engineering**

Arcadis was the designer of record for the C-139 Flow Equalization Basin Impoundment project. The Florida Department of Environmental Protection (FDEP) issued Everglades Forever Act (EFA) permits, National Pollutant Discharge Elimination System (NPDES) Permits and associated consent orders to the South Florida Water Management District (SFWMD) for the O&M of the Everglades Storm Water Treatment Areas (STAs). SFWMD is required to implement water quality improvement projects to assist existing Everglades STAs to achieve the Water Quality Based Effluent Limit (WQBEL) for total phosphorus concentrations in discharges. These projects are referred to as Restoration Strategies projects. One of these projects is the C-139 Flow Equalization Basin (FEB) impoundment and is intended to assist STA-5/6 to achieve the WQBEL and support Everglades ecosystem restoration.

The C-139 FEB impoundment project consists of 11,000 acre-ft of water storage including perimeter embankments, interior berms, a 690-cfs inflow pump station, internal inflow and outflow canals, outflow structure, access roadway, and a gravity seepage management system. The C-139 FEB is intended to assist in managing source basin runoff by attenuating peak flows and temporarily storing a portion of stormwater runoff prior to its being conveyed to STA-5/6.

Project Details

Arcadis analyzed alternative site layout options and was responsible for the civil site selection/ layout, which included a roadway relocation, demolition of existing structures, utility relocation, and erosion protection measures.

Arcadis oversaw topographic surveys to identify site features that needed to be moved or removed from the site. These features then were included in our demolition plan sheets.

Arcadis oversaw the geotechnical investigations and prepared boring logs, performed logging in gINT, and coordinated lab testing. The soil borings included field standard penetration testing. Samples were collected for laboratory analysis. Piezometers were installed for monitoring the groundwater elevations at the site. These geotechnical data were utilized in our analysis of seepage, stability, settlement, and shear strength.

Groundwater tests were performed to determine the hydraulic conductivity of the soil. Groundwater testing included slug tests in newly installed piezometers, shallow borehole constant-head tests, and a well pump test. Geophysical data also were collected from one deep boring/well to support groundwater modeling efforts undertaken by SFWMD.

Canal cross sections were prepared for use in hydraulic modeling. Hydrology and hydraulics studies included the preparation of hydraulic design calculations and performance of hydraulic modeling associated with the Deer Fence Canal and L-3 Canal and sizing

and design of the impoundment internal works, inflow and outflow canals, pump station, and control structures. Hydrologic and hydraulic modeling included HEC-RAS modeling, ICPR4 modeling of the internal works and dam breach analysis, ACES and STWAVE modeling for Probable Maximum Precipitation and Probable Maximum Flood, and computational fluid dynamics modeling of the inflow pump station.

Arcadis used dam breach analysis to verify the assumed hazard classification of Low Hazard which was identified and utilized the recommended design embankment height discussed in the wind and wave analysis. After waves break, some of the energy not dissipated by breaking would cause water to run up and overtop. If the overtopping rates exceed erosional thresholds of the embankments, then a dam failure could be possible. Another failure mode could be caused by piping through the earthen dam.

Arcadis developed multiple breach scenarios to capture the most significant impact from a dam failure. The breach scenarios were selected to identify a worst-case scenario on each face of the FEB. For each scenario, an overland flow region surrounding the FEB was defined to model the inundation of the surrounding area. Since the wave propagation within the FEB did not have to be simulated for the breach analysis, the FEB was represented as a stage-area node to increase model efficiency. The stage-area relationship was developed in ICPR4 using automated calculation based on the presence of the internal embankments.

Arcadis designed the impoundment embankment, which includes an internal baffle to maximize residence time and prevent short-circuiting.

Arcadis performed engineering studies, calculations, and technical analyses; developed designs and design reports; and prepared construction plans and specifications. We prepared the bid schedule, construction cost estimate, and construction schedule. The drawings were prepared using AutoCad Civil 3D and REVIT. SFWMD standard specifications were utilized by the design team. We used BIM for the coordination and integration of plan development.

Arcadis performed civil, structural, and mechanical design, of a 690-cfs inflow pump station including scour protection measures such as riprap and hard armoring and outflow (discharge) structure.

Arcadis designed a replacement for the G-711 structure in the Deer Fence Canal to add remotely operated slide gates, an intake bay, discharge bay, and dewatering capabilities. In addition, a temporary bypass for construction was also designed.

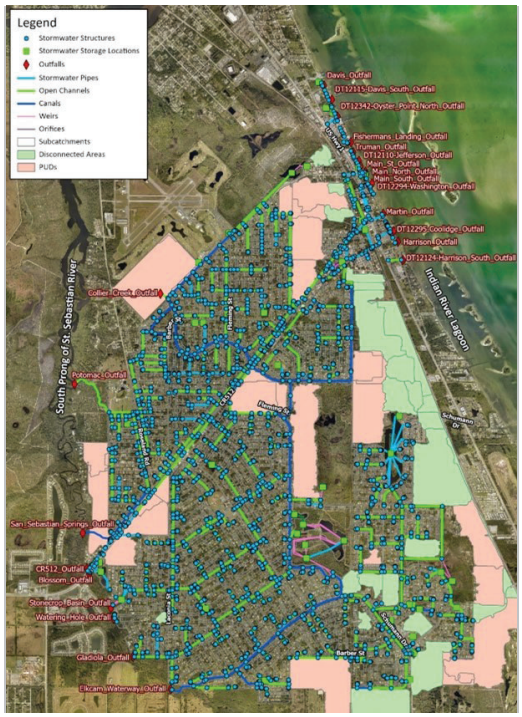
Arcadis supported SFWMD in the permit application process to USACE and the Florida Department of Environmental Protection by filling out applications and preparing responses to requests for additional information.

Arcadis currently is providing engineering services during construction services to assist SFWMD in keeping the project on a three-year construction schedule in accordance with the court-enforced consent decree.

Stormwater Master Planning and Professional Engineering Services

City of Sebastian, Sebastian, FL

Arcadis conducted a comprehensive analysis of the City's stormwater system infrastructure, O&M resources and practices, planned capital projects, and other information to develop a Stormwater Master Plan that is practical and feasible to implement, and complies with all regulatory requirements and local mitigation strategies in the sensitive Indian River Lagoon watershed.



Arcadis conducted a comprehensive analysis of the City's stormwater system infrastructure, O&M resources and practices,

planned capital projects, and other information to develop a Stormwater Master Plan that is practical and feasible to implement, and complies with all regulatory requirements and local mitigation strategies in the sensitive Indian River Lagoon watershed.

Several Arcadis teams worked in parallel with City staff on discrete project elements, including documentation review, field survey, GIS, hydrologic and hydraulic modeling, water quality analysis, operations and maintenance, capital projects, financial analysis, sea level rise, regulatory and permitting, and grant funding.

Arcadis developed a detailed Stormwater Asset Inventory in ArcGIS of over 5,039 inlets, canals, ditches, outfalls, pipes, weirs, orifices, and BMPs including asset photos, condition assessments, and hydraulic attributes.

A dynamic 1D Hydrologic and Hydraulic (H&H) computer model of the City of Sebastian stormwater network was developed to evaluate the system performance in response to various wet weather conditions and identify system capacity limitations. CIP projects that improve stormwater management were identified in coordination with the City based on field investigations, model results, and future sea level rise. A 10-year financial model of the Stormwater Department was created and used in the development of the Operations and Maintenance (O&M) Plan, 10-year prioritized Capital Improvement Plan, and grant funding analyses.

The final Master Plan was presented to and accepted by the City Council, and the City is now preparing for implementation.

Client Contact
Karen Miller
City Engineer
1225 Main Street
Sebastian, FL 32958
772.228.7056

Completion Date
2021 - 2023

Key Personnel
Melissa Pomales
Christopher Tilman

Relevancy
- ☑ **Stormwater Master Planning**
- ☑ **GIS Mapping**
- ☑ **H&H Model Development & Calibration**
- ☑ **O&M Plan Development**
- ☑ **Funding Analysis and Grant Management**
- ☑ **Condition Assessments**
- ☑ **Capital Planning**
- ☑ **Financial and Funding Analysis**

Ohio Creek Watershed Improvements Ballantine & Haynes Creek Stormwater Pump Stations

City of Norfolk, VA

Client Contact
Doug Beaver
Chief Resiliency Officer
810 Union St,
Norfolk, VA 23510
757.441.2602

Contract Term
2017 - Present

Key Personnel
Michael DeVuono
James O'Shaughnessy

Relevancy
- ☑ **Community Protection From**
- ☑ **Increased Frequency and Magnitude of Rainfall Events**
- ☑ **Protection against Increasing Flood Elevations**
- ☑ **Stormwater Pump Stations**
- ☑ **Flood Barriers utilizing Walls and Earthen Berms**
- ☑ **Tide Gate Design**

The City of Norfolk selected the Arcadis team under an IDIQ contract for its Citywide Coastal Flooding Study and Engineering Services to provide reviews of coastal and riverine flooding strategies, program gap analyses, and assistance in the Hampton Roads Dutch Dialogues.

The Dutch Dialogues provided workshops to merge water management approaches from the Netherlands with American expertise to address water problems in Hampton Roads.

The planning performed during the Dutch Dialogues provided a cohesive strategy that was available to the City of Norfolk in pursuing funding from the Community Development Block Grant (CDBG) – National Disaster Resilience Competition (CDBG-NDRC). The Arcadis team's initial scope was expanded to provide the planning and engineering support to the City to further develop the concepts from the Dutch Dialogues into the NDRC Phase II application which was successfully awarded for $120.5 million.

The City of Norfolk then selected the Arcadis team to perform the technical design services for the Ohio Creek Watershed Transformation Plan ("NDRCOhio Creek Project") to develop the application's conceptual design into permittable construction documents.

Through this project, the City seeks to not only reduce the risk of flooding, but also to build a resilient community by implementing. strategic approaches that address identified stresses such as nuisance flooding but also enhance the social fabric and economic vitality of the community. The team was tasked with developing replicable strategies that could be utilized throughout the region.

The NDRC – Ohio Creek Project consists of a series of water-management strategies to address acute flooding (storm surge), chronic flooding (storm water), climate change (SLR) and social vulnerabilities. The strategies include a combination of parcel and street level interventions to capture and store rainfall; increased stormwater conveyance capacity and pumping stations to provide interior drainage relief through open and closed system; prevention of tidal influences with tide gates; shoreline flood protection measures to reduce the risk of flooding from storm surge and sea level rise as well as a living shoreline feature to minimize erosion and increase environmental wellness. The City proposes to use these water- management activities as opportunities to improve the neighborhood by increasing neighborhood connectivity, adding new and improved natural habitat and increasing resilience to flooding.

The Arcadis team utilized a series of design work sessions to engage government resources, technical experts and stakeholders in the development of the adaptation alternatives. The alternatives were modeled and vetted for effectiveness and community acceptance before proceeding with permitting and detailed design.

The City selected Arcadis because of its expertise and alignment with the goals of the City for resiliency and watershed protection. The NLBC PS and the Ohio Creek project share many of the same key design features. This Arcadis team will bring the lessons learned from Ohio Creek to the NLBC PS and ensure success.

Huntington Levee and Stormwater Pump Station Design & Construction Services Fairfax, VA

Fairfax County Department of Public Works and Environmental Services, DC Metro/ Arlington; Tampa, FL; White Plains, NY

Fairfax County retained Arcadis to design a levee and drainage/ conveyance infrastructure, conduct H&H modeling and floodplain analyses, and design a stormwater pump station to protect the safety, health, and welfare of Huntington Community residents by mitigating the risk for catastrophic flooding during future severe storm events. About 160 homes, built in the 1940s and 1950s prior to current regulations, are located in the Cameron Run floodplain in Huntington. Major floods have inundated the low-lying neighborhood three times since 2003. Fairfax County citizens approved a bond to fund the project in November 2012.

The levee is a 2,800-foot-long earthen embankment, six to 11 feet tall, that is topped with a four-foot-high concrete I-wall. The width of the embankment base ranges from 43 to 68 feet depending on the height of the levee. The levee is 18 feet wide at the top of the embankment and includes an eight-foot wide asphalt pedestrian trail. The levee system required extensive site planning including relocation of a 42-inch FM, gravity sewers, and the development of stormsewers to guide flow to the PS.

The Pump Station includes two pumping facilities: the Low Flow Pump Station (LFPS) and Stormwater Pump Station (SWPS). The three submersible end suction pumps each have a capacity of 8.6 MGD (6,000 gpm) for a total capacity of 26 MGD. During dry weather conditions and low-intensity storm events, the LFPS wet well receives dry-weather flows (groundwater and residual storm system drainage) from the interior storm sewer system which are pumped from the LFPS to Cameron Run via a concrete discharge structure (including stepped velocity blocks) and concrete channel.

Client Contact
Teresa G. Lepe, PE
Deputy Director
Multiple Locations
703.246.5253

Contract Term
2019 - 2021

Key Personnel
James O'Shaughnessy
Errol Dawkins

Relevancy

- ☑ **Site Planning Including Relocation of 42-inch FM, Gravity Sewer, Water Lines, and Stormwater Infrastructure**
- ☑ **ENVISION Project Planning**
- ☑ **Pump Station Design for Multiple Flow Eventualities**
- ☑ **Physical Modeling for Improved Efficiency and Operations**
- ☑ **FEMA/USACE Federal and State Permitting**
- ☑ **Public Outreach Support**
- ☑ **O&M Manual Development and Training**
- ☑ **MOPO Design for Sewer Line Relocation**

The 4,600-square-foot SWPS is designed to maintain a peak protected-side water surface elevation of 8.0 feet during a 100-yr/24-hr storm event. Four 53.3 MGD (37,000 gpm) submersible axial flow pumps are installed in the SWPS pump room. The total 159

MGD design capacity is based on the simultaneous operation of three pumps, with the fourth pump provided as a stand-by. Two mechanical bar screens remove debris before water enters the SWPS wet well to protect the pumps and equipment and to increase the system's reliability during major storm events. The project also included Physical Modeling of the SWPS wet well to allow reduction in the facility space requirement and hydraulic analysis to evaluate ponding storage and pumping requirements and O&M Manual Development of Training.

Fairfax County Dept. of Public Works and Environmental Services 2018 Award of Excellence for Building Design and Construction (2018) for "exceptional work on the Huntington Levee project".

- *Sustainable Infrastructure (ISI) Envision Bronze Award (February 2019)*
- *National Capital Section American Society of Civil Engineers Sustainable Project/ Program of the Year for 2019*
- *ENR Mid-Atlantic Best Projects Award for Water, Environment and Safety 2020*

SELA #76 Pump Station #13

USACE New Orleans District, Orleans Parish, LA

Client Contact
Jennifer Wedge
Project Manager
4635 Urquhart St,
New Orleans, LA 70117
504.862.2711

Contract Term
2025 - Present

Key Personnel
James O'Shaughnessy
Brian Duane
Walter Baumy

Relevancy
- ☑ **H&H Modeling**
- ☑ **Mechanical Screening**
- ☑ **Pumping System Design**
- ☑ **Backflow Prevention and Outfall Design**
- ☑ **Stormwater Conveyance**
- ☑ **Bulkhead and Floodwall Design**

USACE awarded Arcadis the design of 1,800 cubic feet per second (CFS) expansion to the existing 4,650 cfs New Orleans Sewerage and Water Board (S&WB) Pump Station 13 and associated work that will be a part of the Southeast Louisiana, Louisiana (SELA) Project located in Orleans Parish, Louisiana. This project is an integral element of the Hurricane Storm Damage Risk Reduction System (HSDRRS) developed to protect the metropolitan New Orleans area from storm induced flooding. The work includes performing numerical and physical modeling on the Pump Station #13 intake (existing and proposed), project design, preparation of a detailed design report, construction cost and schedule, and production of construction documents and instructions to field personnel during construction.

Arcadis performed all the designs required for the pump station expansion, intake channel, hydraulic modeling of the pump station intake and discharge channels, discharge piping through a hurricane protection floodwall, fronting protection, modifications to discharge/intake, mechanical design, modifications to southern levee, modifications to existing building, roads, ramps, parking areas, fuel storage, fences and associated work. Design also include the relocation and enlargement of an Entergy Power substations and relocation and expansion of existing fuel tanks to power the existing diesel pumps and generators. Arcadis design team prepared all plans to re-route this piping through the existing facility. The construction will include the above items, demolition of existing items as necessary, the removal and replacement of street paving and curbs; construction of 2 temporary retaining structures for excavating next to the existing pump station and floodwall and utility relocations. The hydraulic design of the addition shall give due consideration to the impact on station operations during construction.

High Service Pump Upgrades

City of Hollywood, FL

Arcadis was selected by the City of Hollywood to evaluate and redesign the high service pumping system at the water treatment plant. The project consisted of replacing and reconfiguring the existing aging high service water pumps that were originally constructed in 1972. Replacement of the existing pumps was deemed necessary to maintain water delivery reliability and to improve energy efficiency. The original pumping system consisted of various sizes of constant speed pumps that ranged in size from 200 to 700 HP (3,000 to 14,000 gpm).

The improvements consisted of installing six (6), 400 HP, variable speed, 8,000 gpm pumps, associated electrical and mechanical improvements, and upgrades to the control system that will allow the City to maintain a consistent discharge pressure. The rehabilitation of the pump station included the replacement of the pump check valves and isolation valves. A new climate controlled room was added to house the VFDs and other electrical equipment.

Technical Innovations:

- Evaluation of SCADA information to determine the flow variability of the system for proper pump selection.
- Expansion of the existing SCADA control system necessary to automate the pump controls necessary to vary the pump speed in order to maintain a constant water discharge pressure into the water distribution system.

Arcadis was responsible for the full design, permitting, bid and award support, as well as construction administration services through startup/commissioning of the new pumping system.

Client Contact

Rares Petrica
Engineering Support Services Manager
Public Utilities Department
rpetrica@hollywoodfl.org
954-921-5623

Contract Term

2019

Key Personnel

Leah Richter
Eric Battle
James Callahan
Chris Tilman

Relevancy

- ☑ **Pumping System Design**
- ☑ **Project Coordination and Data Collection**
- ☑ **Alternatives Analysis**
- ☑ **Basis of Design Report**
- ☑ **30% Schematic Design**
- ☑ **Detailed Design Documents**
- ☑ **Permitting**
- ☑ **Final Design and Bid Documents**
- ☑ **Bid and Award Services**
- ☑ **Construction Administration**

Large Diameter Pipe Evaluation and Replacement Program

JEA, Jacksonville, FL

Client Contact
Susan West
Manager W/WW System Planning
225 N Pearl St.
Jacksonville, FL 32202
904.665.7980

Contract Term
2016 - 2022

Key Personnel
Greg Osthues, IAM
Viktor Ciesliek, PE, IAM

Relevancy
- ☑ **Condition Assessment, via NDT Methods, of Approximately 100 Miles of Ferrous Pipelines**
- ☑ **Condition Assessment Plans and Recommendation Reports**
- ☑ **Spot Testing with BEM and UT**

Arcadis, as the Program Manager, assisted JEA to develop and implement the Large Diameter Pipe Evaluation and Replacement Program (Program) focused on the risk assessment and capital planning for over 900 miles of water and sewer mains ≥16-inch diameter. Arcadis managed a multi-year non-destructive testing (NDT) program including multiple inspection technologies. NDT Length / Size / Material: ferrous mains (cast and ductile iron) tested in the Program included, approximately:

- 20 miles of water mains between 6-inch and 30-inch
- 80 miles of force mains and sludge mains between 6-inch and 54-inch

Permitting Requirements: permitting in the Program included City of Jacksonville, Jacksonville Port Authority, St. Johns Co., CSX Rail, Florida DEP, US Army Corps, and FDOT.

NDT Planning: for each year of the Program, Arcadis developed an overall NDT Plan in collaboration with JEA, including:

- Selecting NDT technologies considering pipe materials, accessibility, data resolution needs, deployment risk, operations impacts and cost.
- Applying a risk framework that incorporated desktop evaluations for likelihood and consequence of failure, previous pipeline failures from JEA's FMS database and operating history. Future CIP plans were also considered in recommending NDT.
- Arcadis walked all proposed pipelines to determine access needs. All appurtenances were identified including condition and need for cleaning or pump-out prior to NDT.
- Condition assessment plans included coordinating with technology vendors, permitting, traffic control and coordinating any operational procedures during testing with JEA.

Arcadis provided coordination and field oversight for all NDT activities and all services for a majority of the testing. In some instances, JEA provided excavation and dewatering.

NDT Technologies: the NDT applied to the ferrous mains included Pure Technologies' SmartBall®, Echologics' ePulse®, Broadband Electromagnetic (BEM) wall thickness, and Ultrasonic Thickness (UT) testing.

Team member Corrosion Probe also provided JEA Operations with training on ferrous pipeline corrosion mechanisms to better identify the root failure cause in the field.

Test Locations: spot thickness test locations for force mains were selected considering; results of the SmartBall® showing air pockets (unvented high spots), previous failure locations, bends and observed ARV conditions. Spot thickness test locations for water mains were based on random sampling to characterize pipe materials of different ages and on results of the Pulse® testing for general wall integrity. Multiple clock positions, beyond the crown, were obtained on larger mains where feasible.

CIP Development and Long-Term Funding Needs: each year of the Program, Arcadis assisted JEA to update the 5-year CIP utilizing the completed NDT to refine the overall pipeline risk assessment, recommend new projects and update project prioritization and packaging.

Beginning in Year 2 of the Program, Arcadis assisted JEA to develop 30-year funding projections, which were then updated each year.

Tab D.

Organizational Profile and Project Team Qualifications

Tab D. Organizational Profile and Project Team Qualifications

Organizational Chart

Through our experience working with the City for more than two decades, Arcadis understands the importance of selecting the right individuals to work on the team that will deliver this project for you. Our goal is to provide a team that combines the strongest of our local staff with the best and brightest technical experts from throughout the country. The result: A team led by staff based in Plantation backed by resources within Florida that can support delivery of your Stormwater Pump Station #16. Finally, from across the country, we have included experts spanning a broad range of services.

Team availability and resumes are provided below.

Key

***Licensed outside of Florida**
Subconsultants

CITY OF Hollywood FLORIDA

Principal-in-Charge
Leah Richter, PE

Quality Assurance / Quality Control
Walter Baumy, PE
Michael DeVuono, PE*, CPESC, LEED AP

Project Manager
Paul Walansky, PE

CORE SERVICES

MECHANICAL – PUMP STATION
James O'Shaughnessy, PE
Alex Spektor, PE

CIVIL
Tony Michuda, PE
Nhi Ngo, PE

STRUCTURAL
Renato Vargas, PE
Amir Irhayyim, PE

COST ESTIMATOR
Meghan Naumick, CEP, LEED GA

CONVEYANCE
Jose Custodio, PE
Rafael Fonseca, PE

ELECTRICAL
Eric Battle, PE, CDT
Van Nguyen

INSTRUMENTATION & CONTROLS
Inna Hely, PE
Tom Powell, PE

H&H
Chris Tilman, PE, BCEE, CDT
Alex Carlson, PE*

TRANSPORATION
Ryan Blaida, PE

BATHYMETRIC SURVEYING
Javier Bidot & Associates

PERMITTING
Francheska Seijo Montes, PE
David Trujillo, EIT

ARCHITECTURE AND LANDSCAPE ARCHITECTURE
Errol Dawkins, AIA
Debra Hernandez, RLA

HVAC
James Callahan, PE, CDT, LEED AP
Sopeark Chhea, PE*

CONSTRUCTION SUPERINTENDENT AND INSPECTION
Joe Russo
Eric Diaz

GEOTECHNICAL ENGINEERING
Kirk Lowery, PE
Armando Flores, EIT

ADDITIONAL SERVICES

SUBJECT MATTER EXPERT
Anwer Ahmed, PE, DWRE
Jeffrey Wing, PE DBIA
Brian Duane, PE

PUBLIC OUTREACH
Dickey Consulting

SURVEYING
Javier Bidot & Associates

SUE
KEITH

GEOTECHNICAL INVESTIGATION
WIRX

ENVIRONMENTAL
Tiffanee Grumbly

CONDITION ASSESSMENT & CCTV
Greg Osthues, IAM*
Viktor Ciesliek, PE

Team Member Availability

TEAM MEMBER	ROLE	AVAILABILITY FOR THE PROJECT (%)
Paul Walansky, PE	Project Manager	75%
Leah Richter, PE	Principal-in-Charge	25%
Walter Baumy, PE	QA/QC	20%
Michael DeVuono, PE*	QA/QC	20%
James O'Shaughnessy, PE	Mechanical Pump Station	65%
Alex Spektor, PE	Mechanical Pump Station	65%
Tony Michuda, PE	Civil	50%
Nhi Ngo, PE	Civil	70%
Renato Vargas, PE	Structural	60%
Amir Irhayyim, PE	Structural	70%
Megan Naumick, CEP, LEED GA	Cost Estimator	50%
Jose Custodio, PE	Conveyance	65%
Rafael Fonseca, PE	Conveyance	70%
Eric Battle, PE, CDT	Electrical	65%
Van Nguyen	Electrical	70%
Inna Hely, PE	Instrumentation & Controls	65%
Tom Powell, PE	Instrumentation & Controls	50%
Chris Tilman, PE, BCEE, CDT	H & H	60%
Alex Carlson, PE*	H & H	70%
Ryan Blaida, PE	Transportation	50%
Francheska Seijo, PE	Permitting	65%
David Trujillo, EIT	Permitting	70%
Errol Dawkins, AIA	Architecture and Landscape Architecture	50%
Debra Hernandez, RLA	Architecture and Landscape Architecture	60%
James Callahan, PE, CDT, LEED AP	HVAC	50%
Sopeak Chhea, PE*	HVAC	70%
Joe Russo	Construction Superintendent and Inspection	70%
Eric Diaz	Construction Superintendent and Inspection	60%
Kirk Lowery, PE	Geotechnical Engineering	55%
Armando Flores, EIT	Geotechnical Engineering	70%
Tiffanee Grumbly	Environmental	65%
Debra Hernandez	Landscape Architecture	50%
Greg Osthues, IAM*	Condition Assessment and CCTV	40%
Viktor Ciesliek, PE, IAM	Condition Assessment and CCTV	50%

Resumes for all team members follow this page.

ARCADIS

Paul Walansky, PE

Project Manager

Mr. Walansky is an Arcadis Certified Project Manager and Principal Civil Engineer with professional experience in the management, design, and construction management of various coastal and water resource design projects. Mr. Walansky's engineering background includes inspection and condition assessment of water control structures, cost estimating, flood studies, pump station design, bridge scour analysis, economic analysis, retaining wall design, wetland restoration, reservoirs, flow equalization basins, stormwater treatment areas, public recreation area design and specifications. Niche expertise includes water resources planning and design, local knowledge of South Florida Hydraulics and Hydrology, and familiarity with relevant regulatory and environmental requirements. He knows how to manage a multidisciplinary team and integrate key sub consultants. He has also managed pump station design, retrofit, and inspection projects for USACE, SFWMD, and local municipalities.

Education/Qualifications

- BS, Ocean Engineering, Florida Atlantic University, 1998

Years of Experience

Total – 26
With Arcadis – 8

Professional Registration/ Certifications

- Professional Engineer – FL (#67151), MD, MI, LA, TX, PR, USVI

Relevant Experience

C-139 Flow Equalization Basin Design
South Florida Water Management District, Hendry County, FL

Project Manager responsible for coordination of the design of a Flow Equalization Basin from the Conceptual Design through Ready to Advertise plans and specifications. The C-139 FEB project consists of 11,000 acre-feet of water storage including perimeter embankments, interior berms, 690 cfs inflow pump station, internal inflow and outflow canals, out-flow structure, access roadway, canal improvements, land leveling and a gravity seepage structure. The design included the site civil layout which includes roadway relocation, demolition of existing structures, utility relocation, and erosion protection measures. The C-139 FEB is intended to assist in managing source basin runoff by attenuating peak flows and temporarily storing a portion of stormwater runoff prior to it being conveyed to STA-5/6. This project included permitting for the FDEP and USACE.

Eastpointe Pump Station Replacement
Northern Palm Beach County Improvement District, Palm Beach Gardens, FL

Project manager responsible for coordination of civil, structural, mechanical, electrical, geotechnical, survey, landscape architecture, and cost estimating. Responsible for providing design modifications and preparation of bid documents for construction of a new pump station, concrete driveway, and retaining wall. Work included the design and specification of two 30,000 GPM duty pumps, and one 2000 GPM jockey pump capable of mounting directly to the flange mounts utilized by the existing pumps. All pumps were electric direct drive except for diesel back-ups. Pumps were designed to deliver 30,000 GPM flow at a maximum static lift of five feet. The diesel generators were selected to meet the current emissions requirements. Also included was the structural design of hardened surface for installation in the lake bottom below the pump intakes. A solid sump floor and pump bay was installed to prevent scour, requiring a cofferdam and dewatering. Riprap had been previously installed in front of the existing steel sheet pile wall to support the aging wall system. Rock

located in front of the existing sheet pile wall was removed and relocated to the canal bank area north of the pump station to provide shoreline support. Trees and landscaping were required for this structure by Palm Beach County, so low maintenance plants were selected to satisfy the County requirements. For the construction of the pump station, the following permits were obtained: SFWMD Environmental Resource Permit, SFWMD Water Use Permit, Palm Beach County Land Development Permit, and USACE Permit.

Old South Dade Landfill Pump Station Inspection and Design

Miami Dade County, Miami, Florida

Project manager responsible for coordination of pump station inspection including removal and inspection of both pumps. Prepared a report detailing the pump station condition and performed an analysis to determine if the surrounding swales could hold the design storm event. Coordinated the preparation of draft and final plans to implement the pump station modifications and permitting.

Pump Station S-476

South Florida Water Management District, Labelle, FL

Responsible for quality control of deliverable reports, plans and specifications on a team responsible for updates to the Corrected Final/RTA design completed in 2008 to current SFWMD and USACE standards. S-476 will deliver water from the Townsend Canal to the proposed C-470 (Perimeter Canal) and provide water for adjacent agricultural uses in Hendry County. The Pump Station consists of a rectangular intake structure with one trash rack and rake, three vertical mixed flow can mounted pumps, auxiliary power generator and ancillary equipment, along with a concrete and masonry pump house for security and weather protection.

Pump Stations #1 and #2 Mitigation Improvements

Miami Dade Water and Sewer Department, Miami, Florida

Water Resources Engineer responsible for support of a FEMA grant application that was submitted to obtain funding for hardening two wastewater pump stations against flooding from storm surge, sea level rise and extreme rainfall. Specific hardening improvements included flood proofing, wind resistant windows and roof, elevating tanks, and seawall enhancement. The application highlighted the need for permanent solutions to protect the pump stations, the expected level of project performance, and demonstrated that the design and implementation will adhere to all Federal, State, and local requirements.

Structure Inspection Program – STA Regions

South Florida Water Management District, West Palm Beach, FL

Project Manager responsible for structure summaries, inspection checklists, inspection reports, data summary spreadsheets, and QA/ QC for 94 water control structures in 16 counties. The structures included pump stations, spillways, and gated culverts. The inspections are critical to help maintain operational integrity of the structures and to avoid partial or total failure that could endanger the lives and safety of the public or cause substantial property damage. The inspection reports and findings will be used to assist the SFWMD in identifying and prioritizing remedial repairs and upgrades.

S-6 Pump Station Bridge Load Rating Analysis

South Florida Water Management District, West Palm Beach, Florida

Responsible for inspection of the S-6 pump station service bridge and coordination of the bridge load rating analysis for the service bridge at pump station S-6. Team conducted structure inspections for SFWMD and identified serious structural deficiencies on the underside of the service bridge at structure S-6. The service bridge superstructure, composed of rectangular cast-in-place concrete beams and deck, had several large spalls with exposed and corroded rebar exhibiting up to 100 percent section loss. The bottom face of the beams had several large cracks and sounded hollow when hit with a hammer. Performed a load rating analysis using MathCAD software and the Load Factor methodology. The live load applied in the analysis was the HS20 vehicle, SU2, SU3, and SU4 Florida Legal Loads. This method, accepted by AASHTO and FDOT for rating older bridges, was used to re-evaluate the service bridge at pump station S-6.

Biscayne Bay Storm Surge Modeling

South Florida Water Management District, Miami, FL

Project Manager responsible for the development of a storm surge model for the structures and canals around Biscayne Bay. This model will be used to predict storm surge around the Miami area so that the SFWMD can better plan the need for future capital improvements in their water system. The goals of the project included the development and calibration of a hydrodynamic model using the DELFT3D system, to simulate and validate water level hydrographs at the structures downstream of the SFWMD structures in the bay for selected historical storms, and to simulate water level hydrographs near the structures under future conditions considering 3-4 ft sea level rise scenarios derived from the SE County Compact projections.

Leah Richter, PE

Principal-in-Charge

Ms. Richter has a diverse 25 year background in program management, business advisory and financial consulting services and civil engineering. She specializes in assisting municipal clients in South Florida with managing their planning, operational and capital program needs. Her experience includes project management and delivery, vendor procurement, contract compliance, regulatory permitting, public outreach, annual reporting to bondholders/trustees, litigation support services, environmental compliance and operation and maintenance evaluation. Ms. Richter currently serves as the Principle in Charge for the breadth of services Arcadis provides for the City as well as is Arcadis' Southeast Florida Operations Leader and is located in our Plantation office, just minutes from the City to provide rapid response to any request.

Education/Qualifications

- MS, Civil Engineering, Florida Atlantic University, 2002
- BS, Environmental Engineering, University of Florida, 1997
- Program Management, Academy – Leading Complexity University of Oxford – Said Business School

Years of Experience

Total – 28
With Arcadis – 28

Professional Registration/ Certifications

- Professional Engineer – FL

Office Location

Plantation, FL

Relevant Experience

Water System Engineering Services Contract
City of Hollywood

Project officer and contract manager responsible for the full breadth of services Arcadis provides as the City's Engineer of Record for the City's water treatment plant and water distribution system. Activities and projects have included numerous capital improvement design and construction projects, feasibility studies, condition assessments, asset management and master planning activities.

Lead and Copper Rule Revision (LCRR) Compliance Program
City of Hollywood, FL

Served as project officer supporting the City through the development of a Compliance Program, making sure that all requirements are met in accordance with the LCRR. Activities include the development of the initial lead service line inventory and the development of the necessary work plans for the LCRR Compliance Program that will capture the City's strategy for improved data management, public education and outreach, customer tap sampling, school/childcare facility sampling, corrosion control evaluation, and lead service line replacement.

Bridge Condition Assessment
City of Hallandale Beach, FL

Under the Professional Engineering Services Contract, the City engaged Arcadis to prepare inspections and repair recommendations of 12 bridges.

Lift Station No. 6 Rehabilitation Engineering, Services During Construction and Post Construction Service
City of Hallandale Beach, FL

With the existing lift station structure past the end of its service life, Arcadis recommended that the station be rebuilt to meet current and future demand per client's requirements. This project's work included design, permitting

coordination, bidding, support, and services during construction (SDC) for the rehabilitation of Lift Station No. 6.

General Water and Wastewater Professional Engineering Services Continuing Contract
City of Fort Lauderdale, FL

Served as contract manager for the full breadth of services Arcadis provides as the City's Professional Engineer for water and wastewater services throughout the City. Activities and projects to date have include high service pump station design, 48/54-inch finished water pipeline from Prospect to Fiveash design/construction management services, redundant force main construction management services, and lime softening residuals evaluation.

Construction Engineering Inspection Services Contract
City of Fort Lauderdale, FL

Served as Principal-in-Charge for the full breadth of services Arcadis provides under Construction Engineering and Inspection (CEI) Services Contract for the City, including the A-16 Pump Station (PS) replacement project. Arcadis provided full-time CEI services throughout the project which consisted of replacement of the A-16 PS, as well as construction of new gravity sanitary sewer, force main, and watermain, implemented through a design-build delivery method.

Utilities Waste Rate Study
City of Key West, FL

Technical lead responsible for the development of a financial model for the City's solid waste utility department. Annual activities included reviewing revenue characteristics (historical and budget) and other documentations provided to support revenue and expense projections. Developed a comprehensive financial model to project cash flow for a five-year period and completed pricing surveys.

Utilities Engineering Continuing Services Contract
City of Miramar, FL

Serves as contract manager for all our services for the City as part of our Utilities Engineering continuing services contract. Recent activities have included annual reporting for their Water Reclamation facility deep injection wells, as required by the FDEP.

Palm Beach Renewable Energy Facility - Owner's Representative and Design Criteria
Professional Solid Waste Authority of Palm Beach County, West Palm Beach, FL

Principal-in-Charge and project manager responsible for the planning, permitting, procurement, financing, public outreach, and conceptual design for the overall implementation of the new 3,000 ton per day (tpd) mass burn waste-to-energy facility adjacent to the Authority's existing 2,000-tpd waste-to-energy facility. Key activities included development of procurement documents for the design-build-operator, development of application documents required under the Power Plant Siting Act and Prevention of Significant Deterioration program, development of a design criteria package to be used during the procurement process, development and implementation of an extensive public outreach program, negotiation of Power Purchase Agreement, detailed design review, construction and acceptance testing monitoring, and overall program management activities to support the development of this $672 million capital project. Construction was completed in 2015, and Arcadis served as Consulting Engineer overseeing the operations and contractual performance.

Water and Sewer Department Bond Engineering Services
Miami-Dade County, Miami, FL

Project manager responsible for WASD's rates, fee analysis and bond engineering contract. Responsible for overseeing and delivering all assignments and task orders under the multi-year contract serving WASD's executive leadership team. Projects and activities conducted to date include Asset Management Framework Development, Retail Rate Study, Mixed Use Customer Rate Analysis, Annual Review of the Adequacy of Rates and Fees, Annual Review of Wholesale Customer Rate Impacts and True Up, Annual Condition Assessment of all WASD Facilities, Development of Consulting Engineer's Reports in support of more than $2 billion in revenue bond issuances, and miscellaneous other assignments for the varying divisions of the department.

ARCADIS

Walter Baumy, PE

Quality Assurance / Quality Control

As former Chief of the Engineering Division of the United States Army Corps Engineers New Orleans District, Mr. Baumy provided management of more than 300 staff members consisting of six major functional offices and field operations. His responsibilities included program and project integration at the District, regional and national levels, with numerous precedent-setting activities. Mr. Baumy provided program execution post-Katrina and extensive coordination at the national level. His experience as the District's Dam Safety and Levee Safety Officer included responsibility for inspection, assessment and determination of required actions in the interest of public safety, and preparation of levee system evaluation reports in support of the National Flood Insurance Program. He also had technical responsibility for assessments, studies, designs, and development of construction plans for numerous dredging and coastal restoration projects in Louisiana.

Mr. Baumy's responsibilities include senior client interaction, project delivery of engineering products, and quality management for planning, design and construction of water resource-related projects. He is responsible for early project interaction to shape conceptual designs, technical approach and establishment of design standards, performance of quality reviews, overall quality management, and input on available acquisition strategies. He is an experienced Quality Manager or Independent Reviewer on over 100 projects at Arcadis, performs Quality Assurance reviews on projects across the nation and is a member of the Arcadis Quality Management team to establish policy, standards and requirements for Quality Management.

Education/Qualifications

- MS, Civil Engineering, Tulane University of Louisiana, 1981
- BS, Civil Engineering, University of New Orleans, 1976

Years of Experience

Total – 49
With Arcadis – 12

Professional Registration/ Certifications

- Professional Engineer – LA

Relevant Experience

Greater New Orleans Hurricane Storm Damage Risk Reduction System
USACE New Orleans District, New Orleans, LA

Engineer of record for the $14.9-billion Greater New Orleans Hurricane Storm Damage Risk Reduction System program. Responsible for establishing surge levels, system-wide design criteria and design methodologies, providing engineering services and support for project and program execution, establishing inspection requirements for works under construction, as well as the completed feature, establishing individual project and system wide operations and maintenance requirements, establishing requirements for and completion of a National Flood Insurance Program Levee System Evaluation Report for FEMA acceptance of the completed works. Also provided A-E acquisition and management; project and program management, planning and design; construction contract preparation; inspection and assessment of flood risk reduction systems, bridges, navigation channels and structures; emergency operations and coastal restoration; and organizational and personnel management. Successfully completed St. Bernard Parish Flood Management, Seabrook Sector Gate Complex and the Western Closure Complex projects—all utilizing Early Contractor Involvement (ECI).

Mecca Water Impoundment Design

South Florida Water Management District Palm Beach Gardens, FL

Civil Engineer. Served as quality manager, performed technical review and advisor. Scope: Design of a 7,200-acre-ft aboveground reservoir to restore flows to the Loxahatchee River. Complexity: High – design needed to avoid seepage or groundwater impacts on residential development located adjacent to the project. Cost: $3.2M (fee), $95M (const.).

C-139 Flow Equalization Basin Design

South Florida Water Management District, Hendry County, FL

Civil Engineer. Served as quality manager, technical advisor and reviewer. Scope: Design of 11,000-acre-ft shallow impoundment and water control structures intended to manage source basin runoff. Complexity: High – worked under an accelerated schedule and avoided impacts on surrounding property.

Rio Puerto Nuevo Channel (2D/2E) and Roosevelt Avenue Bridge (2B)

USACE Jacksonville District, San Juan, PR

Civil Engineer. Served as quality manager, technical reviewer and advisor. Scope: Design and construction of improvements for a 1.1-mile-long channel to accommodate a 100-year flood and bridge design and replacement. Complexity: High – requirements to maintain conveyance during construction in a dense urban area as well as seismic bridge and channel requirements.

Southeast Louisiana Urban Flood Control Project, SELA 76 Pump Station Expansion

USACE New Orleans District, New Orleans, LA

Quality Manager for the design of a 600 cfs pump station addition. Established the Quality Control Plan documenting requirements for quality control and quality assurance. Coordinated reviews including quality control and independent technical reviews to support prescribed submissions capturing documentation of process and certifying the quality processes were completed.

East Side Coastal Resiliency (ESCR)

New York City Department of Design and Construction, New York, NY

Engineer of record for design of an integrated coastal protection system that reduced the risk of flooding and facilitated access to the waterfront, creating improved public spaces and enhanced natural areas. Responsibilities included senior customer interaction, establishment of design standards and integration of design components into a resilient system, development of program requirements for O&M, preparation of construction documents and serving at the Certifying Engineer for the proposed FEMA flood map revisions.

Bay Park Sewage Treatment Plant Hurricane Sandy Recovery

Nassau County Department of Public Works, East Rockaway, NY

Technical advisor and quality reviewer for preparation of design, contract construction documents and preparation of an Operations and Maintenance Manual. Prepared design and submission requirements for the Conditional Letter of Map Revision submission to FEMA. Flood proofing the facility included design and construction of perimeter flood projection consisting of levees, floodwalls and floodgates; and interior drainage improvements including 2 pump stations.

D-B Edinburg Pump Station Levee Rehabilitation

Conti Federal Services, USIBWC, Peñitas, TX

Market Sector Leader for a $6.4 million contract to Conti Federal Service, LLC, (Conti) to Design-Build a gap in the Rio Grande flood control levee near Peñitas in Hidalgo County, TX. Arcadis, as a subcontractor to Conti, provided design services for this design-build (D-B) project, providing Role: Quality Manager for the project. Established Quality Control Plan documenting requirements for quality control and quality assurance. Coordinated reviews including quality control and independent technical reviews to support prescribed submissions capturing documentation of the process and certifying effective implementation of plan.

ARCADIS

Michael DeVuono, PE, CPESC, LEED AP

Quality Assurance / Quality Control

Mr. DeVuono is a National Practice Lead for Stormwater Design and Engineering at Arcadis. A licensed Professional Engineer with 30 years of experience in water resources and stormwater engineering, he specializes in assisting public and private sector clients with stormwater conveyance and control measure design, right-of-way utility design, interior drainage engineering, flood mitigation design, erosion and sediment control design, public policy development, and capital planning. Among other projects, Mr. DeVuono has recently led large scale flood relief culvert designs for the Cities of Alexandria, VA and Dalton, GA.

Education/Qualifications

- MBA,The Power Business School
- MS, Civil Engineering, New Jersey Institute of Technology
- BA, Geographic Information Systems, West Chester University of PA
- Executive Certificate, Business Strategy, Cornell University

Years of Experience

Total – 30
With Arcadis – 8

Professional Registration/ Certifications

- Professional Engineer – CO, HI, MD, PA, VT, WA
- Certified Professional in Erosion and Sediment Control
- LEED AP BD+C

Relevant Experience

Commonwealth Avenue and Glebe Road and Ashby Street & Glebe Road Flood Mitigation and Stormwater Conveyance Design

City of Alexandria, VA

Stormwater technical lead for a major stormwater conveyance flood relief project within the City. The project focuses on targeted flood relief for flood prone neighborhoods near the intersections of Commonwealth Avenue and East Glebe Road, Ashby Street, and East Glebe Road. The proposed stormwater conveyance improvements, designed to account for 2070 rainfall and tide patterns) include new parallel box flood relief culverts along Commonwealth Avenue and East Glebe Road, which will increase the capacity of the storm sewer system, and lower hydraulic grade line within the system. Additionally, a new stormwater outfall will be installed to discharge flood flows to Four Mile Run before its confluence with the Potomac River.

Windsor Woods, Princess Anne Plaza & The Lakes Drainage Improvement Engineering Design

City of Virginia Beach, Department of Public Works, VA

Technical advisor and QA/QC lead for civil engineering and drainage design for a comprehensive flood protection program for the City. The Windsor Woods, Princess Anne Plaza, and The Lakes Drainage Improvements Project focuses on safeguarding the city and its residents from the adverse impacts of flooding through enhanced stormwater management infrastructure. The design-build project highlights include the design and construction of tidal gates to control water flow and reduce flooding during storm surges, stormwater pump systems to manage stormwater and prevent localized flooding and flood barriers structures to shield vulnerable neighborhoods from rising water levels.

North/West Battery Park City Resiliency Project Interior Drainage and Stormwater Design

New York Battery Park City Authority, New York, NY

Technical advisor and QA/QC lead for civil engineering and drainage design for a flood barrier system along portions of Lower Manhattan. The barrier system

will provide protection for current and future storm surges and rising sea levels caused by climate change. This comprehensive solution requires extensive modifications to interior drainage systems to account for the placement of coastal protection measures, including the installation of interior raingardens, upgraded conveyance piping, and tide gates.

Green Stormwater Infrastructure Engineering Design
Philadelphia Water Department, Philadelphia, PA

Technical advisor to the Arcadis GSI team. Provides technical oversight, quality assurance, and mentoring for a team of water resources engineers tasked with designing urban green stormwater infrastructure practices within the public right-of-way throughout the City of Philadelphia. This work includes extensive coordination to accommodate existing utilities in the ROW, as well as providing overflow and underdrain connections to existing sewer conveyance systems.

Professional Stormwater Engineering Services
City of Dalton, GA

Technical oversight and direction for several watershed-scale flood mitigation studies and stormwater infrastructure projects, including conveyance projects, regional detention solutions, and asset criticality studies designed to guide the capital program and shape long term stormwater strategy and policy. Through a Master Services Agreement with The City of Dalton Public Works Department, Arcadis provides engineering analysis and support services to address known flooding issues, capacity constraints, and stormwater planning services.

Richmond Green Infrastructure Master Plan
City of Richmond, VA

Technical adviser and QA/QC lead for data collection, green infrastructure siting and sizing, and the development of conceptual designs for bioretention areas and permeable pavements within the public right-of-way throughout the city. Provided quality oversight and validation of field data, GIS analyses, and planning deliverables to ensure accuracy and reliability for location decisions. Reviewed and guided the selection of candidate sites based on drainage patterns, utility conflicts, and site constraints. Oversaw the quality of conceptual layouts and preliminary sizing, ensuring compliance with regulatory, hydraulic, and constructability requirements. Led coordination across disciplines and facilitated stakeholder input, identifying technical risks and opportunities early to support seamless integration into detailed design.

Virginia Stormwater Handbook Development Services
Commonwealth of Virginia Department of Environmental Quality, VA

As a task manager and technical author for the Virginia Stormwater Handbook, version 1.0, overseeing the consolidation and update of DEQ's stormwater and erosion and sediment control handbooks, technical memorandums, and BMP specifications into one online manual. Led coordination with DEQ staff and a Stakeholder Advisory Group to develop enhanced content, including guidance for stormwater design in karst and coastal plain environments and updated recommendations addressing climate change impacts. Responsible for updating and adding over 50 erosion and sediment control and stormwater BMPs and served as lead and contributing author for chapters on erosion and sediment control, stormwater management, and hydrologic and hydraulic methods.

Blueprint Columbus - New Bedford GI and I&I Improvements Project
City of Columbus, Columbus, OH

Technical advisor for the Blueprint Columbus – New Bedford GI and I&I Improvements project, guiding the effort from planning through detailed drainage design and implementation within the public right-of-way. Oversaw the design of stormwater conveyance systems and green infrastructure practices, including bioretention, permeable pavement, and infiltration trenches, integrated within complex urban and residential ROW environments.

Rahway NJ Storm Water Management
Confidential Pharmaceutical Client,
Whitehouse Station, NJ

Technical lead that directed the engineering design and state permitting for a regional flood-control basin with a storage capacity exceeding 40 acre-feet. Managed all aspects of stormwater modeling, site grading, and hydraulic design, ensuring the facility met rate and volume control requirements established by a regional watershed study. The project included the integration of real-time controls and pumping operations to optimize basin performance and mitigate downstream impacts on an existing stream channel. Provided technical oversight through permitting and design, coordinating closely with regulatory agencies to secure necessary approvals.

ARCADIS

James O'Shaughnessy, PE

Mechanical – Pump Stations

Mr. O'Shaughnessy is a Principal Water Engineer with experience in design and construction management of stormwater, water and wastewater pump stations. He is a pump station design leader within Arcadis and specializes in large pump station and stormwater conveyance facility design, construction, and operations. Having delivered over 5000 cfs of pumping capacity, he is uniquely aware of common operational and maintenance challenges associated with large pump stations and stormwater conveyance facilities. He has a proven track record of efficiently delivering high quality multidisciplinary water and wastewater projects.

Education/Qualifications

- MS, Civil & Environmental Engineering, Virginia Polytechnic Institute and State University, 2009
- BS, Civil Engineering & Environmental Engineering, Virginia Polytechnic Institute and State University, 2009

Years of Experience

Total – 15
With Arcadis – 13

Professional Registration/ Certifications

- Professional Engineer – FL, VA

Relevant Experience

C-139 Flow Equalization Basin, Pump Stations
South Florida Water Management District, Hendry County, FL

Pump Station Design Lead. James served as the pump station design lead and mechanical engineer of record for this project. This project included a 690 cfs pump station consisting of six mechanical bar screens installed in 12-ft pump intake channels, six 48-in axial flow column pumps, and emergency power generation. CFD modeling was used to evaluate alternate channel configurations leading to the pump station to provide consistent and uniform flow. A physical model was performed to optimize the pump intakes to conform to Hydraulic Institute Standard 9.8. In addition to the pump station, the project also included three hydraulic structures with a total of eight slide gates ranging in size from 6-ft to 11.5-ft, levee and embankment improvements, and channel improvements.

C-18W Reservoir, Pump Stations
South Florida Water Management District, Palm Beach County, FL

Pump station design lead for 360 cfs pump station. The C-18W Reservoir is used to store and release up to 3 billion gallons of water to augment flows in the Loxahatchee River for ecosystem restoration. This project includes a 360 cfs MGD inflow pump station to fill the reservoir and a gated impoundment outlet tower to allow discharges to the C-18 canal.

Huntington Levee & Stormwater Pump Station
Fairfax County, VA

Pump Station Design Lead. James served as the pump station design lead and mechanical engineer of record for this project. The project's stormwater pump station included four 310-hp submersible axial flow pumps rated at 80 cfs installed in 48-in pump cans with formed suction inlets (320 cfs installed capacity), mechanical bar screens installed in 10-ft wide channels, sluice gates to divert and direct flow, outfall energy dissipation structure, and emergency generator and fuel storage. Physical modeling performed with Clemson Engineering Hydraulics was used to optimize and reduce the overall pump station footprint. To efficiently address flows from smaller rainfall events, the project also included a 40 cfs low flow pump station.

SELA Pump Station 13 Expansion
US Army Corps of Engineers, New Orleans, LA

Design Manager. As the design manager for this project, James is managing the technical delivery, schedule, and budget for this project. This project includes a new pump station to expand the capacity of existing stations by 1800 cfs to provide relive flooding in adjacent flood-prone neighborhoods. The pump station consists of six mechanical bar screens installed in 10-ft channels, three 3500 hp axial flow pumps with formed suction intakes, and emergency generators. The outlet structure for the pump station consists of a flood wall with six 8-ft slide gates.

Windsor Woods, Princess Anne Plaza, and The Lakes Flooding Mitigation
Virginia Beach, VA

Mechanical design lead for this $489M progressive design-build resiliency project that improves stormwater management and relieves widespread flooding in the Windsor Woods, Princess Anne Plaza and The Lakes communities of Virginia Beach. Mechanical elements include the 800 cfs Windsor Woods Pump Station, 1400 cfs North Loudoun Bridge Pump Station, and gate structures required to provide flood protection for the community.

Filter Influent Pump Replacement and FADF Misc. Upgrades, Blue Plains Advanced Wastewater Treatment Plant
DC Water, Washington, DC

Process Mechanical Lead for the replacement of ten mixed flow vertical line shaft pumps rated at 120 cfs each and miscellaneous facility upgrades. To address premature pump failures, a physical model was completed and identified vortex activity and excessive flow swirl at the pump intakes. Pump intake improvements were implemented to eliminate these conditions at the pump intake and resolve long term O&M challenges for DC Water.

Appomattox River Water Supply Intake and Raw Water Pump Station
Chesterfield County, VA

Design manager for the design delivery of a 40 MGD raw water intake and deep shaft pump station. The intake consists of 6 wedge wire screens and air burst support system. The intake is connected to the pump station by two 78-inch micro tunnels. The pump station sits on top of a 100 ft deep, 60 ft diameter shaft. Six 450 hp vertical turbine pumps lift water from the river to the treatment plant.

Wylie Raw Water Pump Station #4
North Texas Municipal Water District, Wylie, TX

Pump Station Design Lead for the planning, preliminary engineering and final design of a 350 MGD intake and raw water pump station. The project will provide access to the dead pool of Lake Lavon to increase NTMWD's water supply resiliency. The project will also replace aging infrastructure from Pump Stations #1 and 2 in a new facility. Planning for the project included site analysis, development of design criteria, and evaluation of feasible pump station, intake, and transmission alternatives. The pump station consists of a shoreline intake structure connected to a rectangular wet well. Eight 1,500 hp and two 800 hp vertical turbine pumps provide raw water conveyance to each of the Wylie Treatment Complex's four water treatment plants.

Milestone Reservoir (Quarry A) and Raw Water Pump Station
Loudon Water, Ashburn, VA

James served as the design manager for the conversion of a retired quarry into a 1.2-billion-gallon raw water reservoir with CMAR project delivery. To convey water from the quarry to the WTP, the project includes a 40 MGD deep shaft pump station. Reservoir intakes were strategically located to maximize year-round water quality provided to the treatment plant. Four 1500 hp submersible turbine pumps housed in the deep shaft were sized to maximize pumping efficiency throughout a wide operation range of flows and depths.

Raw Water Intake and Potomac Raw Water Pumping Station
Loudoun Water, Leesburg, VA

Lead Process Mechanical Engineer for design, construction and commissioning of a 40 MGD raw water intake and pumping station. The intake consists of 16 half-barrel, 1 mm intake screens with flushing water, and air burst support systems. The pump station sits on top of a 100 ft deep; 29 ft diameter shaft connected to the river via a 12 ft diameter tunnel. Four 900 hp vertical turbine pumps lift water from the Potomac River and convey it to the water treatment plant.

ARCADIS

Anthony Michuda, PE

Civil

Mr. Michuda is a principal civil/water resource engineer with more than 48 years of experience as a Design Manager and Project Engineer for numerous public and private sector clients. He has extensive experience with the management, design and implementation of water resource and heavy civil infrastructure facilities for a variety of flood protection, dam, navigation lock, stormwater treatment and reservoir storage projects. He has participated in the engineering design and management of numerous water control structures, waterway conveyance, surface water management and roadway improvements for governmental, industrial, commercial, educational, and residential projects. In addition, he has prepared construction documents, obtained government agency approvals, and provided construction administration and engineering oversight for projects located throughout Florida.

Education/Qualifications

- BS, Civil Engineering, University of Florida, 1976

Years of Experience

Total – 48
With Arcadis – 20

Professional Registration/ Certifications

- Professional Engineer – FL
- Construction Documents Technologist

Relevant Experience

Restoration Strategies – C-139 Flow Equalization Basin (FEB)
SFWMD, Hendry County, FL

Design Manager and Engineer of Record for the planning, design and construction of a new above-ground water storage reservoir intended for augmenting and enhancing the performance of one of the SWFMD's existing Stormwater Treatment Areas (STA-5/6) in achieving the permit-mandated Water Quality Based Effluent Limit for total phosphorus concentrations in discharges to the Florida Everglades. The C-139 Flow Equalization Basin (FEB) project is an 11,000 acre-foot above-ground impoundment constructed on a 2,900-acre former citrus grove site located on the south side of the Deer Fence Canal and west side of the L-3 Canal. The project features included perimeter embankments; interior embankments and berms for wave mitigation; a 690-cfs inflow pump station; an outflow discharge structure; internal inflow distribution and outflow collection canals; and a perimeter seepage management system (canal). Ancillary project features included a replacement gated flow control structure in the Deer Fence Canal; dredging and regrading of the existing perimeter canals; and a relocated public access road. The C-139 FEB is intended to assist in managing source basin runoff in a more controlled and advantageous manner, by attenuating peak flows and temporarily storing a portion of stormwater runoff prior to it being conveyed to STA-5/6. Project responsibilities included project scope definition, coordination of multi-disciplinary design teams for the preparation of the detailed design and ready-to-advertise construction documents, internal quality control and coordination of approval through the District's multi-agency technical review process, assistance during bidding, and engineering services during construction. The project scope included: evaluation of multiple conceptual layout options; topographic survey; geotechnical investigation, evaluation and design of the embankments, canals, structure foundations, and erosion control; hydraulic design analyses and modeling of the canals, pump station, control structures, and internal works; civil, structural, mechanical, and electrical/instrumentation control engineering design, plans and specifications; and detailed construction cost estimating.

Restoration Strategies - Mecca Impoundment
SFWMD, Palm Beach County, FL

Project manager for the analysis and development of the design for a proposed above-ground water storage reservoir to benefit the Loxahatchee River, a national Wild and Scenic River in northern Palm Beach County. The project site is a 1,900-acre former orange grove adjacent to the west leg of the SFWMD C-18 Canal, that was identified and included as an above-ground storage component in the U.S. Army Corps of Engineer Loxahatchee River Watershed Restoration Project. The C18-W (FKA Mecca) Impoundment was proposed to be a 7,200-acre-foot above-ground reservoir to provide pumped diversion and storage of excess flows from the adjacent C-18W Canal and release water back to the canal, as needed and available during low-flow periods for delivery to the Loxahatchee River to support target flows for river restoration and reduce exceedances and violations of the minimum flows and levels criteria. Alternate analysis was provided to accommodate expansion of the reservoir to provide a storage volume of 9,500 acre-feet. Project responsibilities included project scope definition, coordination of multi-disciplinary design teams for the preparation of a detailed Design Documentation Report, internal quality control and coordination of technical review and approval through the District's multi- agency technical review process. The project scope included evaluation of multiple conceptual layout options; boundary and topographic survey of the site; geotechnical investigations including field exploration, hydraulic conductivity testing and laboratory testing; geotechnical evaluation of field and lab data to develop design criteria for the embankments, seepage canal, water control structures, and erosion control; monitoring of groundwater elevations on the site and adjacent areas; groundwater modeling to assess the effects of the impoundment on groundwater elevations adjacent to the project site; and hydraulic design analyses and modeling of the inflow and outflow canals, pump station and control structures, and design the internal works of the impoundment.

CEPP North – S-620 Gated Culvert and L-6 Canal Improvements
SFWMD, Palm Beach County, FL

Design Manager and Engineer of Record for the planning, design and construction of a new 500-cfs gated box culvert to convey water from the L-6 Canal to the L-5 Canal and ultimately improve the quantity, quality, timing and distribution of water flows to WCA-3A. The new culvert structure was designed for two 10-ft by 10-ft remotely operated vertical slide gates to control outflow from the L-6 Canal to the North New River and L-5 Canals. The project also included the channel regrading of the L-6 Canal associated with the design of the proposed S-620 structure from 400-feet upstream of S-620 to the east side of the North New River Canal. The structure will replace the existing plug at the southern end of the L-6 Canal with a new operable structure. The design also included the reconstruction of a previously degraded tie-back levee from the end of the existing S-7 Pump Station access road to the S-620 gated culvert. Project responsibilities included project scope definition, coordination of multi-disciplinary design teams for the preparation of the detailed design and ready-to-advertise construction documents, internal quality control and coordination of approval through the District's multi-agency technical review process, assistance during bidding, and engineering services during construction. The project scope included: evaluation of multiple conceptual layout options; topographic survey; geotechnical investigation, evaluation and design of the canal and levee improvements, structure foundations and wingwalls, and canal erosion/scour protection; civil, structural, mechanical, and electrical/instrumentation control engineering design, plans and specifications; and detailed construction cost estimating.

Design of Expedited Capital Projects
SFWMD, Districtwide

Project director of the expedited design and delivery of 15 major O&M capital projects for 21 water control structures and canals. Services provided include project scope definition, field investigations, detailed design and construction documents, technical review, and approval through the District's Dr. Checks review process, permitting assistance, solicitation support and engineering services during construction.

Nhi Ngo, PE

Civil

Ms. Ngo is a licensed civil professional engineer. She has spent seven years as a consulting and design engineer working with private, municipal and government clients, bringing a well-rounded perspective to civil engineering projects. Ms. Ngo's expertise includes stormwater system design, permitting, civil/site design, and capital improvement planning.

Education/Qualifications

- MS, Civil Engineering (Water Resources), Florida Atlantic University, 2019
- BS, Civil Engineering, Florida Atlantic University, 2017

Years of Experience

Total – 7
With Arcadis – 2

Professional Registration/ Certifications

- Professional Engineer – FL

Relevant Experience

Water Master Plan Phase II
City of Hollywood, Hollywood, FL

Project engineer performing an alternative analysis for potential repair and replacement of different assets for the existing water treatment plant. Assisted in preparation of specifications. Performed process evaluation, conceptual design for corrosion inhibitor feed and develop opinion of probable costs. Assisted in the development of capital improvement projects and the 20-year cost schedule. Assisted in the development of the Master Plan Report.

Fort Lauderdale New High Service Pump Station
City of Fort Lauderdale, FL

Civil designer, including the stormwater design for the new Fort Lauderdale High Service Pump Station in the Fiveash WTP. The work includes new Site Grading for the pump station building and for the new 5 MG ground storage tank, design of the stormwater infrastructure, performed Pre and Post development calculations for pervious and impervious areas and led the permitting coordination efforts with Broward County and the South Florida Water Management District. The work performed also included the development of the Engineer's Opinion of Probable Construction Cost.

SR 527 OUC UWHCA
Orlando Utilities Commission (OUC), Tampa, FL

SR 527 UWHC: Orange Avenue – Arcadis is the design engineer for OUC's program for replacing aging and deteriorating water mains. Arcadis completed the design of approximately 155 LF of 20-inch water main, 4,400 LF of 16-inch ductile iron water main; 1,860 LF of 12-inch ductile iron water main and smaller pipes, along Orange Avenue between Muriel Street and Annie Street, in downtown Orlando. The design services also included: coordination with electrical improvements along the Orange Avenue corridor between Kaley Street and Annie Street. Installing a medium voltage distribution electrical duct bank (12.5 KV) to include 5,000 LF of conduit (design by a third party); Maintenance of Traffic services for the entire project with portions of night work and lane closures; bidding assistance; and permitting support. Arcadis also assisted OUC with public engagement, by providing materials needed for the public meeting, addressing public questions. Arcadis is currently providing full Construction Management and inspection services during construction, covering both day and night shifts.

Resilience and Stormwater Services
City of Portsmouth, VA, Portsmouth, VA

Provided site civil service for the City of Portsmouth as a project engineer. Assisted with the stormwater system improvement for different locations within the city as part of the Resiliency Service: perform quantity take off and create opinion of probable cost, review engineering drawings and figures, assisted with stage storage calculations. Assisted in the Portsmouth Stormwater Services: QAQC Jefferson City Park and Maplewood City Park 90% improvement engineering drawings.

KSA Automotive Supplier Park (2025)

CEER Masarat, King Abdullah Economic City, Saudi Arabia

Provided site civil service for the new 27,000 sq m building at KSA Automotive Supplier Park as lead design engineer. Project activities included preparation of site civil design drawings, including drainage, paving, grading, roadway, and sanitary sewer system; preparation of the stormwater management plan including calculation of pipe slopes, inlet elevations, and underground storage vault system; and preparation of applicable site civil technical specifications. Coordination with various disciplines domestically and internationally in London, Toronto and Saudi Arabia.

Lake Hermosa BPS
City of Tavares, Tampa, FL

Provided site civil service for a booster pump station and ground storage tanks for the northern portion of the City of Tavares service area. Designed grading plan for site and coordinated with drafters for engineering drawings.

TECO General Services (2024)
TECO Peoples Gas, Plantation, FL

Provide ongoing permitting assistance for TECO People Gas. Perform due diligence research and prepare dewatering applications and NPDES letters. Coordination with city and county for approval and/or exemption.

FY20 FY21 Annual Inspection and Report
Miami-Dade Water & Sewer, Plantation, FL

This project consisted of a recompete for bond engineering position that we currently hold.

Portsmouth Resilience and Stormwater Services (2023)
City of Portsmouth, VA, Portsmouth, VA

Provided site civil service for the City of Portsmouth as a project engineer. Assisted with the stormwater system improvement for different locations within the city as part of the Resiliency Service: perform quantity take off and create opinion of probable cost, review engineering drawings and figures, assisted with stage storage calculations. Assisted in the Portsmouth Stormwater Services: QAQC Jefferson City Park and Maplewood City Park 90% improvement engineering drawings.

Shades Mountain Filter Plant Residual Handling Improvement (2024)
Birmingham Water Works and Sewer Board, Birmingham, AL

Provided site civil service for the Shades Mounter Filter Plant as project engineer. Designed the stormwater system improvement and regrade to provide access to the existing basement level. Relocated all existing utilities and coordinated with the respective disciplines. Assisted in the production of engineering drawings and specifications.

PRASA Superaqueduct Water Treatment Plant Upgrades (2024-2026)
Puerto Rico Aqueducts and Sewers Authority, Puerto Rico, FL

Provided site civil and chemical design services for PRASA Superaqueduct WTP Upgrades as project engineer. On the civil side, provided stormwater rerouting, including concrete channel and pipe system design, and regrading due to plant expansion. On chemical, assisted in the determination of existing flow and provide appropriate upgrades for Aluminum Sulfate, Chlorine, Polymer and Caustic Soda due to plant expansion. Prepared 60% and 90% submittal packages for chemical design. Coordination with GEC and Cad designers.

ARCADIS

Renato Vargas, PE

Structural

Mr. Vargas serves as a Principal Structural Engineer with combined experience in structural analysis and design of hydraulic structures (e.g., navigable, flood control, reservoirs, dams, and water conveyance), bridges, buildings, residential, retaining structures, and signage structures; design and fabrication of precast/prestressed concrete; and construction and project management in hotel, residential and non-residential construction. As QC Manager at Southeastern Prestressed Concrete, Mr. Vargas led the efforts to obtain the PCI Certification (a nationwide accreditation in the precast/prestressed industry). Proficient in STAAD-Pro, LEAP CONSPAN, TimeLine, Microsoft products, CPGA, Mathcad, GTSTRUDL, and BIM 360.

Education/Qualifications

- BS Civil Engineering, Universidad Autónoma de Nuevo Leon 1987
- MS Civil Engineering, Florida Atlantic University 2011

Years of Experience

Total – 36
With Arcadis – 17

Professional Registration/ Certifications

- Professional Engineer – FL (#67399), NY, TX

Relevant Experience

Dallas Floodway Project
U.S. Army Corps of Engineers, Fort Worth District, Dallas, TX

Engineer of Record for the design of a new pumping station at Hampton (Hampton 3), upgrades to the existing New Hampton Pumping Station (NHX). The current operations of the existing pump stations must be maintained during the construction of the Hampton 3 Pump Station. The existing NHX station will remain in place. The new Hampton 3 Pump Station will replace the old Hampton OHX Pump Station and will have a maximum capacity of 700,000 gpm consisting of five (5) 140,000 gpm pumps.

Gulf Intracoastal Water Way West Closure Complex
USACE - New Orleans District, New Orleans, LA

Structural design lead for the West Closure Complex (WCC) sluice gated bypass structure. This 5-bay bypass structure provides water conveyance during dewatering maintenance operations and during normal operations of the WCC Sector Gate (the largest in the nation) and provides flood mitigation for 1-percent storm levels (100 years). The sluice gated bypass structure also hosts the erection bay and the safe house/control room/storage area for the WCC pump station (the largest such facility in the nation as well). Responsible for the analysis and design of the base slab and pile foundation; and QC reviewed the analysis and design of the superstructure performed by USACE-MVN's engineers. Responsible for plans preparation for both the substructure and the superstructure. Coordinated design concepts and resolved design conflicts with other design leads for other components such as the adjacent WCC pump station and the east T-floodwall.

C-139 Flow Equalization Basin
South Florida Water Management District, West Palm Beach, FL

Engineer of Record for the design of water control structures including an inflow pump station, an outflow discharge structure, a gravity seepage discharge structure, a replacement structure to the existing G-711 water control structure, and associated control buildings; as well as dewatering provisions, monitoring platforms, and other ancillary structures. C-139 Flow Equalization Basin (FEB) is

an approximately 11,000-acre-foot shallow impoundment located south of Deer Fence Canal and west of STA-5/6 Flow-way 3 on the northern 2,800 acres of the C-139 Annex.

Inner Harbor Navigation Canal - Seabrook Sector Gate Complex

USACE - New Orleans District, New Orleans, LA

Structural Engineer: Provided QA/QC review for plans and specifications (P&S), and structural calculations for the pile-founded sector gate structure, as well as for the P&S of the pile foundation for the two vertical lift gate structures adjacent to the sector gate. Per-formed the Internal ITR for the DDR and P&S General Package BCOE Submittal. Scope: Alternatives analysis and design of a 95-foot-wide navigable sector gate, navigation channel, guide walls and concrete foundation, concrete T-walls and levees, control buildings, dewatering needle beams and girders, a cast-in- place concrete generator building, and operations and maintenance manuals. $9.1M (Fee).

Flood Mitigation at the Hugh L. Carey Tunnel (HLCT) and Queens Midtown Tunnel (QMT) Plazas Project

Triborough Bridge and Tunnel Authority, New York, NY

Engineer of Record for the design of flood mitigating measures at the HLCT Manhattan and Brooklyn Plazas, and the QMT Manhattan and Queens Plazas to reduce the risk of flood damage during a 500-yr event. These flood-mitigating measures include new permanent L-walls and retrofitting existing approach walls, as well as the foundation for deployable walls at the HLCT Manhattan and Brooklyn Plazas, and the foundation for deployable walls at the QMT Queens and Manhattan Plazas

C-43 West Storage Reservoir (Berry Groves)

South Florida Water Management District, Palm Beach County, FL

Structural Engineer responsible for the assessment of the overall external stability of crest spillways CS-1 and CS-2, and spillways S-10 and S-11 located at the perimeter seepage canal, and for the overall stability, structural design and plans preparation of the intake's structures located at Main Outlets S-1 and S-8. C-43 West Storage Reservoir is located in northwest Hendry County, FL and is part of the Comprehensive Everglades Restoration Plan (CERP) and is intended to improve water deliveries to the estuary for dry season flow, restore downstream salinity levels and ensure the availability of water for the natural system needs of the Caloosahatchee Estuarine System. The proposed facility is approximately 12,000 acres in size and consists of a two-cell reservoir with a combined minimum storage capacity of 160,000 acre-ft, a perimeter channel, reservoir spillways, and two pumping stations.

Gulf Intracoastal Waterway (GIWW), West Closure Complex (WCC) - Pump Station Pre- Inundation Inspection

USACE - New Orleans District, New Orleans, LA

Structural design lead for the West Closure Complex (WCC) sluice gated bypass structure. This 5-bay bypass structure is to provide water conveyance during dewatering maintenance operations and during normal operations of the WCC Sector Gate (the largest in the nation) and to provide flood protection for 1-percent storm levels (100 years). The sluice gated bypass structure also hosts the erection bay and the safe house/ control room/storage area for the WCC pump station (the largest such facility in the nation as well). Responsible for the analysis and design of the base slab and pile foundation; mentored and QC reviewed the analysis and design of the superstructure performed by USACE-MVN's junior engineers. Responsible for plans preparation for both the substructure and the superstructure. Assisted in the preparation of specification sections for the structural discipline and coordinated the preparation of specification sections for the civil, mechanical, and electrical disciplines. Responsible for design submittals, BCOE and ITR Review Comments evaluations. Coordinated design concepts and resolved design conflicts with other design leads for other components such as the adjacent WCC pump station and the east T-floodwall.

Dallas Floodway Hampton Pump Stations and Nobles Branch

Sump Improvements – USACE Fort Worth District, Dallas, Texas

Engineer of Record for the design of the Hampton 3 Pump Station in the Dallas Floodway for the US Army Corp of Engineers (USACE). Following construction, the facility will be operated by Dallas Water Utilities (DWU) as the latest in a series of large concrete volute pump stations. Close coordination during design with both the USACE and DWU was required to ensure the completed pump station met Corp and City Standards. The design includes five (5) 140,000 gpm pumps and a smaller low flow pump. The addition of the Hampton 3 Pump Station will add the capacity of pumping 500,000 gpm of storm water from the interior drainage area behind the East Levee and discharging into the Trinity River. The pumps discharge water on the river side of the levee through five 84-inch steel pipes. The pump station and discharge pipes are supported on piers.

ARCADIS

Jose Custodio, PE

Conveyance

Mr. Custodio is a professional engineer with extensive experience in designing water, wastewater, and stormwater pipeline/conveyance projects. His expertise includes various trenchless technologies such as pre-chlorinated pipe bursting, horizontal directional drilling, jack-and-bore, compression fit lining, and cured-in-place pipe rehabilitation. His work spans planning, design, and permitting phases, and has previous working experience with the City. Additionally, Mr. Custodio brings valuable public sector experience, having served as a Project Manager for the City of Fort Lauderdale and as Public Works Director/Town Engineer for the Town of Bay Harbor Islands, Florida.

Education/Qualifications

- ME, Construction Engineering, Polytechnic University of PR, 2013
- BS, Civil Engineering, Polytechnic University of PR, 2010

Years of Experience

Total – 16
With Arcadis – 3.5

Professional Registration/ Certifications

- Professional Engineer – FL, PR
- Florida Department of Environmental Protection Agency (FDEP) – Qualified Stormwater Management Inspector
- OSHA – 30 Hrs. Construction Industry

Relevant Experience

Stormwater Master Plan
Town of Bay Harbor Islands, FL

As the Public Works Director – Town Engineer, was responsible of managing all aspects of the Town's Stormwater Master Plan to address future Sea Level Rise projections. For the evaluation, an ICPR4 stormwater model was developed for the Town, including detailed evaluation of all private and public seawalls.

CRS – Stormwater Management Assessment
Town of Bay Harbor Islands, FL

As Town Engineer, performed a detailed assessment of the Town's Stormwater Management policies and infrastructure to determine how these could be revised to have a better CRS Class rating. The review process resulted, stricter requirements for private developers on stormwater management, modifications to the Standard Operating Procedures for roadway sweeping, inlets cleaning, stormwater pipeline cleaning, and the 2 stormwater retention basins in the Town, located in the Intracoastal Waterway.

SSES and CMOM Plans for Town of Bay Harbor Islands
Town of Bay Harbor Islands, FL

As the Public Works Director – Town Engineer, was responsible for the preparation of the Sewer System Evaluation Survey (SSES) and Capacity Management, Operation and Maintenance (CMOM) Reports for submittals to Miami Dade County on an annual basis. Directed a crew of staff in performing night flow monitoring, visual inspection of sanitary sewer manholes, contracted smoke testing and CCTV services to determine I&I sources in the system.

Water Resources Management Plan
Puerto Rico Aqueduct and Sewer Authority, PR

Responsible to evaluate different alternatives to increase the storage capacity of the Carraizo reservoir (60 MGD safe yield) which provides raw water to the Sergio Cuevas WTP in the metropolitan area of Puerto Rico. Assessed and recommended the best alternative and estimated implementation cost of the selected alternative.

Asset Condition Evaluation
Puerto Rico Aqueduct and Sewer Authority, PR

Performed inspections and condition reports for twelve (12) water treatment plants and eight (8) wastewater treatment plants for the PRASA's Asset Condition Report. The evaluation of the facilities consisted of the condition of its water and solids treatment facilities in terms of operation, maintenance, compliance, and general conditions.

East Las Olas Blvd 12" Force Main Replacement – Pipe Bursting
City of Fort Lauderdale, FL

Responsible for managing the construction of the project through final completion and closing out to comply with the FDEP Consent Order deadline and avoiding penalties fees for the City. Project consisted of the replacement of approximately 2,300 linear feet of 12-inch diameter force main with a 16-inch diameter HDPE force main along Las Olas Blvd corridor. Along with the open-cut method, the trenchless method of pipe bursting was used for this project. The construction cost of the project was $1,350,000.

30" Force Main A-Repump Station to GTL Wastewater Treatment Plant
City of Fort Lauderdale, FL

Design-Build Project – Responsible for managing the design and construction of the project through final completion and close-out to comply with the FDEP Consent Order deadline and avoiding penalty fees to the City. Project consisted of the repairs/rehabilitation of approximately 20,000 linear feet of 30-inch diameter force main located along the Fort Lauderdale Downtown area. In addition to the typical open-cut installation, various trenchless methods were used, like horizontal directional drilling and compression fit. The construction cost of the project was $15,500,000.

Tyndall Air Force Base
USACE – Panama City, FL

Responsible for the design of the water and sewer infrastructure for a new Subscale Drone Facility and Headquarters that were severely damaged during hurricane Michaels. Extensive coordination with USACE was necessary for the completion of the design.

Croissant Park Small Water Mains Improvements
City of Fort Lauderdale, FL

Responsible for managing the design, bidding, and construction phase of the project through final completion and close-out. Project consisted of the replacement of aging and undersized infrastructure (approximately 16,000 linear feet of 2, 4 and 6-inch diameter cast iron water mains) with an 8-inch diameter HDPE water main, replacement of fire hydrants, 375 service connections and relocation of water meters located in private property within the neighborhood. The installation methods used were open-cut trench for the tie-ins to existing system, and a combination of pre-chlorinated pipe bursting and horizontal directional drilling for the new water main. The construction cost of the project is $2,600,000.

Bermuda Riviera Small Water Mains Improvements
City of Fort Lauderdale, FL

Responsible for managing the design and bidding phase of the project. Project consisted of the replacement of aging and undersized infrastructure (approximately 24,000 linear feet of 2, 4 and 6-inch diameter cast iron water mains) with an 8-inch diameter HDPE water main, replacement of fire hydrants, 500 service connections and relocation of water meters located in private property within the neighborhood. The installation methods used were open-cut trench for the tie-ins to existing system, and a combination of pre-chlorinated pipe bursting and horizontal directional drilling for the new water main. The construction cost of the project is $3,800,000.

Central New River Water Main Crossing
City of Fort Lauderdale, FL

Responsible for the design of approximately 600 LF of a subaqueous water main crossing under the New River Canal and Las Olas Blvd. using Horizontal Directional Drilling. The project obtained all the environmental permits from USACE, FDEP and Broward County.

ARCADIS

Eric Battle, PE, CDT

Electrical

Mr. Battle is a senior electrical engineer with extensive and varied experience in the analysis, design and services during construction of power distribution systems, facility systems, power system analysis calculations, as well as I&C systems and SCADA. He has gained skills through the design, bidding, procurement, and construction management of many water and wastewater facility projects and upgrades. He demonstrates strong relationship management and communication skills with the ability to network and team with project managers, peers, clients, vendors, and contractors. Mr. Battle is resourceful, analytical, and detail driven on every project, no matter the scale, with a goal to provide his clients with the best possible service and products.

Education/Qualifications

- BS, Electrical Engineering, Virginia Commonwealth University, 2004

Years of Experience

Total – 17
With Arcadis – 9

Professional Registration/ Certifications

- Professional Engineer – FL, GA, PR
- Construction Documents Technologist

Relevant Experience

Lift Station No. 6 Rehabilitation Engineering, Services During Construction and Post Construction Services
City of Hallandale Beach, FL

With the existing lift station structure past the end of its service life, Arcadis recommended that the station be rebuilt to meet current and future demand per client's requirements. This project's work included design, permitting coordination, bidding, support, and services during construction (SDC) for the rehabilitation of Lift Station No. 6. Provided project electrical/I&C engineer support.

Picayune Strand Restoration Project
South Florida Water Management District, Naples, FL

The Picayune Strand Restoration Project scope included the development of plans and specifications and engineering services during construction for three flood control pump stations totaling 4,780 cubic feet per second capacity as part of the SFWMD Acceler8 program. Mr. Battle's scope of work included producing both electrical and I&C detailed contract drawings, schematics, project specifications and construction cost estimate documentation. During construction, Mr. Battle conducted walkdowns of facility systems with contractor staff to observe progress and conformity to the contract documents. The systems designed and inspected include Electrical distribution system including Diesel Generators, Brackett Green Traveling Bridge Screens, Duperon Screens, Diesel Pumps, Cooling Water Systems, Lubricating Water Systems, Exhaust and Supply Fans, Lube Oil Systems, Lightning Protection Systems, Fire Detection and Alarming Systems and Access Control Systems, SCADA.

As-Needed Engineering Contract
Tampa Bay Water, FL

Electrical/I&C Design Engineer for numerous utility engineering improvement projects for Tampa Bay Water under the existing as needed/ master service agreement. Projects include: Tampa Bypass Canal Transmission Main Cathodic Protection Improvements and Advanced Decision Intelligence Program.

Tallahassee Engineering Services, Water Resources Engineering, Water/Wastewater Services

City of Tallahassee, FL

Electrical/I&C design engineer for professional services relating to permitting services, design services, construction-related services, specific projects, and engineering studies.

William E. Dunn Water Reclamation Facility Headworks

Pinellas County, Palm Harbor, FL

Project electrical/I&C engineer for the design and construction to replace the existing screens and implement improvements to the headworks for better inorganic solids removal. The system included power distribution modifications, variable frequency drive (VFD) driven influent mechanical bar screens, automated compactors, new programmable logic controllers (PLCs) and integration into the facility's existing SCADA system. Construction administration services included both electrical and I&C support for RFI's, submittal reviews, performance testing and documentation, etc.

Albert Whitted Water Reclamation Facility Influent Pump Station

City of St. Petersburg, FL

Associate Electrical Engineer. Duties include electrical design of 30 mgd submersible pumping capability, new 30 mgd coarse bar screen equipment with conveyor system, and fine screenings compactor units at existing headworks.

Airport WRF Expansion Modifications

Hernando County, FL

Scope of work included making modifications to electrical design, including coordination with two other consulting firms and development of electrical plans, schematics, diagrams, detailed drawings, project specifications and construction cost estimate documentation. Conducted walkdowns of facility systems with contractor staff to observe status of punch list items and verify completion including electrical distribution system including diesel generator and paralleling switchgear, electrical buildings, headworks, oxidation ditches, dewatering building, clarifiers, RAS/WAS, plant water, chlorine injection building, etc.

Pump Station Electrical/SCADA Upgrades Phase II

Hillsborough County, Tampa, FL

Electrical/I&C design engineer for the $18-million rehabilitation and installation of the new SCADA control systems for 326 existing and new pump stations. The project included the installation of new control panels, underground raceway systems, and power systems for the pump stations upgrades. Duties included general construction phase engineering services, inspections, as well as startup and testing.

Oberly PS Chemical Addition

City of St. Petersburg, FL

Responsible for the modifications to existing structures including demolition of remaining chlorine gas equipment, preparation of the space for the new sodium hypochlorite, ammonia, and sodium hydroxide equipment, routing of new conduit and piping, and installation and start-up of new chemical injection equipment.

Hamlin Water Reclamation Facility

Orange County, FL

Electrical/I&C Design Engineer — For the 5-mgd Hamlin Water Reclamation Facility. This is a brand-new facility that started operation in September 2022 and is treating water to reclaimed water standards. Responsibilities include troubleshooting commissioning issues and coordination with owner, contractor and equipment suppliers.

Hemphill Pump Station Upgrades

City of Atlanta, GA

Senior electrical engineer who produced both electrical and I&C detailed contract drawings, schematics, project specifications and construction cost estimate documentation. During construction, conducted walkdowns of client facility systems with construction contractor staff to observe progress and conformity to the contract documents.

ARCADIS

Inna Hely, PE

Instrumentation & Controls

Ms. Hely is experienced in designing and specifying instrumentation and control systems for water and wastewater treatment facilities. Her experience includes automation strategy design as well as network design for Supervisory Control and Data Acquisition (SCADA) systems. She has worked on extensive assessments of existing instrumentation systems and established plans, specifications, and designs for upgrades. She has extensive experience in programming and configuration of SCADA systems, as well as experience in start-up and construction administration.

Education/Qualifications

- BS, Electrical Engineering, Boston University, 2004

Years of Experience

Total – 21
With Arcadis – 21

Professional Registration/ Certifications

- Professional Engineer – FL, DC, GA, MN, NY, PA, SC, VA,
- CDT (Construction Document Technologist)

Relevant Experience

Miramar West Water Treatment Plant – Nanofiltration Upgrades
City of Miramar, FL

Lead Instrumentation and Controls Engineer responsible for the upgrade and expansion of the existing West Water Treatment Plant. The treatment process consists of nanofiltration membrane softening for softening of Biscayne Aquifer raw water, and reverse osmosis membrane treatment for TDS removal with Floridan Aquifer as the feed water. Post treatment includes permeate degasification, chemical injection (fluoride, sodium hypochlorite, sodium hydroxide, and corrosion inhibitor), transfer pumping, and clearwell storage. A detailed evaluation of the whole instrumentation and SCADA system of the plant was performed; several panels are being replaced as part of the integration process.

Wastewater Treatment Consolidation Project
Chemung County Sewer District, NY

Performing design and all Programming Control Logic (PLC) programming and Human Machine Interface (HMI) configuration for the complete replacement of the SCADA system at two wastewater plants. The new SCADA system design includes the installation of 14 new PLC panels, three with redundant PLC processors, integration of seven other PLC panels, installation of redundant SCADA servers, a plant wide fiber optic network, and a cellular network for communication to remote sites. Process control includes preliminary treatment, trickling filters, secondary treatment including moving bed biofilm reactors, methanol feed system, UV disinfection, gravity belt thickeners, belt filter presses, and digestors. Auxiliary systems include polymer, chlorine gas, non-potable water, and odor and corrosion control systems.

Central Plant BNR Upgrades and CSO Long Term Control Plan Implementation
Williamsport Sewer Authority, PA

Designed and completed all Programming Control Logic (PLC) programming and Human Machine Interface (HMI) configuration for the SCADA upgrade of the 21-mgd Central Plant, as well as the setup of a new plant-wide Ethernet TCP/IP network. SCADA system included ten PLCs, redundant HMI servers and remote client workstations, a Historian server, and alarm notification software. Control strategies implemented included preliminary treatment, CSO, aeration tanks and

blowers, secondary clarifiers and RAS, denitrification filters, methanol, NPW system, and various chemical systems. Coordinated the startup of all plant control panels and workstations for a complete SCADA system.

Falling Creek Treatment Plant BNR Upgrade
Chesterfield County, Richmond, VA.

Designed control upgrades for new fine screens, methanol storage and feed system, and an integrated fixed film activated sludge system.

Loudon Water Raw Water Intake and Potomac Raw Water Pumping Station
Loudon Water, Ashburn, VA

PLC programming and HMI configuration for the raw water intake and pump station. Control strategies included raw water pump control, raw water intake and air burst system, intake screen flush system, chemical system, surge tank system, and auxiliary systems.

Cobbs Creek Regional Water Supply Reservoir
Henrico County, Columbia, VA

Instrumentation & controls for the150-mgd raw water pump station. Station included six 25-mgd vertical turbine pumps, two wet wells to comply with HI standards, and innovative piping to allow 72-inch discharge headers to accommodate return flow to the river.

Holmes Run Pump Station Rehabilitation Design
Fairfax County, Fairfax, VA

Instrumentation & Controls: The project includes the generation of a Building Information Modeling 3-Dimensional (3D) facility and asset model. Major upgrades include the addition of four variable frequency drives (VFDs) with passive harmonic filters for the 150-hp pump motors, automatic transfer switch, generator docking station, temporary load bank connection, and standby generator.

Turner Road Pump Station Rehabilitation Design and Construction
Chesterfield County, VA

Instrumentation & controls for the rehabilitation design of a 35-year-old wastewater pump station in Chesterfield County, Virginia, doubling the firm pumping capacity of the pump station to 35.7 mgd.

Noman M Cole Jr. Pollution Control Plant Filter Rehabilitation Project
Fairfax County, Fairfax, VA

Designed and implemented a pilot SCADA system to collect, store, and transmit required compliance data. Performed programming and configuration of pilot SCADA system as well as operator and system maintenance training of the new system.

SCADA Systems Replacement Project
Henrico County, Henrico, VA

Performed design for the complete replacement of the SCADA systems at water and wastewater facilities, including the water reclamation facility, water treatment facility, and over 30 remote pump stations. The design includes the installation of 21 new PLC panels and the modification of over 60 others.

Huntington Levee Project Phase II
Fairfax County, Fairfax, VA

Performed design of a 155-mgd pumping station for flood protection. Design included all status monitoring, remote control, and automation. Engineering services will include programming and configuration of all new process control hardware.

West Plant Headworks and Secondary Digester Cover Replacement
Williamsport Sewer Authority, Williamsport, PA

Designed and completed all PLC programming and Human Machine Interface (HMI) configuration for the Headworks replacement of the West Plant. Interface with the existing system included modifications to several plant PLCs as well as a reconfiguration of the plant-wide PLC Ethernet network. Control strategies implemented included coarse bar screens, influent pumping, fine screens, and grit system. Interfaced new headworks control system with the existing plant wide system. Coordinated the startup to provide a completely integrated SCADA system.

Filtration Plant Control System Upgrades
Williamsport Municipal Water Authority, Williamsport, PA

Designed and completed all PLC programming and HMI configurations for the SCADA upgrade of the WTP. Project included the installation of a brand-new SCADA system, the replacement and/or modification of all PLC control panels in the plant and two remote pump stations, as well as installation of associated electrical conduit and wiring, and fiber optic cable. Simultaneously, performed construction administration for this project.

ARCADIS

Chris Tilman, PE, BCEE, CDT

H&H

Mr. Tilman is a civil engineer with more than 27 years of experience in several civil engineering disciplines, including stormwater planning and design. Mr. Tilman is very familiar with the requirements of Broward County for stormwater design and permitting and has extensive experience with ICPR4 modeling software. Chris also led the stormwater master plan for the City of Sebastian in Florida.

Education/Qualifications

- MS, Engineering Management, Troy University, 1997
- BS, Civil Engineering, Auburn University, 2000
- BS, Environmental Science, Auburn University, 1994

Years of Experience

Total – 27
With Arcadis – 25

Professional Registration/ Certifications

- Professional Engineer – AL, FL, GA
- Board Certified Environmental Engineer
- Construction Documents Technologist

Relevant Experience

Stormwater Master Plan
City of Sebastian, FL

Project manager responsible for the development of a stormwater master plan for the entire City area to address long-standing drainage issues. Project work included analysis of historical City files, preparing a GIS map for the entire City stormwater system, conducting field inspections and surveys of more than 800 seawalls and more than 4,200 stormwater culverts, inlets and associated structures, hydraulic/hydrologic modeling of stormwater runoff flows and pollutant loading, identifying and prioritizing capital projects, grant funding analysis and application preparation, and preparation of a master plan, including a comprehensive operations plan for the City's system.

Dimick Road and Potter Road Improvements
City of Boynton Beach, FL

Engineer of record responsible for the preparation of the engineering drawings, specifications, and SFWMD ERP permitting and FDOT ROW permitting for flood damage reduction improvements in an older 10-ac neighborhood on the Lake Worth Lagoon in the City of Boynton Beach. Project work includes analysis of historical rainfall and tidal elevation data, widening three existing residential streets (from 8-foot to 10-foot travel lanes), adding curbing, modifying driveways, relocating and modifying water, wastewater, gas, power, and CATV utility services, retrofitting and redesigning an inlet-and pipe collection system to optimize flow through three existing outfalls, analysis and design of coastal structures, performing an alternatives analysis for various design options, and 2-D hydraulic and hydrologic modeling to simulate inline valve operations in all outfalls and tidal influences from the Lake Worth Lagoon.

Pinellas County Resource Recovery Facility National Pollutant Discharge Elimination System (NPDES) Permitting Support Services
Pinellas County Department of Solid Waste, St. Petersburg, FL

Project Manager and Engineer of Record responsible for the preparation of a year-long surface and groundwater predictive mathematical model to analyze the surface water levels, gradient controls and other issues contributing to NPDES discharge events at the 705-acre site. The model includes hourly calculations of surface inflow, horizontal and vertical infiltration in ponds, open

channel flows, circular and box culvert flows, weir flows, pump operations and groundwater flows in 14 subbasins. In addition, the model also includes a user interface that can be used to test proposed changes to the site through manipulation of pump operations, water treatment plant and WTE facility operational parameters, 17 years of daily rainfall data, and four years of gradient control data from 18 monitoring well and piezometer pairs throughout the site.

Florida CDBG-MIT Program Management
Florida Department of Economic Opportunity, FL

Technical Review Team Leader. Responsible for completing the technical reviews for 61 Critical Facility Hardening Program and 40 General Infrastructure Program applications under the CDBG-MIT Program administered by DEO. The Florida Department of Economic Opportunity (DEO) is administering over $600 million in CDBG-MIT funds across a wide range of planning and critical infrastructure resilience programs and projects. Arcadis works as a subcontractor to Carl, Riggs, and Ingram (CRI) and provides program management consulting services. In conjunction with CRI, Arcadis provides consulting program management consulting services to the Florida DEO as part of the agency's ongoing CDBG-MIT program. Arcadis functions as a subject matter expert and supports DEO grant managers in the development, approval, and implementation of eligible projects. Additionally, the team provides DEO with technical and environmental review services across all CDBG-MIT programs. Finally, Arcadis supports CRI in the development and administration of standard operating procedures for the program.

Hamlin WWTP Design
Orange County Utilities Department, Orlando, FL

Site/Civil Design Engineer, responsible for the site civil and stormwater system design and ERP permitting for a new $113 million 5.0 MGD wastewater treatment plant on a 50-ac site. The stormwater design included three retention ponds designed to hold the runoff from a 100-year, 24-hour storm event, and had to account for the groundwater effects resulting from operations of adjacent Rapid Infiltration Basins (RIBs). Project work included analysis of historical site data, coordination with FDEP, SFWMD, and OCU, preparation of engineering calculations and drawings, groundwater studies using Green-Ampt groundwater infiltration calculations, 2-D and 3-D modeling for hydraulic/hydrologic flow routing and recovery analysis, permitting, and supporting documentation.

FY 2022 Annual Report
Miami-Dade County Water and Sewer Department, Miami, FL

Water and Wastewater Operations Engineer, responsible for developing an Annual Report to document the physical inspection of one-third of the Department's water and sewer system assets, reviewing the Department's FY 2022 financial information, conducting staff interviews, review of customer and sales data, assessment of the Department's initiatives, operations, and strategic programs, as well as the Department's achievements and challenges, and preparing recommendations for required repairs, replacements, and improvements for consideration within the Department's Multi-Year Capital Improvement Plan (MYCP).

Carlton Wellfield Monitoring Wells and System-Wide Assessment
Sarasota County Utilities Department, Sarasota, FL

Project Manager, responsible for providing full oversight for the abandonment of one well and oversight of the installation of four monitoring wells at the Carlton Memorial Reserve Well Field and conducting a system-wide assessment of Sarasota County's well field monitoring wells and development of infrastructure improvements recommendations.

Lake Hermosa Booster Pump Station and Water Main
City of Tavares Utility Department, Tavares, FL

Deputy Project Manager and Site/Civil Engineer of Record, responsible for the site civil design, permitting, and design services during construction for a new potable water booster station with two above ground storage tanks on a 5-ac site, and approximately 2,200 linear feet of 18-inch PVC water main, including crossings under a county road and a US Highway with jack and bore and horizontal directional drilling.

Gordon River Extension Easement Acquisition Assistance
Collier County Stormwater Management Department

Project Manager, responsible for providing professional consulting services in support of planned maintenance activities within the Gordon River Extension to correct a long-standing drainage issue on the northern portion of the 8-square mile drainage basin. The County needed to acquire critical easements for the planned project, and the project work included assisting the County with the coordination of surveys, preparation of easement documents, and negotiation of easement terms with property owners.

ARCADIS

Alex Spektor, PE

Mechanical – Pump Station

Mr. Spektor is a Project Engineer with nine years of experience in water, wastewater, and stormwater engineering. He is experienced in various aspects of environmental engineering, from design development through construction administration. His project experience includes water and wastewater treatment facilities, water and wastewater pumping stations, water and sewer distribution systems, and large-scale stormwater master planning.

Education/Qualifications

- BS, Ecological Engineering, Department of Food, Agricultural, and Biological Engineering, The Ohio State University, 2016
- BS, Environment and Natural Resources, The Ohio State University, 2011

Years of Experience

Total – 9
With Arcadis – 5

Professional Registration/ Certifications

- Professional Engineer – FL

Relevant Experience

Prospect Lake WTP Enabling Works, Replacement of Existing High Service Pump Station at Fiveash WTP
City of Fort Lauderdale, FL

Lead mechanical engineer for the detailed design of a new 70 mgd high service pump station and a new ground storage tank (GST) at the Fiveash WTP site. The pump station includes a new electrical room, and a second floor for offices.

Dolphin Isles CCTV of Gravity System
City of Fort Lauderdale, FL

Project Manager responsible for managing the Contractor performing closed circuit television (CCTV) video for approximately 31,000 linear feet of gravity sewer system. The work also included 630 linear feet of sewer laterals.

Home Depot Master Pump Station & Force Main Project
Sarasota County, Sarasota, FL

Lead mechanical engineer/deputy project manager. Sarasota County has chosen Arcadis for engineering services on the Home Depot Master Pump Station (MPS) and Force Main Project, selected through a competitive proposal. This project involves relocating and upgrading an existing 12-inch force main, extending it to a new 16-inch force main that will span approximately 4,000 feet. The new line will start at the Home Depot MPS, cross I-75, and connect to the existing force main on Bee Ridge Road, bypassing FDOT's Roadway Project area to avoid conflicts with ongoing construction and to increase capacity for future flows. The MPS will be upgraded with new electrical systems, instrumentation, odor control features including a Vortex Drop, and other improvements like a diesel bypass pump and enhanced submersible pump capacity.

Venice Gardens WRF Deep Injection Well – Monitoring Well Replacement
Sarasota County, FL

Lead mechanical engineer/deputy project manager. The project involves professional engineering services for updating monitoring well MW-2B and installing a new monitoring well, MW-2BR, at the Venice Gardens Well Field, along with mechanical integrity testing of injection well IW-2. These actions are required by Water Use Permit No. 20 008836.014 from the Southwest Florida Management District. The modifications include adjusting MW-2B by cementing it to match the upper zone and constructing the new MW-2BR to a similar depth. The consultant will handle the complete design, permitting, bidding, and construction phases, including administration and fieldwork. Design changes will also address updates to piping, gauges, SCADA reporting, and assess the check valve connecting the monitoring wells to the injection well.

Indian River Shores County Study
Town of Indian River Shores, Indian River Shores, FL

Lead process/mechanical engineer. Indian River Shores requested that a feasibility study be performed for the purpose of transferring utility services to Indian River County. Deliverables for the project will include a feasibility report which will include an updated road map, funding evaluations, a cost estimate, permitting evaluation, and pipeline route evaluation.

Amir Irhayyim, PE

Structural

Mr. Irhayyim is a Civil Engineer with more than 25 years of design experience in structural engineering with an emphasis in lateral and vertical forces. A Structural engineer with an extensive knowledge of codes, manuals and standards: ASTM, ASCE, AISC, ACI, AASHTO, AWS, IBC, NDS, TMS, TIA, OSHA, Canadian code and UK-Adopted Standards. A Doctor of Philosophy candidate in civil engineering with concentration in structural University of South Florida, US who possess two master's degrees in structural engineering from the University of Mississippi in Oxford, and University of Jordan in Amman. An expert possessing extensive research experience in structural vibration analysis of steel structures and bridges.

Education/Qualifications

- Ph.D. University of South Florida, Tampa, FL, US
- M.Sc, Civil Engineering (Structural Engineering) - University of Mississippi, Oxford, MS, US
- M.Sc., Civil Engineering (Structural Engineering) – University of Jordan, Amman, Jordan
- B.Sc. Civil Engineering (Structural Engineering) – Baghdad University, Baghdad, Iraq

Years of Experience

Total – 35
With Arcadis – 2

Professional Registration/ Certifications

- Professional Engineer – FL, TN, LA, PA, TX, NC, MN, KS, OH, MD, AL, VA, GA, KY, SC, MS, IN, MO, PR, WV, AR, IL, NE, OK

Professional Associations

- American Society of Civil Engineers ASCE
- American Concerte Institute ACI
- American Institute of Steel Construction AISC
- Instructor for Professional Engineering (PE) and Fundamental (FE) Courses

Relevant Experience

Steel Spiractors and Administration building Rehabilitation
City of Hollywood WTP, FL

As Engineer of record, Mr. Irhayyim was responsible for the rehabilitation of twelve 40-foot- high steel Spiractors as part of the city's resilience study, reviewed structural design, drawings, and specifications and develop the contract drawings. He also was responsible for rehabilitation of filter building and administration building besides reviewing the submittals and response to RFIs per Arcadis standard details and specifications.

Lift Station No.6 Rehabilitation
City of Hallandale Beach, FL

As Engineer of Record, Mr. Irhayyim was responsible for the rehabilitation of 60-year-old lift station for increased capacity and to meet the current FEMA standards. He conducted detailed structural assessments, designed upgrades for increased loads, and collaborated seamlessly with interdisciplinary teams while mentoring juniorargin engineers to design the structural upgrades. Vital contributions include developing contract documents. Signed and sealed the drawings and specifications.

Clarifier #5 Rehabilitation
Shady Hills, Pasco County, FL

Mr. Irhayyim visually inspected the location and crack pattern to determine the extent of cracks. He sub-contracted a concrete testing agency that performed non-destructive and destructive testing on the concrete circle tank. Mr. Irhayyim also developed a technical memorandum with the summary of the findings of the testing agency, results of the analysis and repair recommendation. He mentored junior engineers in developing project design drawing and was response to submittals and RFIs during construction service.

Milestone Reservoir & Pumping Station
Chesterfield County, VA

As Project Structural Engineer, Mr. Irhayyim was responsible for the design of 15,000 sq ft pump station building, retaining walls, and cover slab for the 34 feet diameter raw water shaft. The project involved the design of a pump station that will draw and convey the raw water stored in the milestone reservoir to the Trap Rock Water Treatment Facility for treatment and distribution to Loudan Water customers.

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Meghan Naumick, CEP, LEED GA

Cost Estimating

Mrs. Naumick has 17 years of experience in the construction industry where she has served as a Senior Principal Cost Estimator and Construction Cost Engineer. She is a highly experienced, certified construction cost estimator with the ability to prepare cost estimates throughout the life of the projects, from planning, design, and through the construction phase. Mrs. Naumick has prepared cost estimates and associated basis of estimate reports for new or rehabilitation of existing water and wastewater infrastructure throughout the United States, which includes heavy construction, civil, structural, architectural, process mechanical, plumbing, HVAC, electrical, and instrumentation and controls. She has evaluated market driven factors to determine what impact current market conditions may have on bid results. Mrs. Naumick has prepared life-cycle cost analysis during planning/study phase and has been involved in value engineering to provide insights and alternative solutions.

Education/Qualifications

- BS, Civil Engineering, San Diego State University, 2008

Years of Experience

Total – 17
With Arcadis – 8

Professional Registration/ Certifications

- AACE, Certified Estimating Professional (CEP)
- LEED Green Associate

Relevant Experience

Fiveash WTP – New High Service Pump Station
Public Works Department, City of Fort Lauderdale, FL

Developed Engineering Opinion of Probable Cost and Basis of the Estimate for the new High Service Pump Station (50 MGD) in Fort Lauderdale. This pump station will receive finished water from the new Prospect Lake Clean Water Center. The work also included a new 5 MG ground storage tank, roadway improvements, yard piping, among others.

Storm Drainage Master Plan
Flood Control District, Alameda County, CA

Developed several conceptual estimates for flood protection at Zone 13, including floodwall and upsizing storm water piping.

Nanofiltration Treatment Improvements – West Water Treatment Plant
Department of Public Utilities, City of Miramar, FL

Developed the cost estimate and Basis of the Estimate for the nanofiltration upgrades at the Miramar West Water Treatment Plant, which includes upsizing the new nanofiltration treatment capacity to 25%.

East Side Coastal Resiliency
New York City Department of Design and Construction (NYCDDC), New York, NY

Developed an independent conceptual estimate for the 100-year flood wall under FDR in Lower East Side Manhattan that spans from Brooklyn Bridge to Montgomery Street. Developed the preliminary estimate for interior drainage to improve the drainage infrastructure in Lower East Side Manhattan by strengthening external walls, replace tide gates, and provide interior concrete repair for several regulators, and floodproof manholes. Developed estimates for several buildings, including Comfort Station, Tennis Building, Track Building, and Interceptor Gate Buildings.

Financial District & Seaport Climate Resilience Master Plan
NYC Economic Development Corporation, New York, NY

Provided input to the collection of cost data for the FiDi and Seaport Climate Resilience Master Plan; the cost data included multiple project elements in categories consisting of development, drainage infrastructure, environmental, shoreline extension, transportation assets, and utility relocation. Provided quality control and reviewed a conceptual estimate to evaluate the feasibility and cost of 3 alternatives for FiDi and Seaport drainage for the NYC DEP.

Rafael Fonseca

Conveyance

Mr. Fonseca is a licensed Professional Engineer (PE) in Florida with extensive experience in managing complex infrastructure projects. Based in Arcadis' Miami office, Rafael specializes in delivering innovative solutions in transportation, drainage, and industrial development projects. With a strong background in civil engineering and project management, he excels in leading multidisciplinary teams and ensuring successful project delivery.

Education/Qualifications

- BS, Civil Engineering, Newton University (Brazil), 2014

Years of Experience

Total – 8
With Arcadis – 0.5

Professional Registration/ Certifications

- Professional Engineer – FL

Relevant Experience

Copans Transit Operations Facility
City of Pompano Beach, Broward County, FL

This project involves the redevelopment of Broward County Transit's (BCT) Copans Transit Facility, designed to enhance public transportation infrastructure with a focus on sustainability and innovation. As Project Manager, Mr. Fonseca oversees the civil engineering aspects of the design, including stormwater management, grading, and utility design. Responsible for ensuring that these designs integrate with the facility's sustainable features, such as on-site lakes and advanced drainage systems, to mitigate flood risks and support BCT's commitment to environmental responsibility.

Princess Anne Drainage Improvements PDB
City of Virginia Beach, Princess Anne County, VA

This project aims to address severe flooding issues in Windsor Woods, Princess Anne Plaza, and The Lakes by enhancing drainage infrastructure. Responsibility includes developing and applying stormwater management models, analyzing existing infrastructure, and recommending improvements. Responsibilities encompass the design of stormwater, grading, as well as the preparation of construction documents for various drainage improvement projects. Mr. Fonseca ensures the civil portion of the design aligns with the project's goals of reducing flooding and improving water management.

Boca Raton Innovation Campus
Boca Raton, FL

Mr. Fonseca supported engineering efforts for BRIC's large mixed-use community in downtown Boca Raton, located near the Brightline station and downtown library. His role included the design of site amenities, stormwater systems, and utility infrastructure to accommodate residential units, office spaces, retail areas, and hotels. Mr. Fonseca ensured the project's compliance with city regulations and contributed to infrastructure designs that support long-term community development.

Cooper Square Retail Plaza
Cooper City, FL

Mr. Fonseca led civil engineering efforts for the design of a seven-acre retail plaza in Cooper City, consisting of six commercial buildings. His responsibilities included stormwater management, grading, utility design, and site layout to support the development infrastructure and compliance with local regulations. Mr. Fonseca coordinated with stakeholders to address permitting requirements and ensure the project's seamless integration into the community. The project is currently under construction.

Mabel T. Frank (PUD) Residential Development
Big Cypress Seminole Indian Reservation, FL

Mr. Fonseca provided civil engineering design for a residential development located on the Big Cypress Seminole Indian Reservation. The project includes thirty-two (32) multi-family lots of approximately 0.25 acres and seventeen (17) single-family lots of approximately 1.5 acres. His work included designing stormwater management systems, water and sewer utilities, grading, and preparing construction documents to support the development infrastructure needs.

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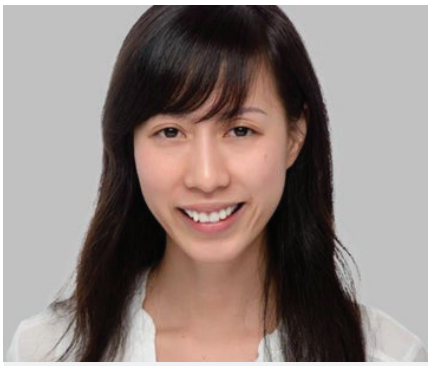

Van Nguyen

Electrical

Ms. Nguyen has a broad range of electrical engineering experience including analyzing, designing, and preparing technical specifications for power distribution systems, supervising and inspecting on-site constructions, evaluating and designing interior and exterior lighting systems, analyzing and performing short circuit and arc flash studies, providing condition assessment services on power distribution systems, and supporting construction administration services. Her design experience has gained through design for water treatment plants (WTP) and wastewater treatment plants (WWTP), commercial facilities, roadways, railroad facilities, and technology-based manufacturers.

Education/Qualifications

- MS, Electrical Engineering, University of South Florida, 2017
- BS, Electrical Engineering, University of South Florida, 2015
- AS, Mathematics, Atlantic Cape Community College, 2011
- AS, Biology, Atlantic Cape Community College, 2011
- AS, Information Technology, Lotus University, 2006
- AS, Information Technology, Institut des Techniques Informatiques, 2006

Years of Experience

Total – 11
With Arcadis – 10

Relevant Experience

Solid Waste Engineering Services & McKay Bay WTE EOR
City of Tampa, Tampa, FL

Served as an engineer supporting facility inspections of the McKay Bay Refuse-to-Energy Facility, as well as support for Electrical related continuous improvement projects. Inspections included assessing the operation of the MV and LV components of the facility's electrical distribution system, as well as facility instrumentation and controls, identifying and rectification support for safety concerns, and maintenance issues. Electrical and I&C Systems inspected included, but not limited to turbine generator island, refuse building, boiler system, ash management building, air pollution control system, water tower, electrical rooms, fire detection and alarming systems and lightning protection systems. Assisted with coordination and development of the facility annual report, including review of electrical equipment testing data and contractual compliance. Continuous improvement projects support currently includes review of the engineering design package & calculations to furnish and install replacement facility Main Transformer and Cooling Water Tower & Circulation System distribution equipment.

Solid Waste Authority of Palm Beach County Consulting Engineering for Palm Beach Renewable Energy Facilities
West Palm Beach, FL

Served as an engineer supporting facility inspections of the Palm Beach Renewable Energy Facility Nos. 1 and 2 each year from 2016 to present. This included assessing the operation of the facilities, as well as addressing safety concerns, and maintenance issues. Systems inspected included electrical equipment associated with the turbine generator system, boiler building, ash management building, air pollution control building, air cooled condenser, water treatment building, visitor's center, maintenance building, electrical rooms, fire detection and alarming systems, and lightning protection and grounding systems. Assisted with coordination and development of the annual reports, including review of electrical equipment testing data and contractual compliance.

Pump Station Supervisory Control and Data Acquisition – Phase II Rehab and Upgrade
Hillsborough County, Tampa, FL

Performed construction administration services for the rehabilitation and installation of the new supervisory control and data acquisition (SCADA) control systems for 326 existing and new pump stations (PS). Duties include supporting construction administration services, and engineer of record services, attending Factory Acceptance Tests of new control panels, inspecting and coordinating on-site construction activities and responding to Contractor inquiries.

Thomas Powell, PE

Instrumentation & Controls

Mr. Powell brings more than 39 years of Electrical Engineering and Instrumentation and Controls Engineering experience for water and wastewater projects. His professional experience includes both controls engineering and electrical power engineering, allowing him to design, coordinate, and manage projects from an integrated whole project system perspective. He specializes in power distribution, motor controls, and system integration-incorporating instrumentation, computer networks, motor controls, and process controls in a combined engineered system. He has designed electrical and control systems for wastewater treatment facilities, pumping stations, water treatment plants (WTP), reclaimed water systems, educational, and industrial facilities. His experience includes project and design team management, technical and constructability reviews of multi-discipline projects for conformance with the project's scope, national standards, and technical requirements. He has successfully implemented projects using multiple delivery methods. He is a licensed professional engineer in twenty-two states.

Education/Qualifications

- BS, Electrical Engineering, University of Michigan, 1987

Years of Experience

Total – 39
With Arcadis – 10

Professional Registration/ Certifications

- Professional Engineer – FL, GA, MI, CA, IL, IN, OH, NY, VA, OK, MD, NV, WI, TX, AZ, KY, AL, MS, LA, AR, NC, TN

Relevant Experience

J L Woodruff Lock and Dam
Chattahoochee, FL

As part of preliminary design, responsible for the conceptual design of the power distribution system modifications to provide power to replace gates and gate actuators on the US Army Core J L Woodruff Dam, and improve power reliablity to the existing gate lift crane system for normal and emergency gates. Power design needed to allow existing gate actuator system to remain in operation fully during construction and startup.

Crosstown and South Fayette WTP SCADA
Fayette County Water System, Fayetteville, GA

As a task order under the Water System Engineer of Records project, Arcadis provided SCADA Consulting and SCADA System Study Services. The SCADA consulting provided on-demand consulting to resolve time critical SCADA concerns, while the SCADA Study provided evaluation and engineering services which included recommended system improvements, FCWS SCADA standards, remote and on plant communication, historian functionality, technology implementation, hardware and software migration, and network access.

Carlton Water Treatment Facility Upgrade & Expansion Phases I & II | 2021 - 2023
Sarasota County

Electrical and I&C QC Engineer for design tasks that included assessment and modification of the existing electrical distribution system to provide service for 10 new EDR skids, while maintaining operation of the existing system and treatment facility. This entailed rectifier and motor control center (MCC) replacement, as well as Switchgear upgrades in an electrical room with limited additional space for modifications. The scope included producing electrical detailed contract drawings, schematics, project specifications, and construction cost.

Crosstown WTP Power Reliability
Fayette County Water System, Fayetteville, GA

As a task order under the Water System Engineer of Record Project, Arcadis proposed power reliability improvements for the plant power system including the utility power and the standby electrical power system. The power system falls under critical operation for the FCWS, and the present standby power system has insufficient capacity, and has a complicated operational sequence. This task order provided engineering to simplify the operation of the standby power system and improve the capacity of the standby power system. As part of this power reliability task, engineering design services will be provided to replace the diesel-powered standby generator with two new natural gas-powered standby generators.

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Alex Carlson, PE

H&H

Mr. Carlson is a civil engineer with experience in stormwater design, watershed master planning, stream restoration, innovative stormwater management, and flood protection design.

Education/Qualifications

- BS, Civil Engineering, Old Dominion University, 2015

Years of Experience

Total – 11
With Arcadis – 8

Professional Registration/ Certifications

- Professional Engineer – VA
- Stormwater Plan Reviewer – VA

Relevant Experience

Citywide Stormwater Modeling and Grant Support
City of Portsmouth, VA

Leads the development of advanced stormwater models for low-lying urban watersheds in the City of Portsmouth, with a primary focus on hydrologic and hydraulic analysis of the municipal drainage system and rainfall-induced flooding. As project lead, manages end-to-end modeling of city-owned drainage pipes, ponds, and channel networks using the Personal Computer Storm Water Management Model (PCSWMM). Pioneered the implementation of an innovative real-time flood forecasting dashboard pilot, integrating climate data to enhance flood preparedness and resilience within the community. Has successfully supported multiple grant-winning project applications, securing funding for critical infrastructure such as flood protection pump stations and expanded flood studies. These efforts directly assist the community in achieving its flood mitigation and resilience goals, supporting equitable, data-driven decision making for a historically marginalized urban area.

Windsor Woods and Princess Anne Plaza Flood Protection Project
City of Virginia Beach, VA

As the civil design lead for two high-capacity stormwater flood protection pump stations in Virginia Beach, Virginia, he played an integral role on a large, multidisciplinary team responsible for delivering these critical infrastructure projects under a fast-paced design-build approach. His responsibilities encompassed the civil design of pump station sites, flood protection walls, flood gates, and storm sewer improvements, all aimed at safeguarding the community from both rainfall and tidal flooding. He worked closely with hydraulic modeling specialists to optimize system performance, coordinated extensively with permitting agencies to ensure regulatory compliance, and assisted in the preparation of numerous design packages. In addition, he participated in community outreach efforts to inform and engage residents during the project's development.

Ohio Creek Watershed
City of Norfolk, VA

As a senior engineering student at Old Dominion University, he led a multidisciplinary design team, in partnership with local nonprofit organizations, to study and develop conceptual designs for flood protection, shoreline stabilization, and drainage improvements in Chesterfield Heights—a historic, underrepresented neighborhood with limited resources. After graduation, he contributed to the successful development of a Federal Housing and Urban Development grant application for the project, resulting in a $120 million award to implement a comprehensive community resilience plan. This initiative aimed to protect Chesterfield Heights from flooding, enhance public amenities, and strengthen neighborhood resilience. He subsequently supported the project's detailed engineering and design phases, assisting with tasks ranging from utility coordination to stormwater and environmental design. Completed in 2023, the project now serves the community by reducing flood risk, improving public spaces, and enhancing the quality of stormwater runoff.

Base Portsmouth Stormwater Plan
US Coast Guard, Portsmouth, VA

Assisted the project team with creation of a base wide stormwater master plan analyzing the base's existing drainage system to determine stormwater level of service and current flooding with the base limits. The masterplan included the development of multiple design alternatives created in the modeling software PCSWMM intended to reduce recurring flooding on base and meet budgetary constraints. The alternatives also included the evaluation of possible stormwater management and green infrastructure interventions as part of the masterplan.

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Ryan Blaida, PE

Transportation

Mr. Blaida brings extensive experience in the Florida region leading multi-disciplinary teams on civil/site, utilities, land development, and stormwater projects of all scopes and sizes. Mr. Blaida's experience includes acting as project manager and engineer of record for the design and permitting of paving grading and drainage plans, storm collection and treatment systems including modeling, sanitary collection systems including lift station design, and water and reclaim distribution systems. He has seen these projects through the design, permitting, and construction phases including the appropriate closeout process for the jurisdiction for the project. He has worked across the state permitting in over 25 municipalities, utilities, and 4 water management districts in Florida.

Education/Qualifications

- BS, Environmental Engineering, University of Central Florida, 2000

Years of Experience

Total – 24
With Arcadis – <1

Professional Registration/ Certifications

- Professional Engineer – FL

Relevant Experience

Lake Hermosa Booster Pump Station Construction Administration Services
City of Tavares, FL

Provided engineering services during construction and permitting of a new 5.8-MGD booster pump station in the Lake Hermosa Region, including two 830,000-gallon ground storage tanks, chemical feed systems, and approximately 5,700 LF of new 16-inch diameter water transmission main extension along Mt. Homer Road. Permitting included FDOT permitting for a trenchless crossing under SR 441 as well as Lake County right of way permitting along Mt. Homer Road.

Lift Station 30 Force Main Replacement
Toho Water Authority, Kissimmee, FL

Project management and design support for the replacement of approximately 3,100 LF of 8-inch cast iron force main with a new 12-inch PVC and HDPE sanitary sewer force main. Design included horizontal directional drills under FDOT right-of-way and open cut installation within residential streets. Obtained permits with FDEP, FDOT, and City of Kissimmee. Provided design services, permitting services, bid assistance, and design services during construction.

OUC Fern Creek Ave. Water Main Replacement
Orlando Utility Commission (OUC), Orlando, FL

Project management and design support for approximately 5,000 LF of 8-inch to 16-inch water mains to be replaced along a portion of Fern Creek Avenue to improve water supply reliability and quality, thereby reducing service interruptions from water main breaks, along with improved fire flow capability. Project includes coordination with the design and future installation of a new 230 kV electric transmission line (designed by others) within the same corridor. The project included coordination of maintenance of traffic (MOT), coordination of road restoration plans, as well as permitting through the City of Orlando, FDOT, SJRWMD, and FDEP as required.

OUC Fern Creek Ave. Water Main Replacement
Orlando Utility Commission (OUC), Orlando, FL

Project management and design support for approximately 5,000 LF of 8-inch to 16-inch water mains to be replaced along a portion of Fern Creek Avenue to improve water supply reliability and quality, thereby reducing service interruptions from water main breaks, along with improved fire flow capability. Project includes coordination with the design and future installation of a new 230 kV electric transmission line (designed by others) within the same corridor. The project included coordination of maintenance of traffic (MOT), coordination of road restoration plans, as well as permitting through the City of Orlando, FDOT, SJRWMD, and FDEP as required.

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Francheska Seijo Montes, PE

Permitting

Mrs. Seijo is a professional engineer registered in the states of Florida, Puerto Rico, and Texas. She has a background in civil/environmental engineering and a master's degree in Structural Engineering. Her work experience includes environmental permitting, municipality permitting, structural analysis and design for residential and commercial sectors, and construction management and inspections of several Capital Improvements Program (CIP) projects for different municipalities for the Puerto Rico Aqueduct and Sewer Authority (PRASA).

Education/Qualifications

- MS, Civil Engineering (Structures), University of Texas, 2008
- BS, Civil Engineering, Polytechnic University of PR, 2006

Years of Experience

Total – 18
With Arcadis – 1

Professional Registration/ Certifications

- Professional Engineer – FL (#98,938), TX, PR

Relevant Experience

WTP Maintenance Package A
City of Hollywood, Hollywood, FL

Project Manager - Provide engineering that includes data collection, field condition assessments and recommendations for repair or replacement of Degasifier #2, 3 and 4, Lime Silo, Silo Dust Collection System, Sludge Drum Thickener/Dewatering Equipment and Building, Storage Tanks #3 and 4 Valves Replacement, and Clear Wells Sample Line Leak Repair/Replacement. Provide design for repair or replacement needed, permitting coordination and bidding assistance services.

Building Condition Assessment - Central District WWTP
Miami-Dade WASD, Miami, FL

Project Manager – Perform visual, non-destructive facility structural and MEP condition assessment at the Central District WWTP. Develop a maintenance plan for all assessed structures (buildings and tanks). Provide recommendations for repair and rehabilitation of inspected facilities.

Design-Build Improvements to the Septic Waste Unloading Area for the Ponce WWTP
PRASA, Ponce, PR

Project Manager - Review design at 30/60/90% completion. Perform inspections, review of submittals, budget and schedule.

Design-Build of Chlorine Application System for the Splitter Box and Entrance of the Ponce WWTP
PRASA, Ponce, PR

Deputy Project Manager – The project consisted of improvements in the application of chlorine at the Splitter Box and sanitary manhole that receives the WW from the grit chambers that arrives at the entrance of the plant. This project included installing a new water pumping system, injector and chlorinator systems, and piping from the chlorine room to the Splitter Box and manhole. Interconnections with valves were made between the new and existing systems to provide redundancy for the pumping and chlorination systems.

Design-Build for the Construction of New Water Supply Branches for Brisas de Salinas Community
PRASA, Salinas, PR

Deputy Project Manager – The project consisted of the design and construction of a potable water distribution system for the Brisas de Salinas community. This scope included the installation of a 4-inch piping, line valves, and air release valves. Hydrants with anti-theft devices, new service connections with meters, and line drains for the new distribution system.

Design-Build Improvements to the Clarifier-Digester Tank at the Guayanilla WWTP
PRASA, Guayanilla, PR

Assistant Project Manager – Rehabilitation of the Clarifier-Digester tank. This included cleaning the tank, replacement of weir plates, baffle weirs, replacing the central bridge, skimmer and scraper, and other parts that needed to be updated.

David Trujillo, EIT

Permitting

Mr. Trujillo is a Water Engineer for Arcadis in South Florida where he primarily works on water and solid waste projects. He has previous experience as a permitting reviewer for stormwater permits, and he supports business advisory, planning and design and engineering projects.

Education/Qualifications

- BS, Environmental Engineering, Florida International University, 2022

Years of Experience

Total – 5
With Arcadis – 4

Professional Registration/ Certifications

- Engineer-in-Training – EIT

Professional Associations

- Water Environment Federation (WEF)
- Florida Water Environment Association (FWEA)
- American Water Works Association (AWWA)
- American Society of Civil Engineers (ASCE)

Relevant Experience

Hollywood FL, Maintenance Package 'A'
City of Hollywood, FL

Ongoing process/mechanical design lead for the replacement of lime silo dust collectors, vacuum drum filter, 24" storage tanks valves and other in-kind replacements at the City of Hollywood's water treatment plant. Performed permitting coordination.

Water and Wastewater Condition Assessment
Anne Arundel County Department of Public

Served as an onsite inspector to evaluate the existing conditions of Anne Arundel County's Water and Wastewater assets. Inspected and evaluated assets based on various parameters to capture the condition of process mechanical assets.

Buried Infrastructure Condition Assessment
Confidential Client

Served as an onsite inspector to evaluate nearly 20 miles of buried infrastructure using a non-destructive dynamic response to acoustic imaging technology (Kenwave Solutions). The assets ranged from 6" to 60" and consisted of transite, PCCP, ductile iron and cast Iron.

Asset Replacement Cost Analysis
Puerto Rico Aqueduct and Sewer Authority (PRASA), Puerto Rico

Performed replacement cost analysis for 113 water treatment plants, 51 Wastewater treatment plants, and over 21,000 miles of buried infrastructure using representative projects adjusted with Engineering News-Record and Robert Snow Means Data.

Miramar Nanofiltration Design
City of Miramar, Miramar, FL

Currently serving as process mechanical design support for four Nanofiltration arrays, and pretreatment, with each array producing 2.5-mgd for the Miramar West Water Treatment Plant. Supported design of replacement transfer pumps, chemical systems improvements and the addition of a new degasifier. Performed four log calculations and assisted with general design team coordination. Also supported preparation of plans and technical specifications. Applied and coordinated for FDEP and City Permits.

ASR-1 Well Plugging and Abandonment
City of Ft. Lauderdale, FL

Led overall coordination and prepared plans, specifications and permit application for the plugging and abandonment of a 1,000+ ft 16" diameter Aquifer Storage and Recovery (ASR) well and two associated monitoring wells at the City's Fiveash water treatment plant.

FY23 FMA Grant Management Services
City of St. Petersburg, FL

Completed four Flood Mitigation Assistance applications via FEMA GO on behalf of the City of St. Petersburg for several residential properties which required grant funding for structural modifications to protect against severe storm surge and rising sea levels. The client was awarded $1,814,686.45 to support the conceptualized design.

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Errol Dawkins, RA, LEED AP

Architecture and Landscape Architecture

Mr. Dawkins establishes the Arcadis water division's architectural design approach and technical direction and coordination of the architectural group. He is experienced in municipal design and construction projects, as well as industrial, institutional, commercial projects. As a Leadership in Energy and Environmental Design (LEED) accredited professional, he incorporates sustainable building strategies into his design projects. Mr. Dawkins has broad knowledge of the various building codes and standards, such as International Code Council (ICC), National Fire Protection Association (NFPA), Occupational Safety and Health Administration (OSHA), and American National Standard Institute (ANSI), to conduct building code reviews for various types of projects.

Education/Qualifications

- BA, Architecture, City University of New York City College, 1989
- BA, Architecture, City University of New York City College, 1988

Years of Experience

Total – 36
With Arcadis – 19

Professional Registration/ Certifications

- Registered Architect – FL, CT, DC, GA, LA, MA, NY, OH

Professional Associations

- Leadership in Energy and Environment Design Accredited Professional

Relevant Experience

Huntington Levee & Stormwater Pump Station Design & Construction Services
Fairfax County, VA

Lead Project Architect for the architectural design of two pumping station stations (155 MGD and 26 MGD) that provide flood protection for Fairfax County's Huntington Community. This project was Fairfax County's first project to achieve an Envision Award (Bronze) and is ENR Mid-Atlantic's 2020 Environment / Water Project of the Year and 2020 Excellence in Safety Best Project.

C-139 Flow Equalization Basin
South Florida Water Management District, Hendry County, FL

Lead responsible for architectural design and coordination with other disciplines for the design of a 690 cfs inflow pump station and out-flow structure for the C-139 SFWMD FEB project. The C-139 FEB is intended to assist in managing source basin runoff by attenuating peak flows and temporarily storing a portion of stormwater runoff prior to it being conveyed to STA-5/6.

Prospect Lake WTP Enabling Works, Replacement of Existing High Service Pumps at Fiveash Water Treatment Plant (WTP)
City of Fort Lauderdale, FL

Lead Architect for the design of the new High Service Pump Station and new Ground Above Grade Storage Tank. The scope includes 6 new horizontal split case pumps (70 MGD in total), 2 new generators, 2 new 20,000 gallons fuel tanks, and second story offices inside the new pump station building. The work also includes a 5 MG ground storage tank.

Water District No. 3 Gate of Heaven Pumping Station Design
Westchester County, Westchester County, NY

Served as Project Architect for the new Gate of Heaven Pump Station constructed adjacent to the existing Gate of Heaven Pump Station. The new pump station, which is 30 feet by 40 feet, is equipped with UV disinfection equipment, chemical feed pumps, and raw water pumps. The pump station was designed to blend into the site surrounding and incorporate sustainable design strategies. The facility is partially burdened onto the side of a hill and is a re-manufactured superstructure due to site constraints and project schedule.

Low Lift Pump Station - Pump Removal Design
North Jersey District Water Supply Commission, Wanaque, NJ

Architect for the Low Lift PS Pump Removal design project which provides roof access to large pumps for removal and replacement. Designed low profile roof top hatches on a historically significant building. Design included removal and replacement of trusses to support new roof top hatches. New trusses are designed to mimic the original angle iron steel trusses.

ARCADIS

Debra L. Hernandez, RLA

Architecture and Landscape Architecture

Ms. Hernandez has over 30 years in the field of landscape architecture. Her experience encompasses landscape designs for major land development projects including City, County and regional utilities, industrial and business parks, retail plazas, infrastructure facilities, mixed-use developments, high-end estates and multi-unit residential projects. Services provided include complete landscape designs, planting plans, hardscape elements and site amenities, public spaces and circulation, signage and entry features. Work history also includes field research and documentation of existing site conditions, preparation of tree inventory and relocation plans, and document preparation for tree mitigation and/or regulatory compliance.

Education/Qualifications

- Certificate of Landscape Architecture, University of California - Irvine, 1996
- Advanced Courses in Business Administration, California State University, 1982-1983
- Associate of Arts Degree, Orange Coast College, 1976

Years of Experience

Total – 30
With Arcadis – 12

Professional Registration/ Certifications

- Landscape Architect – FL

Relevant Experience

Copans Transit Operations and Maintenance Facility
Pompano Beach, FL

Arcadis is the Prime Consultant for Broward County Transportation Department, providing full architectural, engineering and landscape architectural services for the complete reconstruction of the existing County Transit Operation and Maintenance Facility on Copans Road in Pompano Beach. The new campus will serve as the operating and maintaining facility of a fleet of 250 battery electric buses.

Briny Avenue Streetscape
Pompano Beach, FL

Served as landscape architect for final design, project permitting, implementation and construction administration of this 'shared street' roadway revitalization project. Consider was given to the interaction between pedestrians, bicyclists and motorists, including smart growth and urban design concepts, to create a safe and enjoyable environment for the community. Project specifics include evaluation and preservation of existing mature vegetation, compliance with local codes and ADA requirements, and the logistical coordination to blend the new and existing paving, landscaping, lighting, site amenities and utilities.

Ultimate Sports Park
Apollo Park Improvements – Pompano Beach, FL

Provided landscape architectural services for the construction of a new soccer and track field on an open portion of a City park. New site features include a parking area, concession building, and bleachers. walkways, lighting, and site amenities. Landscape Architectural tasks include tree evaluation and preservation of the existing site trees, design and development of an upscale but code compliant landscape plan and a corresponding irrigation plan design. Additional tasks included construction document development and permit assistance.

Federal Express Distribution Center
Pompano Beach, FL

Landscape Architect for the 61,500 SF facilities expansion, which included a new guard house and security station and an additional overflow parking area. Design efforts included significant tree inventory for retention and relocation, blending new vegetation with the existing landscape, evaluation and adjustments to the existing irrigation system, and the design and implementation of current landscape code compliance for the entire facility.

ARCADIS

James Callahan, PE, CDT, LEED AP

HVAC

Mr. Callahan manages a multi-disciplinary design team consisting of HVAC, mechanical, electrical, structural, architects, and controls engineers. Project primarily focused on the water and wastewater industry. Mr. Callahan specializes in the design and engineering of heating, ventilating, and air conditioning (HVAC) and odor control systems for municipal and industrial clients. He is experienced in design of heating systems with steam, hot water, oil, gas, and electricity, as well as central air conditioning systems, forced air systems, fan coil systems, chilled water refrigeration systems, heat recovery systems, and industrial ventilation and exhaust systems. He is also responsible for air filtration, temperature and humidity control, corrosion, and water treatment.

Education/Qualifications

- MS, Environmental Engineer, Manhattan College, 1990
- BS, Mechanical Engineer, Manhattan College, 1986

Years of Experience

Total – 38
With Arcadis – 38

Professional Registration/ Certifications

- Professional Engineer – CA, CT, MA, NY, VA
- Certified Construction Documents Technologist (CDT)
- LEED Accredited Professional

Professional Associations

- United States Green Building Council

Relevant Experience

Owl's Head WRRF – Engine Generators and Main Substation Design, OH-95
New York City Department of Environmental Protection (NYCDEP), New York, NY

Project manager for the design of 3 engine generators (2.4 MW each), that will burn the plant's digester gas. Digester gas conditioning building which includes two sets of carbon adsorbers to remove the hydrogen sulphide and siloxane from the digester gas. This is required to prolong the life of the engine's internal and air pollution control equipment. The project also includes the construction of a new substation and building to step down from utility power at 27KVA to plant power at 4.5 KVA.

Sterling Natural Resource Center
East Valley Water District, Highland CA

Responsible for the design of a plant wide odor control system that draws air from headworks, aeration tanks for the solids handling building. The total air flow capacity is 67,000 cfm. The odor control design comprises 3 parallel flow Biotrickling filters followed by 3 carbon adsorbers in series. The equipment included Biotrickling filter vessels, dual-bed carbon absorbers, transfer fans, acoustical enclosures for the fans, FRP ductwork, and control system for local and remote monitoring of system functions.

Hamlin Water Reclamation Facility
Orange County, FL

Responsible for the design of the odor control system for the Sludge Holding Tanks. This system was comprised of 3-dual bed 14,500 cfm carbon adsorbers ducted in parallel. Oversaw a subconsultant's design of a Biotrickling filter and polishing carbon adsorber for the Preliminary Treatment Building. Also responsible for the odor control ductwork and heating and ventilating systems within the Pre-Treatment building.

Hartford WPCF, Wet Weather Expansion Project
The Metropolitan District, CT

Responsible for the odor control for the facilities process upgrade. The large format biofilter system treats air from 5 headworks and primary process buildings, for a combined air flow of 60,000 with expansion to 80,000. The initial biofilter configuration includes 4 cells with 2 additional for the future capacity. Features include FRP ductwork, transfer fans, humidification inlet plenum, flow control, and sound attenuation.

Sopeark Chhea, PE, LEED AP

HVAC

Mr. Chhea specializes in the design and engineering of heating, ventilating, and air conditioning (HVAC) systems for commercial and industrial applications. He is responsible for designs in packaged central station air handling systems, including constant and variable volume, split systems, industrial ventilation, exhaust and supply systems, laboratory systems, computer room systems, odor control systems and clean room air systems.

Education/Qualifications

- MS, Mechanical Engineer, Union College, 2007
- BS, Mechanical Engineer, Union College, 2006

Years of Experience

Total – 17
With Arcadis – 17

Professional Registration/ Certifications

- Professional Engineer – NY
- Leadership in Energy and Environmental – NY

Relevant Experience

Hollywood WTP – Aeration Building Pump Station
City of Hollywood, FL

Lead Building Mechanical Engineer, for the rehabilitation of the existing Aeration Building Pump Station (Secondary Pump Station). The work included the replacement of two (2) 4,500 gpm pumps with one (1) 5,000 gpm pumps with variable frequency drives, new valves, and piping. The work also includes a new electrical room.

Prospect Lake WTP Enabling Works, Replacement of Existing High Service Pumps at Fiveash Water Treatment Plant (WTP)
City of Fort Lauderdale, FL

Lead Building Mechanical Engineer, this project includes the detailed design of the new High Service Pump Station (HSPS) and new Ground Above Grade Storage Tank (AGST). The scope includes 6 new horizontal split case pumps (70 MGD in total), 2 new generators, 2 new 20,000 gallons fuel tanks, and second story offices inside the new pump station building. The work also includes a 5 MG ground storage tank.

Hartford Water Pollution Control Facility Wet Weather Expansion
The Metropolitan District, Hartford, CT

Assisted with the design of an odor control system by determining the required exhaust air flow rate of odor sources in the plant. Developed mechanical layout and detailed drawings. Performed design service during construction by reviewing shop drawing submittals and responding to RFIs.

Edgewater Pump Station Design
Bergen County Utilities Authority, Hoboken, NJ

Responsible for the design of HVAC systems and an odor control system serving the Edgewater Pump Station (PS). The PS is being constructed to eliminate the existing Water Pollution Control Facility (WPCF). HVAC systems include intake/exhaust ventilation systems, ductless split systems, and electric heating systems. The odor control system consists of a dual bed carbon adsorber, grease filter mist eliminator and fiberglass exhaust fan and ductwork to treat exhaust air pulled from the bar screening and dumpster area. Perform design service during construction by reviewing shop drawing submittals and responding to request forinformation (RFIs).

Chelsea Headworks Facility Upgrade and Odor Control System Evaluation and Design
Massachusetts Water Resources Authority, Boston, MA

Assisted with the design of a new odor control system by determining the required exhaust air flow rate of the headworks' process emission sources. Assisted with sizing the treatment equipment, developing mechanical layout and detailed drawings in AutoCAD MEP. Assisted with developing a high-capacity odor control system design within site constraints. Performed design service during construction by reviewing shop drawing submittals and responding to RFIs.

Cobbs Creek Reservoir Dam and Facilities Construction
County of Henrico, VA

Responsible for the design of HVAC systems serving a newly designed pump station comprised of three levels, a single-story operations building, and a fuel oil transfer system for a standby generator.

ARCADIS

Joseph Russo

Construction Superintedent and Inspection

Mr. Russo is a construction professional with more than twenty-three years of experience. My strengths lie in daily construction operations, including layout, civil earthwork, deep foundations, Pile installs. MEP installation, schedule management, quantity calculations, and supervision of numerous field crews on $5MM to $1B projects. In addition, I am experienced in subcontract management, direct hire work, Civil Site Work, Heavy Industrial, Solar, and Commercial building. I have been involved in projects ranging from mobilization through project closeout, including walking turnover packages and punching out items. With this extensive skill set, I can be an invaluable part of your project team.

Education/Qualifications

- Construction Management, Phoenix College

Years of Experience

Total – 23
With Arcadis – 2

Professional Registration/ Certifications

- NCCER Certified Plus Instructor
- NCCER Certified Project Manager

Relevant Experience

New North River Canal Improvements
South Florida Water Management District, Palm Beach County, FL

Construction manager for this project that consists of approximately 23.6 miles of canal improvements. The goal of the project is to increase the water conveyance of the North New River (NNR) Canal by 200 cubic feet per second above existing capacity while keeping water levels and flow velocities within specified limits.

Corbett Levy
South Florida Water Management District, Palm Beach County, FL

Senior Inspector responsible for oversight of $8.7M design-build-build construction rehabilitation improvements of Corbett Levee Phase 2 project.

SFWMD Pump Stations Monitoring Panels Replacement
South Florida Water Management District, Palm Beach County, FL

Senior Inspector responsible for oversight the replacement of monitoring panels at the S-2, S-3, S-4, S-7, and S-8 pump stations.

Black Diamond General Contracting
Jupiter, FL

Construction Manager. Els Center Building of Excellence; Pratt & Whitney Special Technologies Building and Build of Utility Trestle bridge crossing.

Zachry Construction
Tampa, FL

Site Superintendent. Responsibilities included: Supervise project from initial survey layout, auger cast piles, concrete foundations, permanent MEP installations, thru commissioning. This included implementing safety procedures, ensuring quality control, and maintaining production. Further performed QA/QC inspection of all foundations.

SWA-Palm Beach County Project
KBR Construction, Palm Beach County, FL

Site Superintendent. Responsibilities included: Supervise project from initial survey layout and Civil earthwork grading, installations, thru commissioning. This included implementing safety procedures, ensuring quality control, and maintaining production. Conducted on-site training for local hires in industrial construction. Installation of 3000 Auger cast piles.

PCL Construction, Enterprise Ethylene Export Project
Enterprise Products Partners L.P., Morgan's Point, TX

Site Superintendent. The new facility will reside within existing operating facilities and pipelines. The scope of work for the project includes engineering, procurement, and construction necessary to install the facilities. The ethylene export facility will have a capacity to export approximately 2.2 billion pounds of ethylene per year. Scope of work includes one train for processing 255,000 lb/hr ethylene and one 53,000-cubic-meter double-walled storage tank with a capacity of 30,000 metric tons, for a combined ship loading rate of 1.0 metric Ton/hr.

Eric Diaz

Construction Superintendent and Inspection

Mr. Diaz has 18 years of construction management and contracting experience in various wastewater and water treatment, pipeline conveyor projects, and water resource projects. He also has experience in various industrial process facilities for natural gas, power generation, and chemical projects. He has extensive heavy civil construction experience as a contractor superintendent, construction foreman, surveyor, field inspector and most recently as construction management professional. He is certified by the National Center for Construction Education and Research and a certified Procore Superintendent user. Mr. Diaz's diverse construction experience has allowed him to successfully take on new project assignments, address and resolve project challenges, and deliver high quality projects constructed on time and within the project budget. As a lead project inspector, he brings his insight and understanding of the full life cycle of a project from pre-planning, procurement, construction, start-up and testing to successful project completion.

Education/Qualifications

- Inspections, Piping, Quality Control, Testing, Electrical, Civil Supervision, Haskell University, 2024
- Construction Site Layout, KBR Training Center, 2016
- General Construction Supervision, PCL Training Center, 2015

Years of Experience

Total – 18
With Arcadis – 1

Professional Registration/ Certifications

- National Center for Construction Education and Research Certified (NCCER)
- Procore Superintendent Certificate

Relevant Experience

New North River Canal Improvements

South Florida Water Management District, Palm Beach County, FL

Senior inspector for this project that consists of approximately 23.6 miles of canal improvements. The goal of the project is to increase the water conveyance of the North New River (NNR) Canal by 200 cubic feet per second above existing capacity while keeping water levels and flow velocities within specified limits. The conveyance will be increased by excavating material from the bottom and sides of the canal along identified canal segments and depositing the spoil within the canal right-of-way (ROW) and/or removed to a near-by off-site Dredge Material Management Area (DMMA) location referred to as the Woerner Tract. The equipment being used in addition to the dredging equipment, includes 11 miles of 30" HDPE dredge pipe to convey the dredged material using five high-capacity pumps, which pump the dredged material to the DMMA location. The contractor supplemented the dredging operations with 30 excavators with long reach capabilities for the mechanical removal of canal cap rock. The excavated cap rock is removed via truck and disposed at the DMMA area. Also responsible for the project's quality control by ensuring the contractor complies with the project's specifications, drawings, approved submittals, owner's design standards and applicable building codes. He provides all quality control inspection and testing, maintains daily field reports with progress photos which are logged into the e-Builder. He is responsible for coordinating with Arcadis' surveyor and materials testing subconsultants. He conducts Davis Bacon interviews for certified payroll from payroll reports provided by the Contractor. He also is actively involved with all related project meetings, monitors the status of submittals, RFI's

Fort Pierce Utilities Authority (FPUA) Mainland Water Reclamation Facility

City of Fort Pierce Utility Authority, Fort Pierce, FL

Project superintendent for the construction of a new water reclamation facility. The FPUA Island Water Reclamation Facility is a 10 million gallon a day facility that treats the area's wastewater and discharges the treated effluent, into a deep injection well which is 3000+ feet deep, into the ground. The flows come from residential, commercial, and industrial facilities. All the flow is brought to the facility via 116 lift stations which pump the wastewater using a series of gravity and force main sewers.

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Kirk Lowery, PE, BC.GE

Geotechnical Engineering

Mr. Lowery is a geotechnical engineer with 30+ years of design and construction experience. Mr. Lowery's background includes performing field services; assessing; analyzing; and managing projects on a variety of environmental, civil construction, and geotechnical issues. Most recently, Mr. Lowery has been the lead geotechnical engineer, and in some instances, the Project Manager for the design and upgrade of new and existing flood protection systems.

Education/Qualifications

- B.S., Civil Engineering, Louisiana State University, 1987
- M.S., Civil Engineering, Louisiana State University, 2000

Years of Experience

Total – 38
With Arcadis – 13

Professional Registration/ Certifications

- Professional Engineer – AB, AK, FL, LA, VA, TX, NY, NM, MI

Professional Associations

- American Society of Civil Engineers – Louisiana Section Government Relations Chairman

Relevant Experience

Huntington Levee Project
Fairfax County, Virginia

Geotechnical Task Leader. Led geotechnical design for levees, I-walls, T-walls, pump stations, and drainage structures. Reviewed existing borings, recommended additional investigations, guided foundation and seepage designs. Supported preliminary/final designs, cost estimates, public feedback, and construction oversight, contributing to successful project completion in 2020.

C-18W Reservoir
South Florida Water Management District (SFWMD) Palm Beach County, Florida

Geotechnical Lead. Led geotechnical investigations and design for a proposed 9,500-acre-foot aboveground reservoir on a 1,600-acre former orange grove to support the Loxahatchee River. Oversaw borings, piezometers, field and lab testing, and delivery of geotechnical reports and technical memoranda covering seepage, stability, settlement, canal slopes, erosion protection, and structure foundations. Supported ongoing site investigations and seepage recirculation analyses for embankment and structure design.

NDRC Ohio Creek Flood Control Project
Norfolk, Virginia

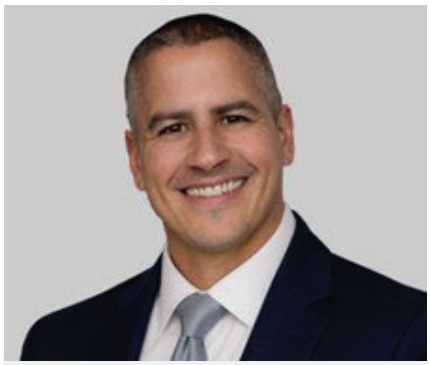
Geotechnical Lead. Led geotechnical investigations and design for a ~7,500-foot levee and flood reduction system. Conducted site characterization and designed levees, floodwalls, soil-nail and retaining walls, pump stations, culverts, and roadway embankments. Performed foundation design and evaluated settlement, seepage, and allowable levee slopes. Project is currently under construction.

GIWW West Closure Complex
USACE, Louisiana

Geotechnical Task Manager. Managed geotechnical design for hurricane protection along the Harvey, Algiers, and GIWW canals. Led junior engineers, coordinated with the client, and oversaw site reconnaissance, slope stability, seepage, and pile analyses. Supported preliminary plans, cost estimates, and documentation, and provided Independent Technical Review for the final selected alternative, including gates and a 20,000 cfs pump station.

Grand Prairie Pump Station Superstructure and Installation of Equipment
USACE, Arkansas

Project Manager for redesign of a 1,640 cfs pump station superstructure in northwest Arkansas to divert excess White River flows to Grand Prairie storage reservoirs. Managed civil, structural, architectural, electrical, and mechanical design, as well as cost engineering, ensuring USACE-compliant drawings, specifications, and on-time project delivery.



Armando Flores, MECE, EI

Geotechnical Engineering

Mr. Flores holds a master's degree in geotechnical engineering and brings extensive experience supporting professional engineers on complex heavy civil works projects at Arcadis. He develops finite element models and applies design loadings to assess seepage, embankment slope stability, foundations for deep and shallow structures, settlement and bearing capacity, and geotextile performance for railways and embankments. Combining technical expertise with practical insight, he delivers reliable, constructible designs that ensure safety, efficiency, and compliance with project requirements, providing tangible value to Arcadis and its clients across diverse geotechnical challenges.

Education/Qualifications

- M.E., Geotechnical Engineering, University of Puerto Rico at Mayagüez, 2014
- B.S., Civil Engineering, Polytechnic University of Puerto Rico, 201

Years of Experience

Total – 10
With Arcadis – 8

Professional Registration/ Certifications

- Engineer Intern

Professional Associations

American Society of Civil Engineers (ASCE)

Relevant Experience

Dam Safety Inspections
PRASA, Puerto Rico

Geotechnical Engineer. Led inspections of eight dams, assessed structural components and instrumentation data, and prepared reports with recommendations and risk mitigation strategies.

Cadillac Heights Levee
USACE, Dallas, TX

Geotechnical Engineer. Conducted pile group analyses using Ensoft GROUP, evaluating axial and lateral capacities of deep foundations and verifying compliance with USACE design standards for levees, floodwalls, and gate structures.

Mecca Farms Flow Equalization Basin
SFWMD, West Palm Beach, FL

Geotechnical Engineer. Contributed to geotechnical analyses for a 7,200-acre-feet storage facility, including settlement, bearing capacity, seepage, and slope stability assessments to ensure safe performance.

Puerto Nuevo Main Channel Design
USACE, San Juan, PR

Geotechnical Engineer. Conducted site evaluations and subsurface investigations, oversaw laboratory testing, performed engineering analyses, and prepared geotechnical reports to support the design and construction of channel improvements.

Helena Floodwall Replacement
USACE, Helena, AR

Geotechnical Engineer. Performed slope stability and seepage analyses for floodwall sections using GeoStudio, evaluating safety factors under multiple loading conditions to meet USACE criteria.

Gulf Coast Hardening Project
Chevron Phillips Chemical Company, Baytown, TX

Geotechnical Engineer. Conducted site evaluation, subsurface investigations, lab testing, drilled shaft capacity analyses, and prepared geotechnical reports to support flood protection system design.

Brownsville Levee and Floodplain Design Services
IBWC, Brownsville, TX

Geotechnical Engineer. Assisted with inclinometer installation and monitoring, analyzed slope stability using Slope/W©, and supported mitigation design to meet factor of safety criteria.

P Rockaway Inlet to East Rockaway Inlet Reformulation Study
USACE, New York, NY

Geotechnical Engineer. Performed lateral analyses of pile groups using Group 7.0©, optimizing pile embedment for a closure wall to control deflections and support coastal storm risk management design.

ExxonMobil Pipeline Support Design
EMPCo, Robertson County, TX

Geotechnical Engineer. Performed soil investigations and lab testing, prepared gINT© logs, and supported pile design.

ARCADIS

Tiffanee Grumbly

Environmental

Mrs. Grumbly has more than 24 years of diverse experience in both the public and private sectors. She has supported the management of Clean Water Act permits and plans in 23 states, including the preparation and management of approximately 70 Spill Prevention, Control, and Countermeasure (SPCC) Plans, Tier I Qualified SPCC Plans, and Facility Response Plans, requiring in-depth knowledge of 40 CFR Part 112 and coordination with multiple state licensed Professional Engineers and field staff. She also has extensive knowledge of state-issued National Pollutant Discharge Elimination System industrial storm water permits and associated requirements for documentation, permit renewal, inspections, and task tracking.

Education/Qualifications

- BS, Environmental Science, Texas A&M University, 2001

Years of Experience

Total – 24
With Arcadis – 18

Professional Registration/ Certifications

- Certified Project Manager

Professional Associations

- Roadway Worker Protection - Railroad Education
- E-Rail Certification
- 40-hour HAZWOPER

Relevant Experience

Environmental Management System Implementation and Management
Confidential Client, Multiple Locations

Performed quality oversight and management to ensure client protocols and practices were achieved. Effort included extensive review of existing compliance processes and tasks as well as an evaluation of all existing compliance permits and documentation to build-out compliance requirements in the new software. Continues to provide oversight so that Clean Water permits, tasks and reports are maintained and updated as new or revised permits are issued.

Annual CWA Compliance & NPDES Training
Confidential Client, Multiple Locations

Provided annual Clean Water Act training to qualified personnel. Training provided included an overview of compliance responsibilities required by National Pollutant Discharge Elimination System permit, Spill Prevention, Control, and Countermeasure Plan, and Facility Response Plans. This training was provided systematically to over 20 locations with attendance of rail personnel from different locations. The training also included an overview of local plan requirements, including those mentioned previously and any state or local requirements. In additional to this training, prepares and updates Storm Water Pollution Prevention Plans (SWP3), reviews and renews storm water permits, performs facility storm water compliance assessments, provides storm water training to personnel, develops, and manages a compliance database, prepares facility drawings, identifies Best Management Practices, and interprets state regulations related to storm water program compliance.

Compliance Oversight
Confidential Client, Selkirk, NY

Provided oversight of compliance and survey teams to map out facility drainage through visual observation of surface drainage features including maintenance holes, catch basins, and other surface drainage features. Completed analysis of over 100 points of data to complete sewer mapping and based on this information, provided guidance to field teams to install sewer identification tags.

Plan Reviews and Updates
Confidential Client, Confidential Location

Performs complete site reviews to update compliance plans associated with a 20-mile industrial facility and its discharge systems. Provided the review and update included a facility specific Storm Water Pollution Prevention Plan and Spill Prevention, Control, and Countermeasure Plan.

ARCADIS

Gregory Osthues, PE, IAM

Condition Assessment & CCTV

Mr. Osthues is a national technical director for water and wastewater and over 25 years of experience in managing and delivering utility asset management programs in support of facility and capital planning including: the development and implementation of service levels, asset inventory and condition assessment programs and operation and maintenance program evaluation and development. His experience includes the evaluation and implementation of asset management software including Decision Support Systems, Geographic Information Systems (GIS), and Computerized Maintenance Management Systems. He is certified from the Institute for Asset Management (IAM) with extensive background in the industry leading ISO 55000 and EPA/WRF Asset Management Frameworks for water and wastewater utilities.

Education/Qualifications

- MS Environmental Engineer Manhattan College 1994
- BS Civil Engineering University of Massachusetts 1987

Years of Experience

Total – 35
With Arcadis – 32

Professional Registration/ Certifications

- Professional Engineer – NY

Professional Associations

- Institute of Asset Management
- AWWA Asset Management Committee

Relevant Experience

Large Diameter Pipeline Evaluation and Replacement Program
JEA, Jacksonville, FL

Technical lead for development and implementation of non-destructive testing program for over 900 miles of large diameter pipelines (water transmission mains, sewer force mains and gravity sewer mains). Non-destructive technologies (NDT) include ultrasonic thickness (UT), electromagnetic (Rock Solid BEM), ultrasonic in-pipe (Pure SmartBall®), external acoustic (Echologics ePulse®), CCTV, and sonar. The overall program included desk-top risk evaluation, NDT field assessment planning, field oversight, data management and results review, and pipeline EUL evaluation. Business cases were prepared for renewal/replacement alternatives for the 5-year and 10-year CIP, and 40-year funding projections.

Risk and Condition Assessment of Water Distribution System
SAWS, San Antonio, TX

Technical lead for the large-diameter portion of the water main condition assessment program with various assessment methods, including Echologics' ePulse® for wall integrity, Rock Solid BEM for point inspections, and soils corrosivity testing to estimate remaining useful life. Results were integrated with overall distribution system assessment via Innovyze InfoAsset Planner to create a 5-year risk-based capital plan. Provided QA and technical review on overall distribution system risk assessment involving over 7,000 miles of pipeline and incorporating data from GIS, failure data from InforEAM and likelihood of failure predictions from Baseform machine learning platform.

Asset Management Program
Toho Water Authority, Kissimmee, FL

Condition and risk assessment task lead for Toho Water Authority's asset management program including 15 water and wastewater plants, over 300 lift stations and 2,000 miles of pipeline infrastructure. Activities included a gap analysis using the IAM SAM+ framework, a SAMP and Asset Management Plans (AMPs) for each asset class – wastewater pipelines and lift stations are complete, and water mains and treatment plants are scheduled. Each AMP development included updating the asset hierarchies, developing levels of service and KPIs, establishing assessment methodologies, creating risk profiles, defining projects for the 5-year CIP and estimating long-term capital investment needs.

Asset Management Program
TRWD, Fort Worth, TX

Technical advisor for development of asset management plans including transmission mains, pumping stations, pressure reducing stations, outlet works, and balancing reservoirs. The asset management program follows the recent ISO-55000 international standard framework.

ARCADIS

Viktor Cieslik, PE

Condition Assessment & CCTV

Mr. Cieslik has over seven years of experience including work on condition assessment, prioritization planning and data management focused on large programs involving municipal water distribution and combined, sanitary and stormwater collection systems design and construction. His work has included infrastructure evaluations, pump station rehabilitation, review of CCTV inspection videos, smoke testing, risk evaluation, and construction management. He is the senior lead for Arcadis' pipeline testing team, experienced in evaluating condition and remaining useful life of pressurized ferrous mains, plant piping, and pump station piping via Broadband Electromagnetic Tests.

Education/Qualifications

- MS, Management, University of North Florida, 2022
- BS, Civil Engineering, University of North Florida, 2018

Years of Experience

Total – 7
With Arcadis – 7

Professional Registration/ Certifications

- Professional Engineer – FL
- Confined Space Entry
- Occupational Safety and Health Administration (OSHA), 10-hr Construction Safety and Health Course

Relevant Experience

Large Diameter Water and Sewer Main Evaluation and Replacement Program
JEA, Jacksonville, FL.

Staff Engineer and Field Team Leader for the program to evaluate and prioritize the repair and/or replacement of the critical distribution and collection piping for the largest city by area in the continental US. Work included condition assessment of over 90 miles of water, force, biosolid, and gravity pipe utilizing a variety of non- destructive techniques including Electromagnet Flux, Ultrasonic, and Acoustic Thickness testing for pipes between 4-in and 84-in in diameter.

Nicholson Road CIPP Lining Project
JEA, Jacksonville, FL.

Construction Inspector for the rehabilitation of about 6,200 feet of 36-in to 42-inch ductile iron gravity sewer. The work consisted of rehabilitating all pipeline components between the start of the trunk line and the junction box upstream of the pump station.

High Risk Condition Assessment
JEA, Jacksonville, FL.

Conducted the physical condition assessment which involved the oversight of closed-circuit television and cleaning crews as well as the review of closed-circuit television inspections of the pipes. Then created capital improvement projects for JEA based on the results.

Holiday Road Pump Station Improvements
JEA, Jacksonville, FL

Condition Assessment Inspector for pump station piping to identify extents of internal and external pipe replacement required as part of pump station upgrades, diameter, including identification of original installed pipe class and degree of degradation to identify current replacement needs and prioritize future replacement work.

Inspection Services for ARV Maintenance optimization and Replacement Program
JEA, Jacksonville, FL.

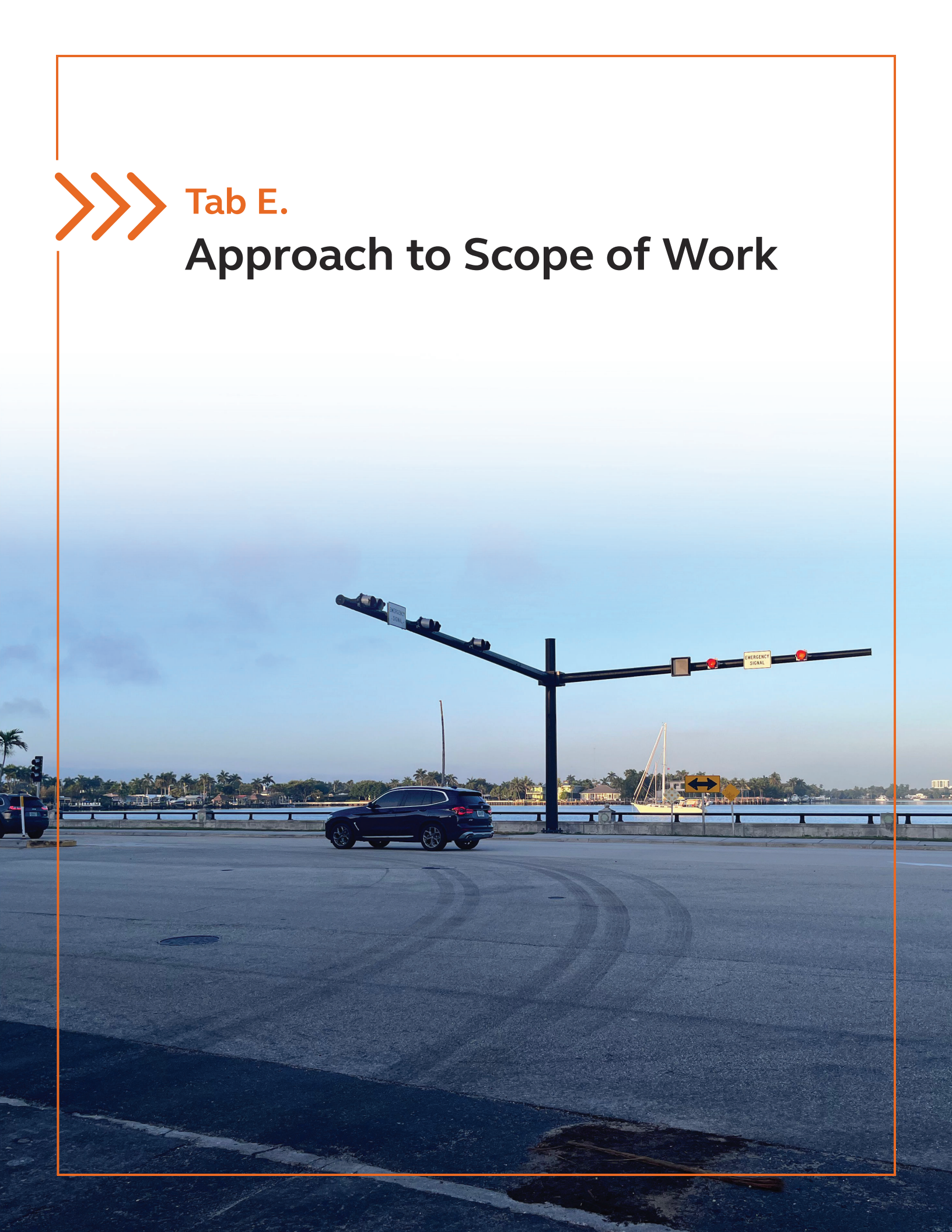
Staff Engineer for the program to evaluate and prioritize the repair and/or replacement of air release valves on 1,100 miles of 2-in to 54-in force mains. Work included the development and optimization of maintenance routes as well as inspection forms for crews to inspect the ARVs, creating a material cost estimate for the replacement of the full ARV assembly, the review of the ARV construction details, and developing an inspection program to evaluate and prioritize the repair and/or replacement of the valves in the system.

30-Year Funding Plan
JEA, Jacksonville, FL.

Junior Engineer for the program to create a 30-year analysis to provide annual funding recommendations for pipeline renewal and replacement as part of the Large Diameter Pipeline Evaluation and Replacement Program.

Tab E.

Approach to Scope of Work



Tab E. Approach to Scope of Work

Arcadis is fully prepared to deliver the requested engineering services for Stormwater Pump Station #16, serving the corridor between Jackson and Jefferson Streets along State Road A1A. With over 25 years of ongoing partnership with the City, Arcadis offers a strong understanding of local needs and permitting pathways, stakeholder coordination, and infrastructure challenges.

As a full-service consultant, Arcadis will provide design, permitting, and construction administration, ensuring cohesive and efficient project delivery from project kickoff to closeout.

Anticipating Site and System Challenges

We recognize that rising tailwater conditions and king tides will affect the existing gravity system, leading to increased pump run times and higher operational costs. Our approach integrates hydraulic modeling that accounts for NOAA's intermediate high sea level rise projections through 2070, ensuring the system remains effective under future conditions. Arcadis will prioritize system redundancy, utilizing variable frequency drives and pumps designed for large head fluctuations as we have successfully implemented in Huntington Levee and Stormwater Pump Station in Fairfax County, VA and Windsor Woods Flood Mitigation in Virginia Beach, VA.

Huntington Levee Rendering

Minimizing Community Impacts

Given the pump station's proximity to residential areas, our team will apply low impact development principles. We will use acoustically attenuated enclosures, odor control measures, and landscape architecture to help the facility blend into the streetscape and minimize public concerns. These strategies have proven effective in similar urban settings, such as the Hooff's Run Culvert Bypass and Alexandria Waterfront projects, where community engagement and transparent design helped build support and reduce disruptions.

City of Norfolk

Project Understanding

For years, the area of Hollywood Beach has experienced chronic flooding not just due to typical summer storm events, but also due to the king tide events every year during the months of September to December. The area from Jackson Street to Jefferson Street along state road (SR) A1A and the beach Boardwalk have been severely affected due to its low-lying condition (ground elevation between 1-5 feet above sea level) and proximity to the Intracoastal Waterway and the Atlantic Ocean. **Figure 1** below shows the basin of the project area.

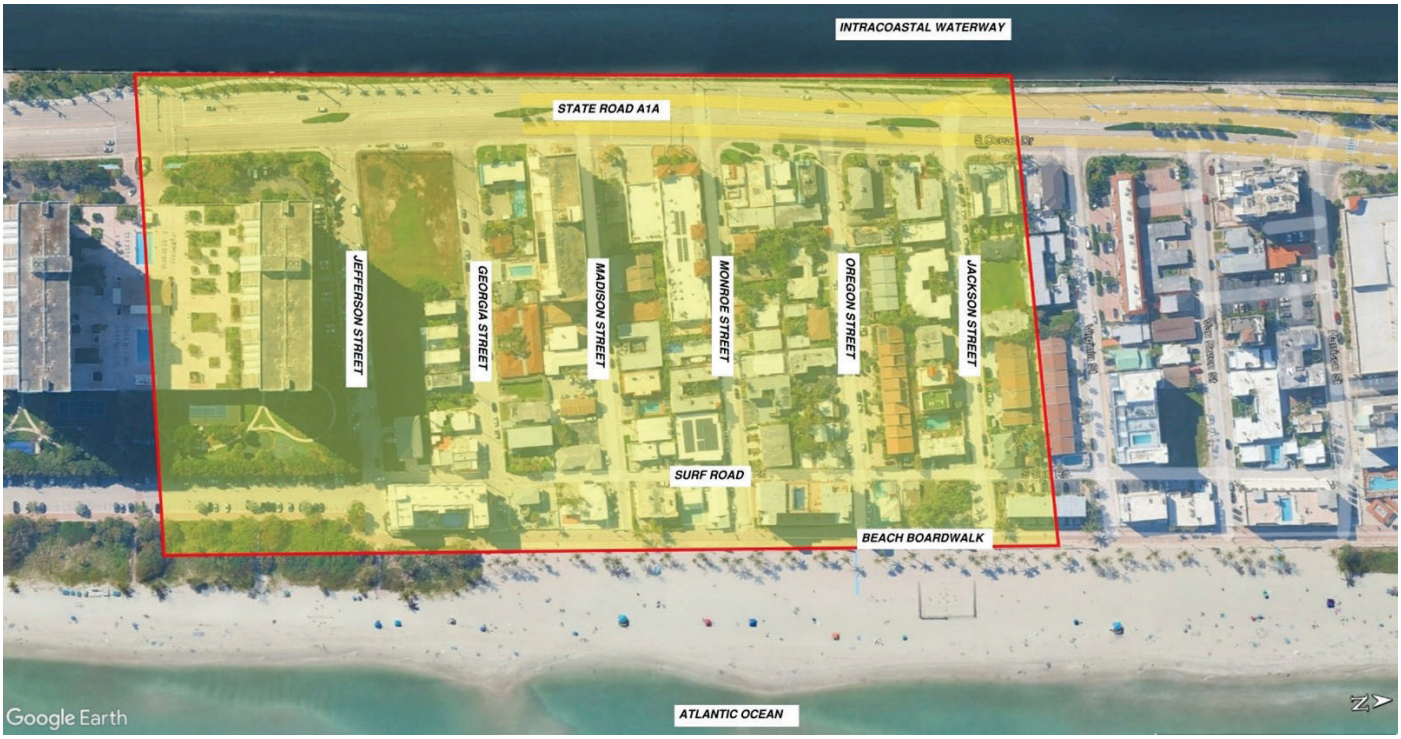


Figure 1. Aerial of Project Area

The area is composed of three (3) individual systems or basins. Each of these systems is composed of catch basins (inlets) and gravity lines convey the stormwater to the existing outfalls discharging to the Intracoastal Waterway. The specifics of each of the 3 systems are as follow.

- **System No. 1** – This is the largest of the three systems. The system includes infrastructure along Monroe Street, Oregon Street, Jackson Street, and State Road A1A. The existing stormwater gravity system is comprised of 1,435 linear feet of 18" in. diameter pipe, 541 linear feet of 24" in. diameter pipe and 64 linear feet of 30" in. diameter pipe. There are 19 inlets within this system.
- **System No. 2** – This is the second largest system. The system includes infrastructure along Georgia Street, Madison Street, and State Road A1A. The existing stormwater gravity system is comprised of 57 linear of 15-in. in diameter pipe, 474 linear feet of 18" in. diameter pipe, 348 linear feet of 24" in. diameter pipe and 59 linear feet of 30" in. diameter pipe. There are 11 inlets within this system. Within this system, the Hollywood Fire Rescue Station 40 is located.
- **System No. 3** – This is the smallest of the 3 systems. The system includes infrastructure along Jefferson Street, and State Road A1A. The existing stormwater gravity system is comprised of 106 linear of 15-in. in diameter pipe, 419 linear feet of 18" in. diameter pipe, 218 linear feet of 24" in. diameter pipe and 54 linear feet of 36" in. diameter pipe. There are 7 inlets within this system.

Having only a gravity system presents some challenges, due to the proximity to the Intracoastal Waterway and high tides combined with the low elevation of the system, the only way to drain the systems is when the water level in the Intracoastal goes below the outfall elevation. **Figure 2.** below, taken from the City's Stormwater Master Plan, shows the current flood condition for a 10-year storm event.

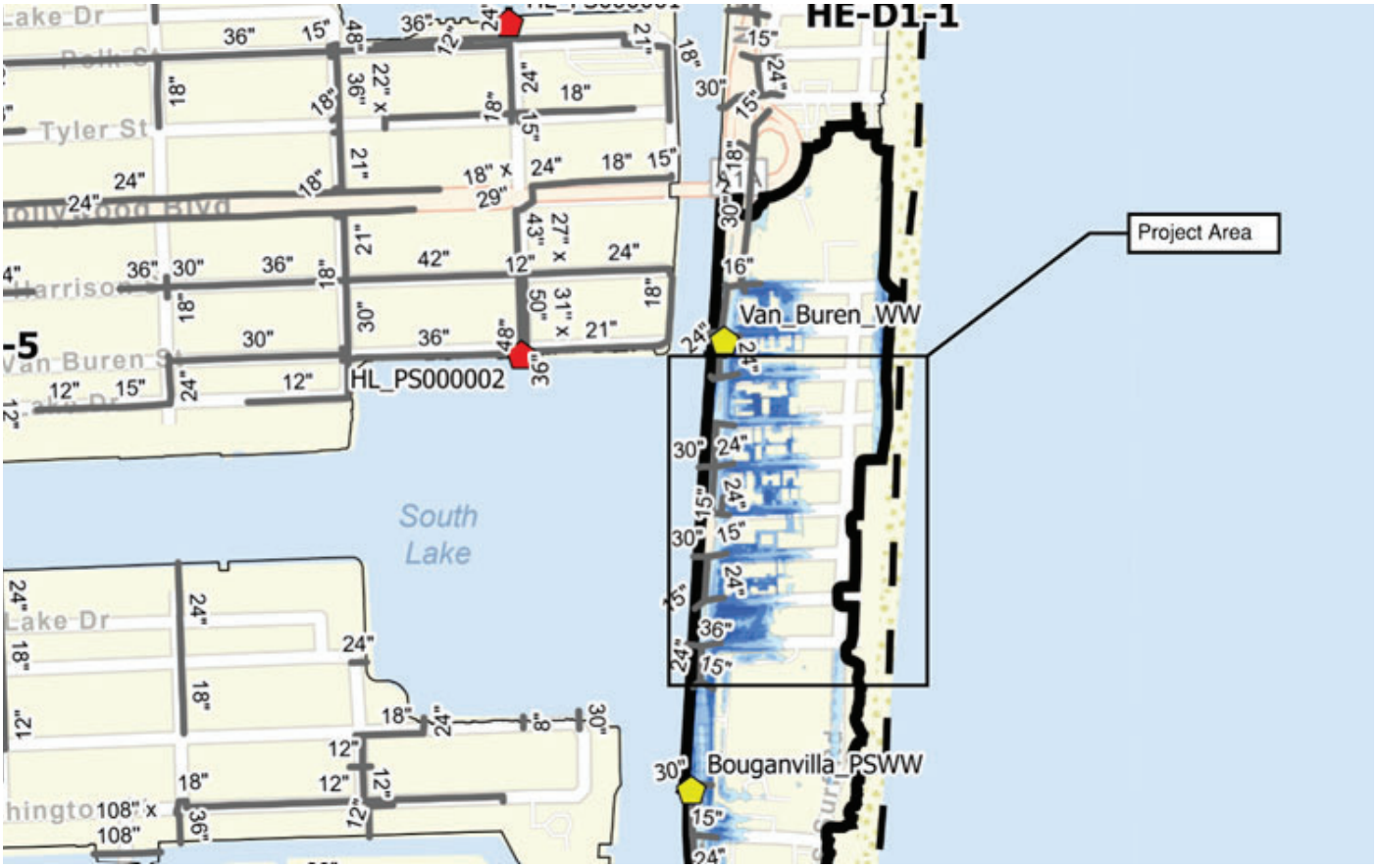


Figure 2. Current Flood Condition

To have a system capable of draining the streets, independently of the groundwater elevation and tide conditions, the City is proposing a new stormwater pump station (Pump Station #16). Arcadis recognizes that this pump station is essential to flood protection along Jackson to Jefferson Street on SR A1A. We have delivered similar urban stormwater pump stations as the prime consultant, including Windsor Woods in Virginia Beach and the North/West Resiliency project in New York City. For Hollywood, we will bring the same project management rigor, technical skills, and coordination that ensured successful outcomes on those projects.

Existing CRA Project

Our team is familiar with the project site and we understand that currently there is an CRA existing project for the undergrounding of overhead utilities and streetscape beautification (PHASE IV) from Harrison Street to Magnolia Terrace. This existing project includes the installation of new underground infrastructure, including new inlets and stormwater pipes, as well as communications infrastructure. The images to the right show the new infrastructure installed on Jefferson Road which would be in conflict with Alternative 2 evaluated in the BODR.

Pump Station #16 Proposed Locations to be Evaluated

Our topographic surveyor, SUE, and Arcadis will work closely with the third-party utilities to ensure the recently-installed infrastructure is included in our topographic survey. Identifying these conflicts early in process will help in eliminating major changes late during the design phase and reducing change orders and claims during the construction phase.

Fire Station #40 Access and Egress Impacts

One of the alternatives evaluated in the BODR proposed the new Pump Station #16 in the median of SR A1A. Given the proximity of this location to the City of Hollywood Fire Station #40, it is essential for the design team to ensure that the project does not adversely impact emergency response operations. This is key, especially since it would impact the ability of the fire truck to travel southbound from the station. Early and ongoing coordination with the Fire Department will be key to the success of the project and the safety of the neighbors. Arcadis will develop and evaluate alternatives to minimize or eliminate impacts on the Fire Station operations. Some of these could include adjusting the pump station footprint or orientation, or scheduling construction activities to avoid peak emergency response times.

Access/Egress Considerations for Fire Station #40

Overall Approach to Performing Work

Arcadis will provide complete engineering services for Stormwater Pump Station #16, following the requirements of Tab 4 in the CRA/City's RFQ and the detailed process outlined in the reference Basis of Design Report (BODR). Our method is founded on technical rigor, transparent alternatives analysis, and a structured plan development process, leveraging both our in-house expertise and trusted local partners (Javier Bidot & Associates for survey, KEITH for SUE, WIRX for geotechnical).

Data Collection, Site Assessment, and Project Initiation

We begin with a kickoff meeting with CRA/City staff, regulatory agencies, and stakeholders (including Fire Station #40 representatives) to confirm project goals, schedule, and communication protocols:

- **Survey (Topographic and Bathymetric) and Utility Locates**: Javier Bidot & Associates will provide updated topographic and utility surveys, along with all required bathymetric and environmental surveys. KEITH will deliver subsurface utility locating as necessary.
- **Geotechnical Investigation:** WIRX will conduct soil borings and groundwater testing for wet well and pipe alignment constructability.

Alternative Analysis

Preparation and Evaluation

- **Development of Alternatives:** Arcadis will prepare at least three technically viable alternatives for pump station location, system configuration, and outfall design, each with schematic layouts and order-of-magnitude cost estimates. The pros and cons of each alternative will be shared with the CRA/City. Each alternative will be sized and evaluated using the ICPR4 Stormwise hydrologic and hydraulic model, reflecting the BODR-established design flow rate of 61 cubic feet per second (cfs) for the 25- and 50-year storm events.
- Each alternative will consider not only the pump station location and configuration but also the associated outfall improvements. Alternatives will evaluate the use of gravity drainage through new or existing outfalls when possible, to minimize pumping operation costs. Our approach includes evaluating outfall size, location, backflow prevention measures, and integration of water quality treatment structures to ensure compliance with regulatory standards and to minimize tidal and storm-driven backflow.

Design Flow Rates for Pump Station #16 (from BODR)

The BODR includes results from hydrologic and hydraulic modeling for multiple storm events (5-year, 10-year, 25-year, 50-year), providing maximum flows at key points in the system, including the pumps.

For the primary pump station node ("PUMPS"), the following maximum modeled flows are reported:

Flow Values

- 10-year, 8-hour storm: Max Flow at PUMPS: 30.89 cfs
- 25-year, 72-hour storm: Max Flow at PUMPS: 61.09 cfs
- 50-year, 1-hour and 8-hour storms: Max Flow at PUMPS: 61.06 – 61.13 cfs

The most conservative (highest) design flow rate reported for the pump station is approximately 61 cfs for the 25-year and 50-year events.

Stakeholder Engagement and Selection

- Workshops: Arcadis will facilitate technical and community workshops, using input received at these engagements to refine alternatives and support a collaborative selection process.
- Decision Framework: The CRA/City will select the preferred alternative using the evaluation matrix and supporting technical documentation.

Arcadis employs a structured, transparent evaluation matrix to guide alternatives selection, ensuring all technical, operational, community, and financial criteria are considered and balanced in a way that supports stakeholder consensus and defensible decision-making.

Each alternative will be scored using a weighted matrix that typically includes:

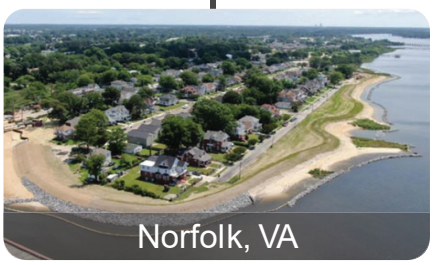
Criteria	Sample Weight	Description
Flood Risk Reduction	30%	Effectiveness at eliminating flooding and ponding duration

Criteria	Sample Weight	Description
Lifecycle & O&M Costs	20%	Pump run times; Capital, energy, maintenance, and replacement costs
Constructability & Schedule	20%	Utility conflicts, construction phasing, traffic impacts
Permitting Complexity	15%	Multi-agency requirements, potential for delays
Community/Stakeholder Impact	15%	Access, noise, aesthetics, emergency response, disruptions

Scoring for each criterion is based on both quantitative analysis (modeling results, cost estimates) and qualitative factors (community feedback, permitting risk). The CRA/City and stakeholders will be invited to adjust the criteria and weighting of criteria during facilitated workshops, ensuring the evaluation reflects CRA/City priorities and risk tolerance.

This process was successfully implemented in several recent Arcadis projects:

Ohio Creek Watershed



Arcadis developed and used a multi-criteria matrix to compare stormwater infrastructure and pump station alternatives, incorporating flood reduction cost, constructability, and community input. The matrix was presented to stakeholder meetings, allowing transparent discussion and consensus-building.

Huntington Levee and Stormwater Pump Station

A similar scoring matrix enabled the project team and County staff to select the most resilient and cost-effective flood control configuration, balancing regulatory, operational, and neighborhood constraints.

Hoof's Run Storm Sewer Upgrades

Alternatives were modeled and scored using a weighted evaluation matrix with public meetings used to review trade-off and define priorities before the City selected the preferred alternative.

For Hollywood's Pump Station #16, this matrix-driven approach will:

- Objectively compare at least three alternatives for siting, configuration, and operational strategies
- Clearly communicate pros and cons to CRA/City staff, permitting agencies, and the public
- Allow weighting adjustments to reflect local priorities
- Document the rationale for selection, supporting permitting and future funding applications

The evaluation matrix and workshop process are a proven tool used by Arcadis for building consensus, enhancing transparency, and ensuring the selected alternative best meets the CRA/City's flood mitigation, operational, and community objectives.

Plan Development: 30-60-90-100% Milestone Process

Arcadis will guide the project through a structured plan development process with clearly defined 30%, 60%, 90%, and 100% design milestones. At each stage, we will advance the design of all major system components including the pump station, gravity conveyance improvements, and the outfall. Outfall enhancements, such as structural modifications, new check or gate valves, and necessary environmental controls, will be detailed and refined throughout these milestones to ensure optimal system performance, facilitate regulatory review and permitting, and support long-term operational reliability. This phased approach allows for focused input from the CRA/City and permitting agencies at each step, ensuring that all technical, operational, and regulatory requirements are addressed before final construction documents are prepared.

30% Schematic Design

At the 30% design stage, Arcadis will prepare and submit a package that includes the cover sheet, general notes, schematic plans and profiles, the initial site layout, preliminary hydraulic calculations, and a permitting matrix. This submittal will also provide identification of all required permits, a summary of the alternatives evaluation process, the Pump Station #16 specific BODR, and any drainage reports required by permitting agencies. The 30% design documents will be formally submitted to the CRA/City for their review, allowing for input and early identification of any project issues or concerns.

60% Design Development

At the 60% design stage, Arcadis will provide advanced design drawings, draft technical specifications, and documentation of utility conflict resolution, along with a detailed basis-of-design narrative and preliminary structural and electrical design details. The 60% design documents will be distributed to all relevant permitting agencies for preliminary review and comment. In addition, this phase will include the identification of long-lead equipment and early procurement recommendations to help minimize project schedule risks.

90% Design Documents

At the 90% design stage, Arcadis will submit a complete set of design documents that incorporate all comments from the CRA/City and permitting agencies, resolve any outstanding conflicts, and include updated cost estimates. This submission will support final coordination with the CRA/City and relevant agencies and will serve as the foundation for assembling the bid-ready construction documents.

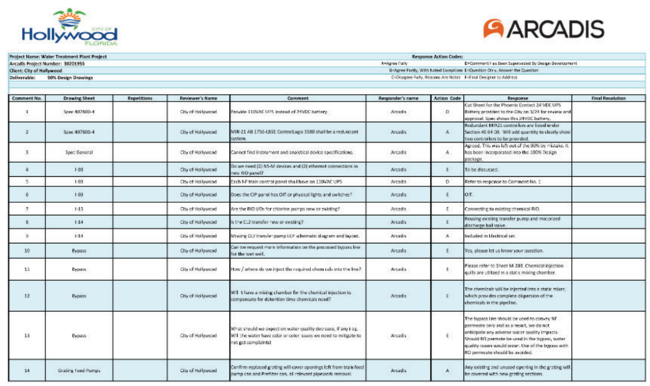
100% Construction Documents

At the 100% stage, Arcadis will deliver signed and sealed construction drawings, survey and demolition plans, geotechnical and structural details, environmental mitigation plans, and final technical specifications, along with all required permit application packages. These documents will be submitted for all necessary permits and final agency approvals, with Arcadis tracking and responding to any agency comments to expedite the permit receipt process. The final delivery construction documents will be bid-ready, and Arcadis will provide support during the contractor solicitation and bidding phase as described on the following page.

Quality Assurance and Quality Control during Design Phase

Arcadis incorporates a robust Quality Assurance/Quality Control (QA/QC) program throughout the design phase to confirm that deliverables meet the CRA/City's standards and project objectives.

At Arcadis, quality is a cornerstone of every project we undertake. To ensure success, reliability, and durability of our infrastructure projects, we implement a comprehensive Quality Management Plan (QMP). This plan serves as the foundation for systematically managing and reviewing all project deliverables, ensuring they meet the highest standards of accuracy, compliance, and performance. By integrating quality management into every phase of the project lifecycle, from initial design to final documentation, we proactively prevent costly errors while delivering high-quality infrastructure improvements that align with the City expectations.


Project Name: Water Treatment Plant Project
Arcadis Project Number: 30201955
Client: City of Hollywood
Deliverable: 90% Design Drawings

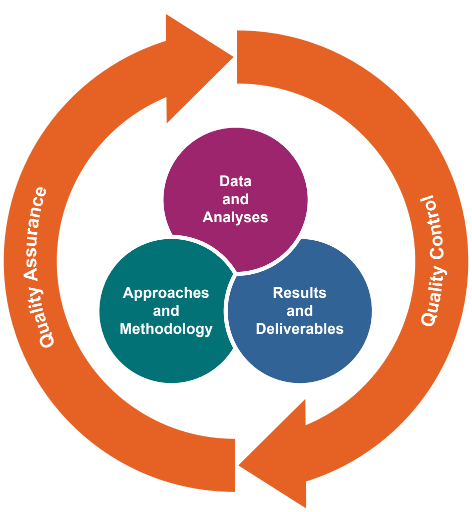
Response Action Codes:
A=Agree Fully; B=Agree Partly, With Noted Exceptions; C=Disagree Fully, Reasons Are Noted; D=Comment Has Been Superseded By Design Development; E=Question Only, Answer the Question; F=Final Designer to Address

Comment No.	Drawing Sheet	Repetitions	Reviewer's Name	Comment	Responder's name	Action Code	Response	Final Resolution
1	Spec 407800-4		City of Hollywood	Provide 110VAC UPS instead of 24VDC battery.	Arcadis	D	Cut Sheet for the Phoenix Contact 24 VDC UPS Battery provided to the City on 3/24 for review and approval. Spec shows this 24VDC battery.	
2	Spec 407800-4		City of Hollywood	MIR-21 AB 1756-L85E ControlLogix 5580 shall be a redundant system.	Arcadis	A	Redundant MIR21 controllers are listed under Section 40 64 00. Will add quantity to clearly show two controllers to be provided.	
3	Spec General		City of Hollywood	Cannot find instrument and analytical device specifications.	Arcadis	A	Agreed. This was left out of the 90% by mistake. It has been incorporated into the 100% Design package.	
4	I-03		City of Hollywood	Do we need (2) N5-M devices and (2) ethernet connections in new RIO panel?	Arcadis	E	To be discussed.	
5	I-03		City of Hollywood	Each NF train control panel shall have an 110VAC UPS	Arcadis	D	Refer to response to Comment No. 1	
6	I-03		City of Hollywood	Does the CIP panel has OIT or physical lights and switches?	Arcadis	E	OIT.	
7	I-15		City of Hollywood	Are the RIO I/Os for chlorine pumps new or existing?	Arcadis	E	Connecting to existing chemical RIO.	
8	I-14		City of Hollywood	Is the CL2 transfer new or existing?	Arcadis	E	Reusing existing transfer pump and motorized discharge ball valve.	
9	I-14		City of Hollywood	Missing CL2 transfer pump LCP schematic diagram and layout.	Arcadis	A	Included in Electrical set.	
10	Bypass		City of Hollywood	Can we request more information on the proposed bypass line for the wet well.	Arcadis	E	Yes, please let us know your question.	
11	Bypass		City of Hollywood	How / where do we inject the required chemicals into the line?	Arcadis	E	Please refer to Sheet M-203. Chemical injection quills are utilized in a static mixing chamber.	
12	Bypass		City of Hollywood	Will it have a mixing chamber for the chemical injection to compensate for detention time chemicals need?	Arcadis	E	The chemicals will be injected into a static mixer, which provides complete dispersion of the chemicals in the pipeline.	
13	Bypass		City of Hollywood	What should we expect on water quality decrease, if any (e.g. Will the water have odor or color issues we need to mitigate to not get complaints)	Arcadis	E	The bypass line should be used to convey NF permeate only and as a result, we do not anticipate any adverse water quality impacts. Should RO permeate be used in the bypass, water quality issues would occur. Use of the bypass with RO permeate should be avoided.	
14	Grating Feed Pumps		City of Hollywood	Confirm replaced grating will cover openings left from train feed pump can and Prefilter can, all relevant pipework removal	Arcadis	A	Any existing and unused opening in the grating will be covered with new grating sections.	

The QMP provides a structured framework for QA/QC activities, ensuring that deliverables such as design documents, inspection reports, and final as-built drawings are thoroughly reviewed and validated. QA activities involve rigorous planning and procedural checks to ensure that project deliverables meet both Arcadis and client standards. QC activities focus on verifying the accuracy and completeness of outputs through detailed reviews, peer evaluations, and compliance checks. This dual approach allows Arcadis to identify and address potential issues early, reducing risks and ensuring a seamless transition between project phases.

Our QMP is not just about technical reviews; it is also about fostering a culture of quality. Arcadis emphasizes proactive communication and collaboration among all stakeholders to ensure alignment on quality objectives and expectations. By engaging clients, contractors, and regulatory agencies throughout the process, we ensure that quality remains a shared priority.

Our QA/QC process will involve systematic reviews at each design milestone (30%, 60%, 90%, and Final Design Submittals), focusing on accuracy, completeness, and compliance with the CRA/City's standards. Reviews will be conducted by senior technical experts to identify and resolve discrepancies, optimize design elements, and ensure alignment with project goals. Additionally, all deliverables, including construction drawings, specifications, and cost estimates, will undergo detailed checks to ensure clarity, feasibility, and consistency. By integrating QA/QC into every stage of the design process, we deliver solutions that meet the highest standards of performance, reliability, and sustainability.



Construction Phase Services

During the construction phase, Arcadis will provide comprehensive services including shop drawing and submittal review, quality assurance and quality control, and field engineering support. We will oversee system installation, startup, and commissioning to ensure the pump station operates as designed. At project closeout, Arcadis will prepare detailed Operations & Maintenance manuals and deliver training for City staff to facilitate smooth and effective system operation.

Minimizing Pump Run Times and Lifecycle Costs

At each stage, Arcadis will prioritize:

- **Gravity System Rehabilitation:** Cleaning, CIPP lining, and repairs to maximize use of gravity drainage.
- **Smart Controls:** SCADA integration and level sensors to ensure pumps run only when necessary.
- **Futureproofing:** Sizing and controls to accommodate changing tides and precipitation frequencies.
- **Stakeholder/Community Concerns:** Limiting impacts through careful traffic planning, architectural landscape screening, and ongoing communication.

Permitting and Utility Coordination

Arcadis will identify all required permits during the 30% phase and initiate pre-application meetings with South Florida Water Management District (SFWMD), United States Army Corps of Engineers (USACE), Broward County, and Florida Department of Environmental Protection (FDOT). Ongoing utility coordination will be led by KEITH and Arcadis' project manager, with regular updates to avoid delays.

Any new outfall structure will require USACE permit. As part of this permitting process, typically a benthic survey is required to confirm benthic resources in the Intracoastal Waterway are not impacted with the new outfall. This benthic survey can only be performed during a specific window of the year. Having pre-application meetings as part of the 30% design will ensure that project schedule is not impacted because of permit restrictions.

Schedule Control and Communication

We will use Critical Path Method (CPM) scheduling and provide monthly progress reports comparing planned vs. actual progress. Major decision points and CRA/City review milestones are clearly mapped to the 30, 60, 90, and 100% phases, allowing for early issue identification and collaborative resolution.

At Arcadis, we recognize that clear and consistent communication is critical to the success of any project. To ensure the CRA/City remain fully informed and engaged, we place great importance on regular, transparent updates throughout the project lifecycle. As part of this commitment, we intend to schedule and lead biweekly progress meetings, providing a structured forum to review milestones, receive input and address any feedback promptly, and align on next steps. This proactive communication approach fosters collaboration, minimizes risks, and helps keep the project on schedule and within budget. Furthermore, given the high-profile nature of the project site along SR A1A and the Boardwalk corridor, effective public and stakeholder engagement will be essential. We will leverage the extensive expertise of our partner, Dickey Consulting, who specializes in community outreach and stakeholder relations for neighborhood infrastructure projects. Their proven strategies will help ensure transparent communication, build public trust, and facilitate meaningful dialogue with residents, businesses, and local officials throughout the project, ultimately fostering a collaborative environment that supports successful project delivery.

In summary, the Arcadis approach fulfills all RFQ requirements including alternatives analysis, phased plan development, stakeholder engagement, permitting, and constructability review — while leveraging proven methods and local partnerships to ensure a resilient, cost-effective, and community-supported project.

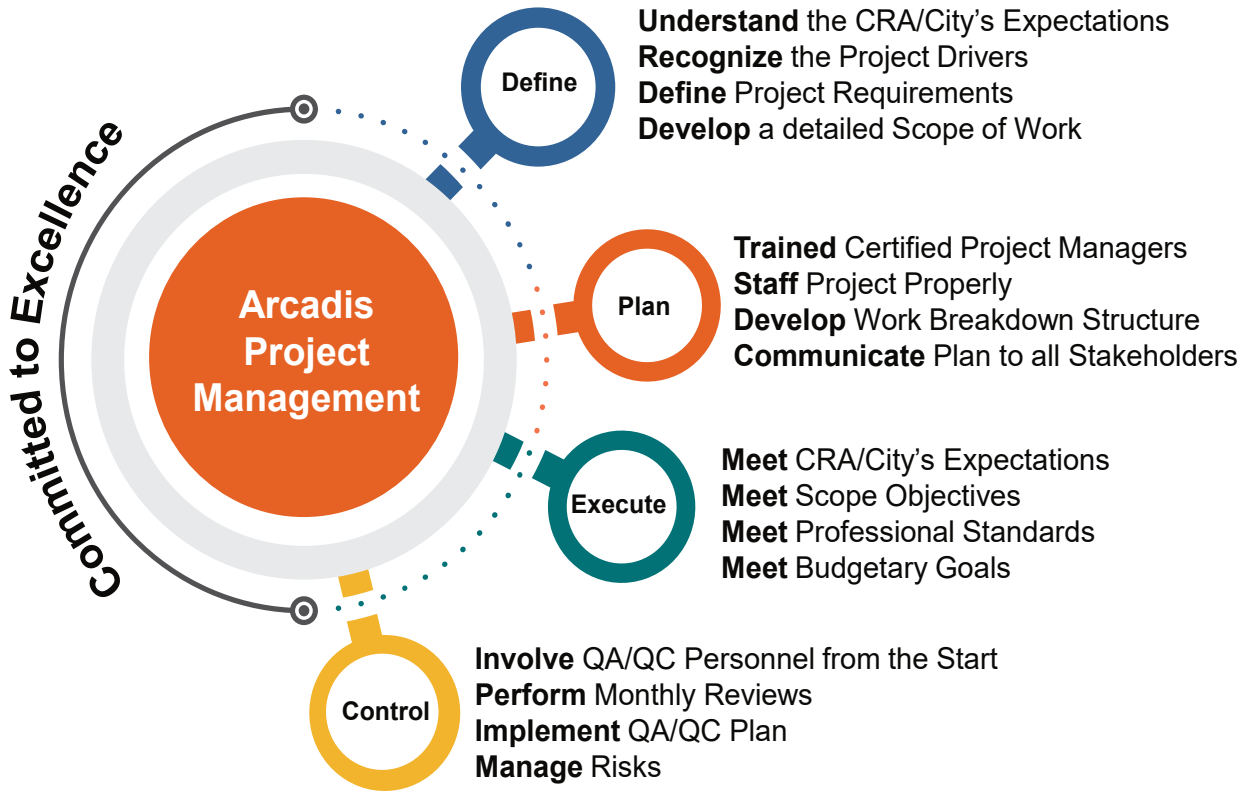
Firm's Current Workload

As a coastal community, we recognize how important sea level rise, stormwater management and flood protection are to the CRA/City. Based on this, Arcadis has identified a local team based in the tri-county area and operating from our Plantation office. By utilizing local staff, we will eliminate travel-related delays and will ensure that our team is available for onsite coordination with the CRA/City, FDOT and permitting agencies on short notice. Our current project pipeline has been scheduled to peak prior to the anticipated design stage of this pump station project, ensuring that our project manager and technical leaders have the undivided attention required to navigate this project. We understand that permitting and coordination with stakeholders will be key for the success of this project and our team will be available from the notice to proceed to ensure successful project completion.

Team Availability

Arcadis' client-focused Project Management Approach (PMA) places a strong emphasis on the early development of a project schedule. MS Project comprises a critical component of our PMA suite of tools, enabling us to create resource loaded schedules so we are immediately aware when project staff may be over-committed. Project schedules are also routinely evaluated against financial data and scope progress during monthly review meetings, so we become immediately aware of variances between earned value, planned value, and actual costs. The use of a resource-loaded schedule and repeated review of performance against the established project schedule allows our project managers to improve efficiencies in schedule adherence by proactively addressing bottlenecks that typically arise when staff have too many competing assignments. Further, these tools and review processes serve as checkpoints ensuring that actual progress in completing the scope is in alignment with the established project schedule and that we are spending our approved budget at an appropriate pace. The advantages of this aspect are clear and can be demonstrated through our recent work as your Public Utilities Water Treatment Plant engineer.

Through the decades of working for you, we have a solid understanding of the importance you place on timely performance and schedule adherence. Our Principal-in-Charge, Leah Richter, and Project Manager, Paul Walansky, are recognized for timely performance in delivering projects they manage. Our PMA tools and emphasis on continuous schedule review will provide additional tools in achieving solid schedule performance on this project.



Scalability and Flexibility: Arcadis deploys flexible, right-sized expertise and capacity to ensure efficient, timely delivery

Arcadis is committed to delivering high-quality designs with the adaptability and capacity to manage multiple, concurrent projects under this Contract for the CRA/City. Our approach to scalability is underpinned by a robust organizational structure, advanced digital tools, and a flexible resource management strategy. This approach is supported by these five (5) pillars explained below.

Deep Bench of Resources and Multi-Disciplinary Expertise

Arcadis maintains a diverse pool of engineers, hydraulic modelers, environmental specialists and project managers who can be rapidly allocated to meet shifting project demands. In addition to our Plantation office, we have two (2) other local offices (Coral Gables and Boca Raton) with staff with expertise in pump station design.

Digital Collaboration Platforms

We utilize platforms such as BIM 360 and Microsoft Teams to enable real-time collaboration, document control, and transparent communication across multiple teams. Our digital workflows and templates streamline design, reviews, and approval processes, reducing redundancy and accelerating project delivery.

Flexible Project Delivery Models

Project teams are structured with core leadership and scalable technical staff, allowing us to ramp up or down based on project volume and complexity. We maintain complexity. We maintain established partnerships with our trusted subconsultants to supplement our in-house capabilities, ensuring capacity even during peak workloads.

Proven Track Record

Arcadis has a strong history of successfully executing multiple stormwater infrastructure projects concurrently, meeting all schedule and quality requirements.

Quality and Consistency Assurance

Our standardized quality management system is applied across all projects, ensuring consistent deliverables regardless of project scale or number. Lessons learned from ongoing projects are regularly integrated into our processes, further enhancing scalability and efficiency.

Current/Anticipated Workloads

The staff resources available in our local and regional offices provide significant “bench strength” that facilitates required resource allocations to meet the CRA/City’s needs. Our South Florida offices (Plantation, Boca Raton and Coral Gables) include more than 75 professionals to cover the potential services described in this solicitation. We have 400+ professionals located throughout Florida. Key project personnel are available to initiate the work immediately upon contract execution and to continue work on an ongoing basis. Furthermore, we commit to providing other resources as needed to supplement the proposed team to meet your needs. Our

Principal-in-Charge, Leah Richter, will be responsible for scheduling and committing team resources to assigned project and incorporating additional staff as needed.

A listing of our proposed team's availability (over the next 12 to 16 months) for this project can be found in Tab D along with resumes for our staff.

Timeline

Arcadis' proposed scheduling methodology (timeline) for effectively managing and executing this project is rooted in proactive management rather than reactive tracking. For all of our projects, we utilize CPM scheduling to identify the specific sequence of design tasks such as hydraulic modeling, geotechnical investigations, and long-lead equipment procurement that at the end will dictate the final completion date of this project. By identifying these "bottlenecks" early, we can allocate resources dynamically to ensure that any delay in a task does not derail the overall project milestone.

Based on this, and our recent local experience in other coastal communities in Broward County, we have structured our workflow into four primary phases to ensure streamlined delivery:

Phase	Key Activities	Estimated Duration (Months)
1 Preliminary Design	Additional Site Survey, Geotechnical Evaluation, Utility Coordination and Hydraulic Analysis (30% Design)	1-3
2 Detailed Design	60% and 90% Submittals, Permitting Applications, Specifications and Long Lead Items Early Ordering Procurement Packages (if needed)	4-8
3 Bidding and Procurement	Finalizing Bid Documents (100% Design), City's Contractor Selection	9-13
4 Construction and Commission	Construction Phase (Startup and Testing)	14-22

This timeline assumes a standard permitting window with local regulatory agencies. Arcadis will hold pre-application meetings with these agencies in Month 2 to expedite the approval process during the design.

Finally, the schedule is only as good as its last update. We will provide monthly progress reports that will compare Planned vs. Actual progress. This transparency ensures that the CRA/City staff are never surprised by a shift in the timeline and allows for collaborative decision making if the site conditions or external factors (market) require an adjustment to the plan.

Sub-Consultants

In order to provide the best team to the CRA/City for this project, Arcadis has retained the assistance of several subconsultants who bring local experience and have previously worked with Arcadis team members performing similar services needed for this project. These subconsultants include:

- **Dickey Consulting Services (DCS)** – Public Outreach
- **Javier Bidot & Associates** – Bathymetric Surveying, Topographic Surveying
- **KEITH** – SUE
- **WIRX** – Geotechnical Investigation

Further information on subconsultants can be found under Tab H. Sub-Consultant Information.

Tab F.

Knowledge of the Site and Local Conditions

Tab F. Knowledge of the Site and Local Conditions

Arcadis brings extensive experience delivering infrastructure projects across South Florida, including Broward County and the City of Hollywood. For the City of Hollywood we have been providing engineering services for more than 25 years now, and we are well versed in the unique challenges presented by the region's low-lying topography, high groundwater tables, and vulnerability to both tidal and storm driven flooding.

We recognize the City of Hollywood's stormwater management priorities established in the City's adopted master plan that includes:

- Adaptation to sea level rise and tidal influences
- Mitigation of inland flooding
- Integration with ongoing resilience and sustainability initiatives

Local Permitting Agencies, Procedures and Testing Protocols

Based on our experience working with similar projects in Broward County, our approach will ensure comprehensive compliance with the local, county, state and federal regulation. We understand these are some of the agencies that will be involved in reviewing and approving this project.

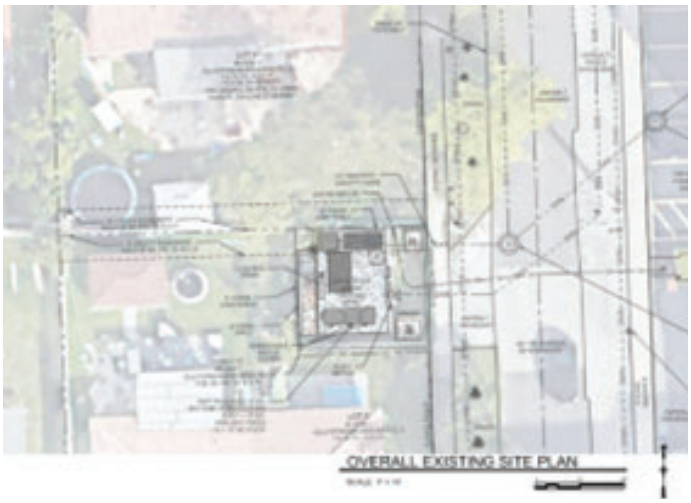
- City of Hollywood: Our team will adhere to the City's CRA approval processes. In addition to this, we have unmatched experience working with the City's Building Permit and are very familiar with the review process and typical comments from the different divisions (Electrical, Structural, Mechanical, Plumbing). This experience will help us in addressing these typical comments as part of our design to avoid delays in the permitting process.
- Broward County Environmental Protection and Growth Management Department: Our team is familiar with the Environmental Resource Licensing Section and Water Quality Standards. In addition, coordination will be needed with this Department for other disciplines related to Development.
- Florida Department of Environmental Protection (FDEP): Experience with FDEP permitting requirements for stormwater infrastructure, including NPDES requirements for discharges, and coordination with South Florida Water Management District (SFWMD) for regional approvals.

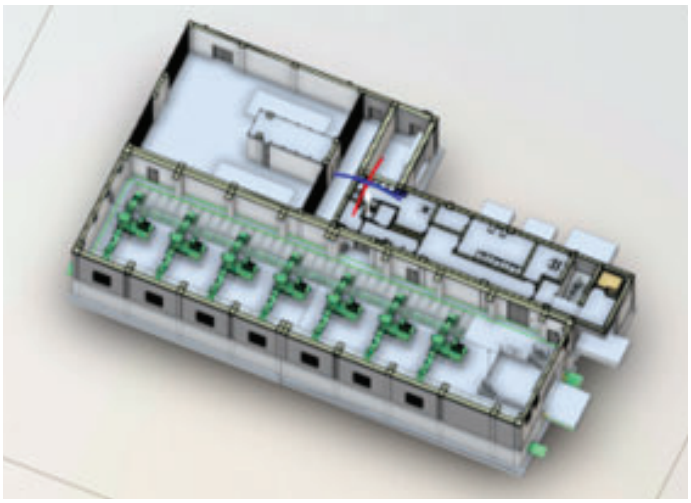
- United States Army of Corps of Engineers (USACE): This project is in close proximity to the Atlantic Ocean and the Intracoastal Waterway. Within the project limit, there are three (3) existing outfalls, and the project is proposing a new outfall to the Intracoastal Waterway. Any work within the Intracoastal Waterway (seawall, or bed) will require an USACE permit. Typically, a benthic survey and a bathymetric survey will be required by USACE as part of their permit review process.
- Florida Department of Transportation (FDOT): The proposed project will include new pipelines (42-inch in diameter) along State Road A1A. This work will require a Utility Permit from FDOT. This process is pretty straight forward, if the design is according to their standards. For example, as part of the FDOT's Utility Accommodation Manual, the linear infrastructure should cross perpendicular their right of way and not parallel. This will have to be discussed during the early stages of the design with FDOT to confirm their requirements for this area

Experience in Hurricane-Prone and Low Elevation Environments

Arcadis has designed and delivered pump stations and critical infrastructure in some of the most challenging South Florida environments, including:

- City of Hallandale Beach Pump Station #6 - Low elevation and flood prone site that require creative approaches to foundation design and floodproofing.
- City of Fort Lauderdale High Service Pump Station – Resilience to hurricane winds forces, utilizing robust structural design, wind rated equipment and redundancy in critical systems.
- South Florida Water Management District Pump Station – Power reliability, including standby generation and SCADA integration for remote monitoring and rapid response during extreme weather events.





Logical and Safety Challenges w Elevation Environments

We are experienced in working within constrained, occupied urban sites, ensuring continuous public safety through robust maintenance of traffic (MOT) plans, secure work zones, and clear communication with the local stakeholders. Our team typically coordinates with adjacent facilities and utilities to minimize service disruptions and maintain access to emergency responders. For this project, this will be fundamental given the proximity of the Fire Station #40 to the project site.

Tab G.

References - Vendor Reference Form

VENDOR REFERENCE FORM

City of Hollywood Solicitation #: RFQ-365-26-JJ
Reference for: Arcadis U.S., Inc.

Organization/Firm Name providing reference: South Florida Water Management District
Organization/Firm Contact Name: Vijay Mishra, PE
Title: Project Manager
Email: vimishra@sfwmd.gov
Phone: 561-284-5336
Name of Referenced Project: C-139 FEB
Contract No: 4600003011-WO3
Date Services were provided: 08/2018 - 01/2026
Project Amount: $4,168,396

Referenced Vendor's role in Project: ☒ **Prime Vendor** ☐ **Subcontractor/ Subconsultant**

Would you use the Vendor again? ☒ **Yes** ☐ **No.** Please specify in additional comments

Description of services provided by Vendor (provide additional sheet if necessary):
The C-139 FEB project consists of approximately 11,000 acre foot of water storage including perimeter embankments, interior berms, 690 cfs inflow pump station, internal inflow and outflow canals, outflow structures, and seepage management system.

Please rate your experience with the Vendor	Need Improvement	Satisfactory	Excellent	Not Applicable
Vendor's Quality of Service				
a. Responsive	☐	☐	☒	☐
b. Accuracy	☐	☐	☒	☐
c. Deliverables	☐	☐	☒	☐
Vendor's Organization:				
a. Staff expertise	☐	☐	☒	☐
b. Professionalism	☐	☐	☒	☐
c. Staff turnover	☐	☒	☐	☐
Timeliness/Cost Control of:				
a. Project	☐	☐	☒	☐
b. Deliverables	☐	☐	☒	☐

Additional Comments (provide additional sheet if necessary):
Arcadis US delivered effective design and Engineer of Record services for the C-139 FEB project, providing work that is critical to the District's mission. Their strong technical expertise, responsiveness, and attention to constructability and regulatory requirements supported timely decisions and efficient project delivery.

****THIS SECTION FOR CITY USE ONLY****						
Verified via:	**Email:**	☐	**Verbal:**	☐	**Mail:**	☐
Verified by:	**Name:**				**Title:**	
	Department:				**Date:**	

VENDOR REFERENCE FORM

City of Hollywood Solicitation #: RFQ-365-26-JJ

Reference for: Arcadis U.S., Inc.

Organization/Firm Name providing reference: City of Dalton, GA

Organization/Firm Contact Name:	P. Andrew Parker, P.E.	**Title:**	City Administrator
Email:	aparker@daltonga.gov	**Phone:**	706-529-2404
Name of Referenced Project:	Stormwater Support Services	**Contract No:**	Multiple
Date Services were provided:	2020 - Present	**Project Amount:**	$1.5M

Referenced Vendor's role in Project: ☒ **Prime Vendor** ☐ **Subcontractor/ Subconsultant**

Would you use the Vendor again? ☐ **Yes** ☐ **No. Please specify in additional comments**

Description of services provided by Vendor (provide additional sheet if necessary):
On-call stormwater support services consisting of planning and engineering design of stormwater management BMPs, green infrastructure design, asset management, construction support services, and CIP planning.

Please rate your experience with the Vendor	Need Improvement	Satisfactory	Excellent	Not Applicable
Vendor's Quality of Service				
a. Responsive	☐	☐	☑	☐
b. Accuracy	☐	☐	☑	☐
c. Deliverables	☐	☐	☑	☐
Vendor's Organization:				
a. Staff expertise	☐	☐	☑	☐
b. Professionalism	☐	☐	☑	☐
c. Staff turnover	☐	☐	☑	☐
Timeliness/Cost Control of:				
a. Project	☐	☐	☑	☐
b. Deliverables	☐	☐	☑	☐

Additional Comments (provide additional sheet if necessary):
Arcadis has been instrumental in helping to deliver innovative solutions to persistent stormwater challenges that have plagued our community for decades. Their planning efforts and designs have delivered lasting and award winning project solutions.

****THIS SECTION FOR CITY USE ONLY****						
Verified via:	**Email:**	☐	**Verbal:**	☐	**Mail:**	☐
Verified by:	**Name:**				**Title:**	
	Department:				**Date:**	

VENDOR REFERENCE FORM

City of Hollywood Solicitation #: RFQ-365-26-JJ
Reference for: Arcadis U.S., Inc.

Organization/Firm Name providing reference: City of Virginia Beach, VA
Organization/Firm Contact Name: Mike Tippin, PE
Title: Stormwater Engineering Center Administrator
Email: MTippin@VBgov.com
Phone: 757.385.4131
Name of Referenced Project: Windsor Woods PDB
Contract No: Multiple
Date Services were provided: 2024-Ongoing
Project Amount: $35M - Engineering

Referenced Vendor's role in Project: ☐ **Prime Vendor** ☒ **Subcontractor/ Subconsultant**

Would you use the Vendor again? ☒ **Yes** ☐ **No. Please specify in additional comments**

Description of services provided by Vendor (provide additional sheet if necessary):
Lead design engineer for a flood risk and resilience progressive design build project.

Please rate your experience with the Vendor	**Need Improvement**	**Satisfactory**	**Excellent**	**Not Applicable**
Vendor's Quality of Service				
a. Responsive	☐	☐	☒	☐
b. Accuracy	☐	☐	☒	☐
c. Deliverables	☐	☐	☒	☐
Vendor's Organization:				
a. Staff expertise	☐	☐	☒	☐
b. Professionalism	☐	☐	☒	☐
c. Staff turnover	☐	☐	☒	☐
Timeliness/Cost Control of:				
a. Project	☐	☐	☒	☐
b. Deliverables	☐	☐	☒	☐

Additional Comments (provide additional sheet if necessary): Overall, Arcadis delivered at a level exceeding expectations for a project of this scale and complexity. Arcadis's displined approach, technical excellence, and unwavering commitment to schedule are key factors in the success of the project.

****THIS SECTION FOR CITY USE ONLY****						
Verified via:	**Email:**	☐	**Verbal:**	☐	**Mail:**	☐
Verified by:	**Name:**				**Title:**	
	Department:				**Date:**	

Tab H.

Sub-Consultant Information

Tab H. Sub-Consultant Information

Below you'll find a summary of the talented group of specialty subconsultants we have assembled to supplement our in-house expertise. Each teaming partner was strategically selected for their value to the City and this project. Collectively, the team provides local knowledge, technical expertise, and a history of successful collaboration on South Florida infrastructure projects, enabling us to meet the City's goals for this project and deliver of a resilient and efficient stormwater solution.

Dickey Consulting Services (DCS) – *Public Outreach*

Dickey Consulting Services (DCS) is an economic development, government relations, project management and communications consulting firm. They provide services such as coordinating, implementing and promoting projects related to economic and community development, government relations, business development, housing, public relations, public involvement, and other marketing initiatives. DCS holds minority certification with the State of Florida as an M/WBE. DCS has extensive experience working with several South Florida municipalities of similar size and complexity as the City. In addition, DCS currently provides public outreach and public relations services for Broward County Water & Wastewater Services Utility Analysis Zone Projects and Neighborhood Improvement Projects. Arcadis and DCS have collaborated on numerous projects together including most recently neighborhood water conveyance design project for the City of Fort Lauderdale.

OFFICE LOCATION	CONTACT NUMBER
1033 NW 6th St,, Fort Lauderdale, FL 33311	954.467.6822

Javier Bidot & Associates – *Bathymetric Surveying, Surveying*

Javier Bidot & Associates is a certified small business land surveying practice that upholds the land surveying profession to the highest standard focused on quality, performance and timely delivery of complex critical infrastructure, industrial, commercial and engineering survey projects that may require the expert application and management of technology, experience and the human resource. Arcadis and Javier Bidot & Associates most recently delivered the SFWMD's C-139 project together, and have worked collaboratively for nearly two decades.

OFFICE LOCATION	CONTACT NUMBER
2385 NW Executive Center Dr. #100, Boca Raton FL 33431	561.962.2851

KEITH – *SUE*

KEITH brings over 60 years of Florida-based experience to the City and a proven history of delivering with the Arcadis team. Having operated from our Broward County headquarters since 1998, we offer deep local knowledge and a history of collaboration with the City on critical infrastructure like the Floodplain Management Plan Update and Stormwater Program Management. As a firm of over 220 professionals, KEITH provides surveying and mapping, subsurface utility engineering, planning, civil engineering, traffic engineering, landscape architecture, history preservation, construction management, and virtual design and construction management, and virtual design and construction services. Given the constraints of the Jackson/Jefferson Street corridor, locating existing utilities is critical to prevent design conflicts. Their SUE work follows ASCE 38-22 standards for Non-Destructive Exploration utilizing Ground Penetrating Radar (GPR), electromagnetic induction, and vacuum excavation (test holes) to verify the exact depth and location of underground element.

OFFICE LOCATION	CONTACT NUMBER
301 E Atlantic Boulevard, Pompano Beach, FL 33060	954.788.3400

WIRX Engineering, LLC – *Geotechnical Investigation*

WIRX Engineering, LLC is a certified SBE, CBE, DBE and MBE Professional Engineering Firm specializing in Geotechnical Engineering, Water Resource Engineering, Construction Management, Construction Materials Testing and Inspections services. The WIRX Team brings a strong portfolio of geotechnical and materials engineering with extensive experience in South Florida, a history of collaboration with Arcadis, and recent experience working with the City.

OFFICE LOCATION	CONTACT NUMBER
515 E Las Olas Boulevard, Suite 120, Fort Lauderdale, FL 33301	954.451.0354

Tab I.

Financial Resources

Arcadis U.S., Inc. and Subsidiaries

Consolidated Financial Statements
December 31, 2024 and 2023

Arcadis U.S., Inc. and Subsidiaries
Index
December 31, 2024 and 2023

pwc

Report of Independent Auditors

To the Management and Board of Directors of ARCADIS U.S., INC. and Subsidiaries

Opinion

We have audited the accompanying consolidated financial statements of ARCADIS U.S., INC. and Subsidiaries (the "Company"), which comprise the consolidated statements of financial position as of December 31, 2024 and 2023, and the related consolidated statements of comprehensive income, changes in equity and of cash flows for the years then ended, including the related notes (collectively referred to as the "consolidated financial statements") which, as described in Note 1b to the consolidated financial statements, have been prepared on the basis of accounting principles generally accepted in the European Union.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2024 and 2023, and the results of its operations and its cash flows for the years then ended in accordance with accounting principles generally accepted in the European Union.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (US GAAS). Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Consolidated Financial Statements section of our report. We are required to be independent of the Company and to meet our other ethical responsibilities in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Basis of Accounting

As discussed in Note 1b to the consolidated financial statements, the Company prepares its consolidated financial statements on the basis of accounting principles generally accepted in the European Union, which differs from accounting principles generally accepted in the United States of America. Our opinion is not modified with respect to this matter.

Responsibilities of Management for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with accounting principles generally accepted in the European Union, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Company's ability to continue as a going concern for at least, but not limited to, twelve months from the end of the reporting period, disclosing, as applicable, matters related to going concern and using the going concern basis

PricewaterhouseCoopers, LLP, One Utah Center 201 South Main Street, Salt Lake City, UT 84111
801 531 9666

www.pwc.com

of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Auditors' Responsibility for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with US GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the consolidated financial statements.

In performing an audit in accordance with US GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the consolidated financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Company's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters, that we identified during the audit.

PricewaterhouseCoopers LLP

Salt Lake City, UT
May 9, 2025

Arcadis U.S., Inc. and Subsidiaries
Consolidated Statements of Financial Position
December 31, 2024 and 2023

(dollar amounts in thousands)	Note	2024	2023
Assets			
Current assets			
Cash and cash equivalents		$ 33,907	$ 15,799
Amounts receivable, net	2	445,085	411,177
Related party receivables	13	159,550	136,666
Related party - income taxes receivable		14,577	36,426
Other current assets		8,026	9,127
Total current assets		661,145	609,195
Property and equipment	4	23,519	21,363
Right-of-use assets	5	29,607	27,364
Deferred tax assets	9	21,240	13,456
Goodwill and intangible assets	6	275,060	275,098
Other noncurrent assets		1,129	1,338
Total assets		$ 1,011,700	$ 947,814
Liabilities and Stockholder's Equity			
Current liabilities			
Accounts payable		$ 135,514	$ 141,409
Accrued expenses		116,970	111,376
Billings in excess of cost		147,189	127,018
Current portion of lease liabilities	5	9,762	11,705
Other current liabilities		3,150	2,649
Total current liabilities		412,585	394,157
Lease liabilities	5	23,091	21,127
Other noncurrent liabilities		1,535	637
Total liabilities		437,211	415,921
Stockholder's equity			
Preferred stock, $0.01 par value			
Authorized, 1,000 shares; none issued		-	-
Common stock, $0.01 par value			
Authorized, 9,000 shares; issued 387 shares		-	-
Additional paid-in capital		371,712	371,712
Retained earnings		202,777	160,181
Total equity		574,489	531,893
		$ 1,011,700	$ 947,814

The accompanying notes are an integral part of these consolidated financial statements.

Arcadis U.S., Inc. and Subsidiaries
Consolidated Statements of Comprehensive Income
Years Ended December 31, 2024 and 2023

(dollar amounts in thousands)	Note	2024	2023
Gross revenue	7	$ 1,794,019	$ 1,683,433
Materials, services of third parties and subcontractors		614,630	595,515
Net revenue from services		1,179,389	1,087,918
Personnel costs	8	847,182	783,365
Other operating expenses	8	149,143	143,860
Depreciation and amortization expense	4,5,6	17,126	18,538
Income from operations		165,938	142,155
Other income (expense)			
Interest income		5,167	4,606
Interest expense		(1,182)	(970)
Income from operations before provision for income taxes		169,923	145,791
Provision for income taxes	9	47,327	26,706
Profit and comprehensive income		$ 122,596	$ 119,085

The accompanying notes are an integral part of these consolidated financial statements.

Arcadis U.S., Inc. and Subsidiaries
Consolidated Statements of Changes in Equity
Years Ended December 31, 2024 and 2023

(dollar amounts in thousands)	Common stock Shares	Common stock Amount	Additional Paid-in Capital	Retained Earnings	Total
Balances at January 1, 2023	387	$ -	$ 371,665	$ 101,096	$ 472,761
Profit and comprehensive income	-	-	-	119,085	119,085
Dividends	-	-	-	(60,000)	(60,000)
Stock exercises and excess tax benefit	-	-	47	-	47
Balances at December 31, 2023	387	-	371,712	160,181	531,893
Profit and comprehensive income	-	-	-	122,596	122,596
Dividends	-	-	-	(80,000)	(80,000)
Balances at December 31, 2024	387	$ -	$ 371,712	$ 202,777	$ 574,489

The accompanying notes are an integral part of these consolidated financial statements.

Arcadis U.S., Inc. and Subsidiaries
Consolidated Statements of Cash Flows
Years Ended December 31, 2024 and 2023

(dollar amounts in thousands)	Note	2024	2023
Cash flows provided by operating activities			
Profit and comprehensive income		$ 122,596	$ 119,085
Adjustments to reconcile comprehensive income to net cash provided by (used in) operating activities			
Allowance on receivables		467	(1,745)
Depreciation and amortization	4,5,6	17,126	18,538
Deferred income taxes		(7,784)	16,727
Interest expense leases		1,164	836
Loss on disposal of assets		24	-
Changes in assets and liabilities			
Accounts receivable		(34,375)	(62,384)
Related party receivables		(24,884)	9,820
Other current assets		1,101	2,635
Other assets		209	(74)
Accounts payable		(5,895)	5,617
Accrued expenses		5,240	5,461
Billings in excess of cost		20,171	27,900
Income taxes payable		21,849	(69,948)
Other liabilities		1,400	(1,279)
Net cash provided by operating activities		118,409	71,189
Cash flows from investing activities			
Capital expenditures	4,6	(10,050)	(10,701)
Proceeds from sale of property and equipment	4	252	365
ARCADIS cash pooling alignment		2,000	-
Net cash used in investing activities		(7,798)	(10,336)
Cash flows from financing activity			
Payment of dividends	13	(80,000)	(60,000)
Principal payments on lease obligations	5	(12,503)	(13,836)
Net cash used in financing activity		(92,503)	(73,836)
Net change in cash and cash equivalents		18,108	(12,983)
Cash and cash equivalents			
Beginning of year		15,799	28,782
End of year		$ 33,907	$ 15,799

The accompanying notes are an integral part of these consolidated financial statements.

Tab J.

Legal Proceedings and Performance

Tab J. Legal Proceedings and Performance

Statement for Letter

Arcadis U.S., Inc., and its related and affiliated North American entities (collectively, "Arcadis"), has not been required to pay liquidated damages related to any project or been terminated for default.

1. Arbitration

ARCADIS

Updated Q4 2025

The following is a summary of requested litigation for the preceding five years. Such claims are disputed and not reasonably expected to be adversely determined, applicable insurance is available, and/or such claims are not reasonably expected to materially impact the financial condition or the operations of Arcadis.

Litigation Five-Year History: Arcadis U.S., Inc. and All Affiliates

Plaintiff	Defendant (Arcadis Affiliate)	Date Suit Filed	Nature of Incident	Type of Claim	Jurisdiction	Business Line	Government Claim (Y/N)	Resolution 1 = Case Ongoing 2 = Dismissal 3 = Resolved/Settled 4 = Judgment 5 = N/A
Longo-En Tech De Puerto Rico, LLC	Arcadis Caribe, PSC	Aug-25	Contractor alleges it was improperly defaulted and terminated on Vega Baja Truck Sewer project	Prof. Liability	San Juan	Water	N	1
Longo-En Tech De Puerto Rico, LLC	Arcadis Caribe, PSC	Jul-25	Contractor alleges it was improperly defaulted and terminated on Los Angeles and Loiza projects	Prof. Liability	San Juan	Water	N	1
CPL Architects, Engineers, Landscape Architect, D.P.C.	Arcadis U.S., Inc.	Apr-24	Plaintiff claiming breach of contract.	Prof. Liability	Gwinnett	Mobiliy	N	3
Walbridge	Arcadis G&M of North Carolina, Inc.	Jan-24	Plaintiff alleges project did not meet design requirements and claiming damages for redesign.	Prof. Liability	TBD	Places	N	3
Arcadis U.S., Inc.	USACE NDNODS	Apr-23	Appeal before Armed Services Board of Contract Appeals of COFD's decision denying Plaintiff's claim regarding differing site conditions/cardinal change under Contract Order No. WD912DR18F0689	Appeal	ASBCA	Env	Y	1
Griffin, et al.	Arcadis U.S., Inc.	Aug-22	Plaintiff alleges breach of fiduciary duty, interference with contract, implied contractual indemnity, and unfair competition.	Other	Los Angeles Cnty, CA	Places	N	1
B.L. Harbert Int'l, LLC	Arcadis U.S., Inc.	Jul-21	Plaintiff alleges refusal to amend contract due to change orders impacting contract price and completion date	Breach of Contract	Jefferson Cnty, AL	Infra	N	2

2. Lawsuits

Arcadis U.S., Inc., and its related and affiliated North American entities (collectively, "Arcadis"), has various legal proceedings pending at any given time. Such claims are disputed and not reasonably expected to be adversely determined, applicable insurance is available, and/or such claims are not reasonably expected to materially impact the financial condition or the operations of Arcadis, nor will they affect Arcadis' ability to fully perform the applicable services. These occurrences represent a nominal percentage of Arcadis' total projects at a frequency understood to be commensurate with or below industry standards for companies of similar size doing projects of similar type and volume. Please see Litigation History above.

3. Other Proceedings

Arcadis has not been involved in any lawsuits, administrative proceedings, or hearings initiated by the National Labor Relations Board or similar state agency in the past five years concerning any labor practices by our firm.

Arcadis has not been involved in any lawsuits, administrative proceedings, or hearings initiated by the Occupational Safety and Health Administration concerning the project safety practices of your company in the last five years.

4. Bankruptcies

Arcadis has not been involved in any lawsuits, administrative proceedings, or hearings initiated by the National Labor Relations

5. Contracts

Arcadis has not had a contract to which a party has even been terminated by the other party.

Sincerely,

Mellissa Pomales, PE, ENV SP, PMP
Senior Vice Principal
✉ melissa.pomales@arcadis.com | ☎ 305.761.0232

About Arcadis

Arcadis is the leading global design and consultancy firm for natural and built assets. Applying our deep market sector insights and collective design, consultancy, engineering, project and management services we work in partnership with our clients to deliver exceptional and sustainable outcomes throughout the lifecycle of their natural and built assets. We are more than 36,000 people, active in over 30 countries that generate over $5 billion in revenues. We support UN-Habitat with knowledge and expertise to improve the quality of life in rapidly growing cities around the world.

www.arcadis.com

Supporting our clients in their quest to become Fit-for-Future.

Utilities must plan for unprecedented scenarios while navigating a changing workforce, but where should leaders focus?

Use the QR code below to explore the five fundamentals of becoming a fit-for-future water utility and the common thread that unites them.

Arcadis. Improving quality of life