## HDR

Bid Contact **Wendy Fardanesh**
**wendy.fardanesh@hdrinc.com**
**Ph 916-817-4761**

Address **3250 W. Commercial Blvd, Suite 100**
**Fort Lauderdale, FL 33309**

| Item # | Line Item | Notes | Unit Price | Qty/Unit | Attch. | Docs |
|---|---|---|---|---|---|---|
| 12740-636--01-01 | 12740-636 | **Supplier Product Code:**<br><br>**Supplier Notes:** Please accept HDR's uploaded proposal for Bid #12740-636_FXE Airport Runway 9-27 Pavement Rehabilitation. Thank you. | **First Offer -** | 1 / each | **Y** | **Y** |

Supplier Total **$0.00**

## HDR

Item: **12740-636**

### Attachments

HDR_12740-636_FXE Airport Runway 9-27 Pavement Rehabilitation.pdf

January 26
**2023**

CITY OF FORT LAUDERDALE

# Consultant Services for FXE Airport Runway 9-27 Pavement Rehabilitation

BID NO. 12740-636

FXE FORT LAUDERDALE EXECUTIVE AIRPORT

January 26, 2023

City of Fort Lauderdale, Procurement Services Division
Attn: Maureen Lewis, Senior Procurement Specialist
cc: Khant Myat, PE
100 N. Andrews Avenue, 6th Floor
Fort Lauderdale, FL 33301
954.828.5239
maureenl@fortlauderdale.gov

**RE: Consultant Services For Fort Lauderdale Executive Airport Runway 9-27 Pavement Rehabilitation (12740-636)**

Dear Ms. Lewis and Mr. Myat:

At HDR, we understand how vital Fort Lauderdale Executive Airport (FXE) is to the economic prosperity of South Florida. Runway 9-27 is the heart of FXE, serving travelers from all over the globe as well as a critical supply chain connection to the Caribbean and Latin America. With forecasted growth in both aircraft size and frequency, FXE must increase the reliability and performance of this critical piece of infrastructure.

HDR is the right team to design improvements to rehabilitate the runway to meet its future needs, all while meeting FXE's performance expectations, meeting schedule, and controlling costs. We will accomplish this by bringing you:

- Continuity in leadership who inspected the runway and developed the project budget
- Record of projects delivered on-time, within budget at FXE
- Award-winning experience in fast-track asphalt runway paving
- Strong relationships with the local contracting community

It has been a privilege for HDR to work side-by-side with your leadership team serving as your general consultant since 2014. HDR has developed an in-depth understanding of your capital improvement vision and operational requirements specific to FXE through work on your master plan update, runway pavement repairs, and runway extension justification. As a dedicated partner, we are committed to continuing to provide you with local responsiveness combined with industry leading aviation expertise.

hdrinc.com
3250 West Commercial Boulevard, Suite 100, Fort Lauderdale, FL 33309-3459
**T** 954.233.4914 **F** 954.233.4953

We are continuing this commitment for the rehabilitation of Runway 9-27, bringing to FXE runway design professionals who have designed **more than 50 primary runway rehabilitation projects** and 15 new runways. To lead our team, we are fully dedicating Cody Parham as our Project Manager. A natural consensus builder, Cody is one of the industry's leading experts, having continually delivered runway projects over his 16-year career with more than 19 runway projects under his belt. He has also served as your general engineering consultant project manager since 2016. We are confident that FXE will benefit from the tailored approach that Cody has specifically developed for runway rehabilitation projects on time and within budget, all while minimizing impacts to operations.

Our team is dedicated, experienced, and local. We know your team, and we understand the importance of this project. That is why FXE can count on us to successfully deliver the Runway 9-27 Rehabilitation.

***The HDR team is your team.***

Sincerely,

HDR

Katie E. Duty, PE, ENV SP
Vice President
katie.duty@hdrinc.com

Cody Parham, PE
Project Manager
cody.parham@hdrinc.com

1

# TABLE OF CONTENTS

# 2 EXECUTIVE SUMMARY


HDR's Runway Incursion Mitigation Improvements at FXE

# Executive Summary

The HDR Team brings to FXE the right balance of local leadership that knows your airport and national experts that specialize in expedited runway rehabilitation.

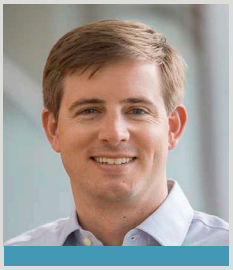
## Benefits of Selecting this Team

- Leadership that has recently completed design and construction on your airfield **on time and within budget**.
- National expertise in **expedited runway mill and overlays**.
- **Environmental, communications, and regulatory expertise** reduces your staff workload, freeing them to focus on running your airport.

## Key Individuals

Our project leadership brings a record of delivering airfield construction at FXE and around the country on time and within budget.

**Project Manager: Cody Parham, PE**
*West Palm Beach, FL*



Cody brings 16 years of experience in aviation design and airfield construction management. His resume includes **19 runway projects**, 16 of which were in Florida. He has served as FXE's general engineering consultant project manager for 3 terms, delivering 52 design and construction tasks at FXE. Cody will apply nationwide best practices to his local knowledge of FXE to develop a construction program that is aggressive but achievable by the local contracting community.

*"It's important to me to contribute to the longevity of FXE's exceptional infrastructure, growth, and continued success in supporting our local economy. This project is a great opportunity for me to bring my aviation experience and best practices to FXE and serve as your trusted advisor. I understand the sacrifices you undergo when runways are down. With this in mind, I take pride in leading and guiding my teams toward successful outcomes. My staff are like family to me, and we are ready to roll up our sleeves and work with you to rebuild your runway."*


Project Manager Cody Parham's runway rehabilitation experience pairs local knowledge with national best practices.

## BUSINESS ENTITY INFORMATION

**FIRM NAME**
HDR Engineering, Inc.

**CORPORATE HEADQUARTERS**
1917 S 67th Street
Omaha, NE 68106

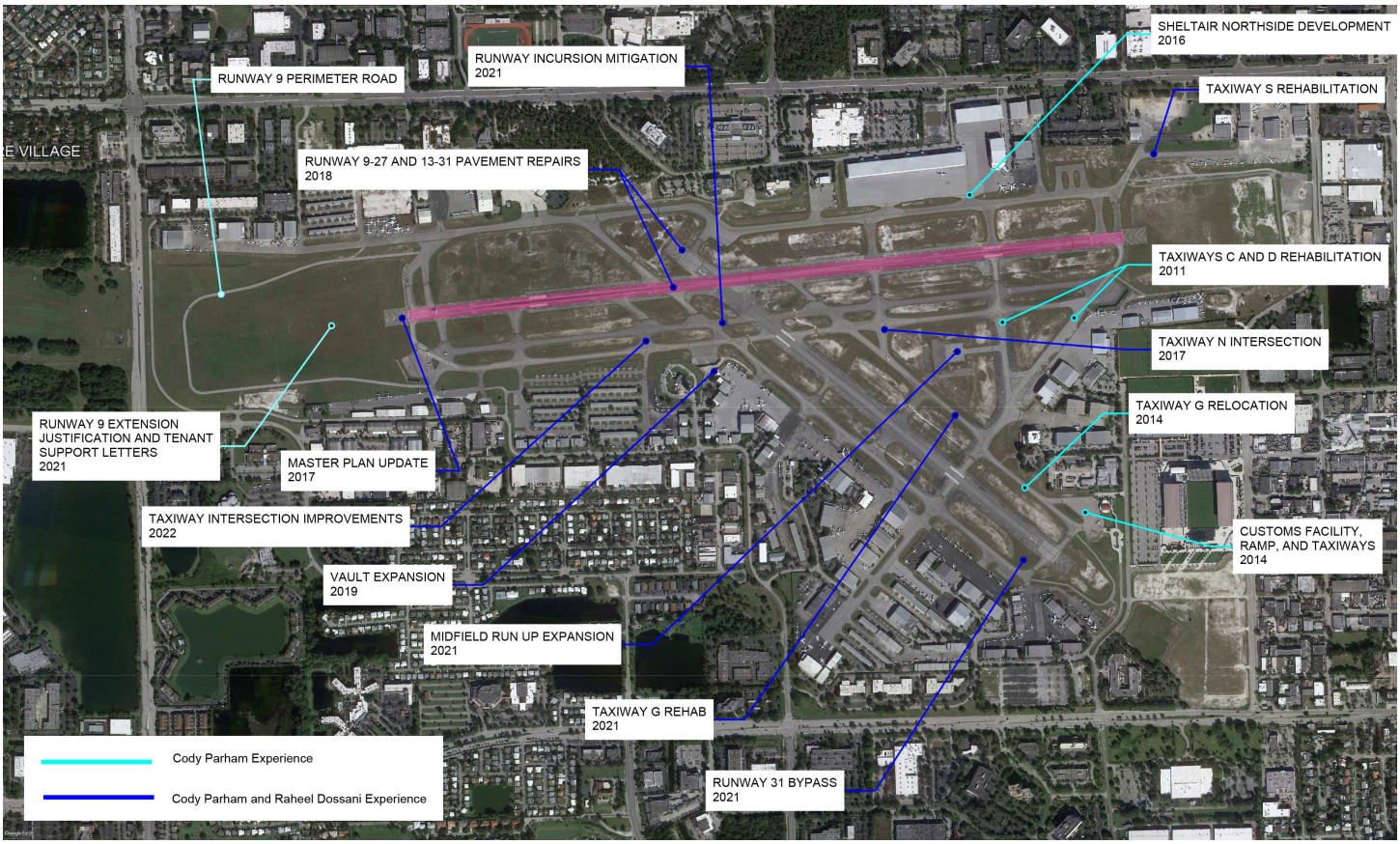
**BACKGROUND**
We are a professional services corporation fully owned by our employees, founded in 1917. HDR provides planning, design, and construction services to airports in south Florida and around the world. We think globally and act locally to serve our community.

**OFFICE SERVING THIS CONTRACT**
3250 West Commercial Blvd.
Suite 100
Fort Lauderdale, FL 33309
P: 954.233.4914
F: 954.233.4953
hdrinc.com

**POINT OF CONTACT**
Cody Parham, PE
Project Manager
O: 561.209.6641
M: 678.617.6958
cody.parham@hdrinc.com

**Deputy Project Manager and Construction Lead: Raheel Dossani, PE**
*Fort Lauderdale, FL*

To support Cody, we have selected Raheel Dossani to serve as deputy project manager. Raheel began his career providing construction administration and inspection services for south Florida airports and has served FXE continuously since then. He brings his recent experience as Resident Project Representative (RPR) and construction administrator for 8 projects at FXE, including the 2018 Runway 9-27 Maintenance project. In this role, Raheel has refined his process for contractor management and documentation, resulting in 'day-zero' approvals of contractor pay requests that keep the project on schedule.




## BENEFIT TO FXE

Cody and Raheel's pavement design and construction experience at FXE gives you a leadership team ready to start on day 1.

## Key Elements of the Proposal

### WE MEET OR EXCEED ALL MINIMUM QUALIFICATIONS

Our firm and key staff meet or exceed all the minimum qualifications required in Section 2.8 of the RFQ. Please see Section 6 of this proposal for a detailed demonstration of how we meet all criteria.

### FIRM QUALIFICATIONS AND EXPERIENCE

With more than 11,000 employee-owners, 500 staff in Florida, and 3 aviation offices within an hour drive of FXE, HDR brings global expertise served through local client service.

MORE THAN **11,000** **EMPLOYEES**

IN MORE THAN **200** **LOCATIONS** AROUND THE

**100+** **PROFESSIONALS** LOCATED IN THREE SOUTH **FLORIDA OFFICES**

**150+** DEDICATED **AVIATION PROFESSIONALS** FIRM-WIDE

HDR HAS WORKED ON **12/15** **TOP RANKED** AIRPORTS

SERVING **160+** **AIRPORT CLIENTS** GLOBALLY

OUR **SOUTHEAST AVIATION CENTER OF EXCELLENCE** HAS SERVED MORE THAN **20 AIRPORTS**

## HDR AVIATION QUICK FACTS

HDR provides recent, relevant, and diverse runway rehabilitation experience.

HDR has designed more than **130** **RUNWAYS, TAXIWAYS & APRONS**

HDR staff has designed **15** **NEW RUNWAYS +** **50** **RUNWAY IMPROVEMENTS**

We have **30** staff that have designed **WEEKEND REHABILITATION PROJECTS**

ENR **No. 11** **TOP 25 IN AIRPORTS**

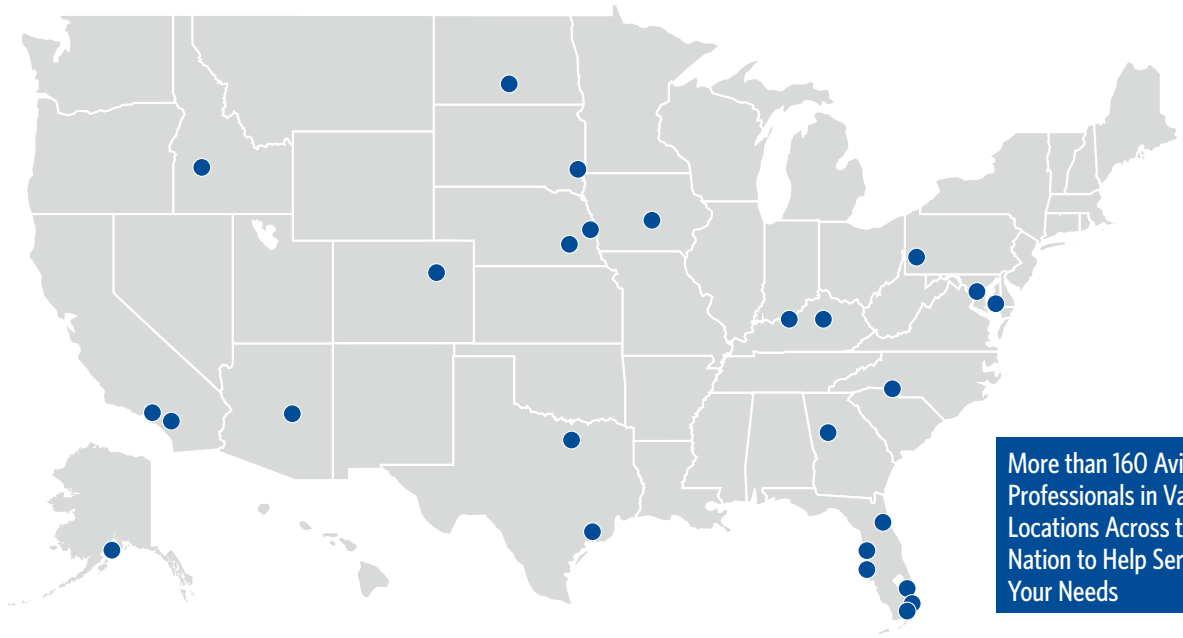
**$200M** **IN DESIGN FOR AIRPORT CLIENTS** during the last 5 years

## History and Past Performance of our Firm

We're proud to provide 5 project references in section 4 'History and Past Performance of the Firm'. Highlights from these reference projects that apply to FXE include:

- **LEX Runway 4-22 Rehabilitation** was named Airport Business Magazine 2022 Project of the Year for completion of the 7,000-ft x 150-ft runway rehabilitation for $16 million in just 72 hours, a similar size and complexity as the Runway 9-27 Rehabilitation proposed at FXE.
- **FXE General Engineering Consultant**, where HDR has been selected for 3 consecutive terms. Under this contract, we design the Runway 9-27 Pavement Repairs and completed the work within a 72-hour weekend closure. In total, we've completed 4 projects requiring runway closure at FXE on time and within budget.
- **Runway rehabilitations at F45 and LNA airports for Palm Beach County**. We utilized a novel 'profile mill and overlay' strategy that allowed the runways to be strengthened without reconstructing them, saving millions in construction costs and months of closure.

**Primary runway rehabilitation is at the heart of what we do:**



More than 160 Aviation Professionals in Various Locations Across the Nation to Help Serve Your Needs

We are proud to have served as FXE's general engineering consultant since 2014, because your success is our success. Our people live, work, and play in the Uptown area, and are proud to work with a partner like FXE that generates an economic impact while giving back to the community.

The HDR team supporting FXE's annual 5K on the Runway

## Approach to Scope of Work

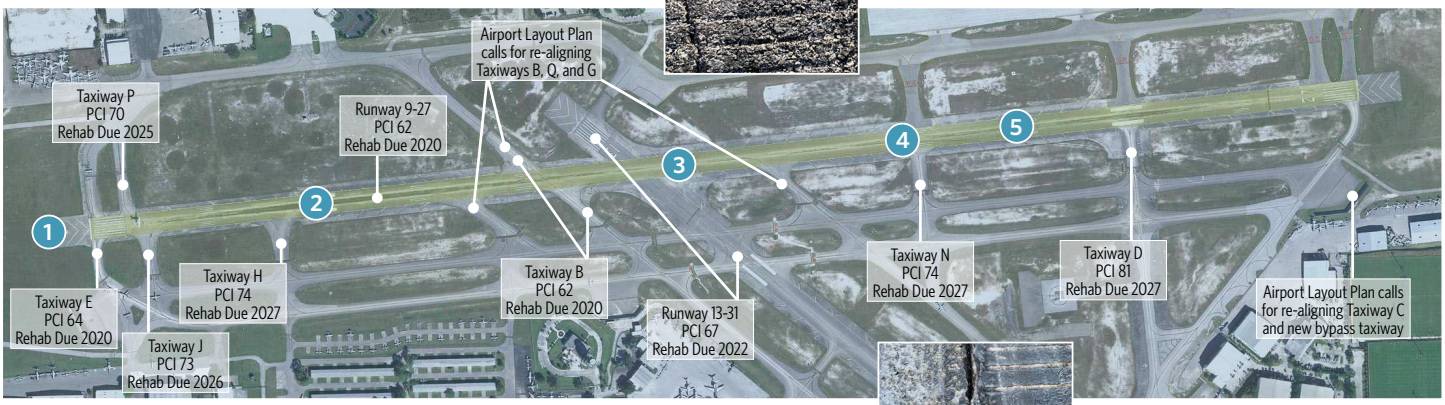
Our approach starts with a holistic understanding of the runway's existing conditions, the rehabilitation methods needed, and its future operational demands. We've created a Key Considerations Map below which shows how these factors come together.

1 **Challenge:** Anticipate upcoming runway extension work

**Solution:** Stub out conduit and duct banks needed for future extension. Construct full strength blast pad for future conversion to runway surface

2 **Challenge:** Touchdown areas show surface has raveled away ~50% of groove height

**Solution:** Use nextgen polymer-modified pavement binders for surface course and trapezoidal grooves to extend pavement life

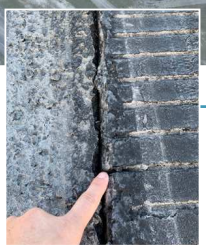



3 **Challenge:** In-pavement electrical work delays potentially delay re-opening

**Solution:** Do electrical work in nightly closures ahead of the full runway closure for paving

4 **Challenge:** Future runway extension will trigger required runway profile changes

**Solution:** Correct the runway profile as part of the rehabilitation project, eliminating re-work during the runway extension project.



5 **Challenge:** Isolated base course repairs are needed

**Solution:** Nightly deep mill/overlay repairs prior to the full mill/overlay

From this exercise, we developed a set of key considerations to develop the right scope and execute it within your budget and schedule expectations. The key considerations are **Pavements, Geometry, Safety and Phasing, and Regulatory Compliance**. See Section 5 for a more detailed description of our approach.

### PAVEMENTS

The age of the pavement and the distresses observed in HDR's 2020 evaluation of the Runway warrant a mill and overlay approach to rehabilitation. Certain areas in the touchdown zones have structural distresses which will need repairing prior to the mill and overlay. A high-performance polymer modified asphalt binder should be used, such as PG 76-22 or PG 82-22, for long-term performance. A 'profile mill' should be performed in areas requiring grade corrections, to allow for a standard paving thickness, which will reduce the runway closure duration. Trapezoidal grooves should be specified to increase resistance to raveling from rubber removal operations.

#### CHALLENGE

Existing Geogrid fabric installed during the 2004 rehabilitation may foul the milling machines and damage the existing pavement.

#### OUR APPROACH

Sawcut and patch areas requiring deep repairs in nightly closures prior to the full mill and overlay. This allows the contractor to run full-length shallow milling and paving runs during the full airport closure without the risk of fouling.

Previously installed geogrid mats must be isolated prior to the mill and overlay to avoid fouling the milling machine.

## GEOMETRY

To mitigate schedule and budget issues, geometry corrections need to be identified early on. If not, they can result in redesign, unanticipated construction cost, and design delays. In the program validation phase, we will work with FXE staff and the FAA to determine required geometry updates to the runway profile, cross slope, and connecting taxiway geometry.

### CHALLENGE

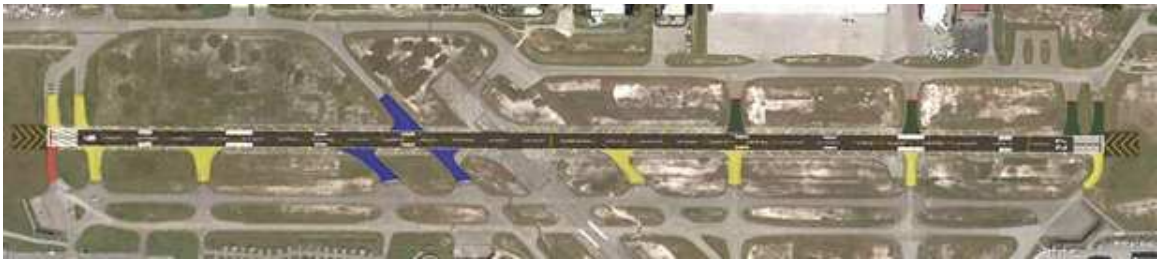
Several taxiway connectors in the Runway 9-27 Safety Area have a Pavement Condition Index (PCI) that could trigger a major rehabilitation with this project. To correct the geometries of these taxiway connectors would require a long runway closure to build new pavement sections.

### OUR APPROACH

Taxiways B and Q have PCIs below 65 and warrant major rehabilitation. However, the airport capital improvement plan has funding to relocate these taxiways in the near future. For these taxiways, investment in major rehabilitation doesn't make fiscal sense. We will propose to perform minor maintenance for the FAA's concurrence to keep FXE in compliance with its grant assurances and to reduce the runway closure duration. Taxiway E will require major rehabilitation. Taxiways L, P, J, H, G, N, D, and C all have PCIs above 70, which are allowed to receive maintenance instead of full rehabilitation, per FDOT policy. This approach minimizes geometry corrections and shortens the required airport closure to just 72 hours.

From our analysis of FXE's Pavement Management Report, there are some taxiways which can avoid geometry upgrades under this project. We will work with the FAA to obtain approval. In the figure below, we have determined the necessary work for each taxiway connector to the runway.

- **Green:** No work required
- **Yellow:** Some maintenance required. No geometry updates
- **Red:** Major rehabilitation. Has a PCI below 65 and will need geometry updates.
- **Blue:** Taxiway Connectors which can be omitted due to future demolition or relocation



## CONSTRUCTION SAFETY AND PHASING

Based on our discussions with contractors who have recently bid work at FXE, and our internal database of historic production rates, **we propose to complete the main runway mill, overlay, and markings in just a 72-hour weekend closure of the airport**.

Pre-work, including asphalt test strip, deep patching, crack sealing, and electrical replacement occur nightly prior to the airport closure. Post-work, including taxiway geometry corrections and pavement maintenance, will occur nightly after the airport closure.

The critical 72-hour airport closure will require hundreds of workers and equipment inside the Air Operations Area (AOA). We will develop a detailed 72-hour labor and equipment schedule to verify the contractor is providing adequate capacity and redundancy for critical path activities like milling and paving.

### CHALLENGE

Trucking Shortages, Driver Hours OSHA requirements, and Increase in Hauling Rates. OSHA mandates truck drivers are required to take breaks, which necessitates 3 separate trucking crews for the critical 72-hour work window.

### OUR APPROACH

In our detailed 72-hour closure plan, we will work with contractors to develop a detailed hourly schedule showing the separate crews work periods to be complaint with the OSHA, while providing backup manpower and equipment if sickness or mechanical issues occurs.

## REGULATORY COMPLIANCE

To finance the project, FXE anticipates applying for a 90/5/5 FAA AIP Grant. For large runway projects, the FAA requires efforts in addition to those required by smaller airfield projects. We've considered all of the FAA's required efforts and developed a plan to meet them, keeping your funding secure and audit-ready.

### CHALLENGE

Per FAA Order 1050.1F, this project will be required an environmental determination made by an FAA Official. The FAA AIP final grant application for the construction phase will also require a NEPA determination. If NEPA is not considered early in design, the construction grant could be delayed an entire year.

### OUR APPROACH

Since the rehabilitation will not require a runway closure of 6-months or more, we believe the FAA will likely agree to a Categorical Exclusion (CatEx). Our NEPA lead, Esther Chitsinde, is the former Environmental Planner for Dallas-Fort Worth International Airport, and will support you with the preparation of the documented CatEx (DCE) for FAA review and approval. The DCE is typically submitted by the airport sponsor to the FAA for their review and approval. Beginning at 30% design, we will coordinate with the FAA's Orlando ADO to seek a determination that this project be exempt from detailed noise and air quality modeling.

# Our Plan to Maintain Schedule and Budget

## CONSTRUCTION SCHEDULE

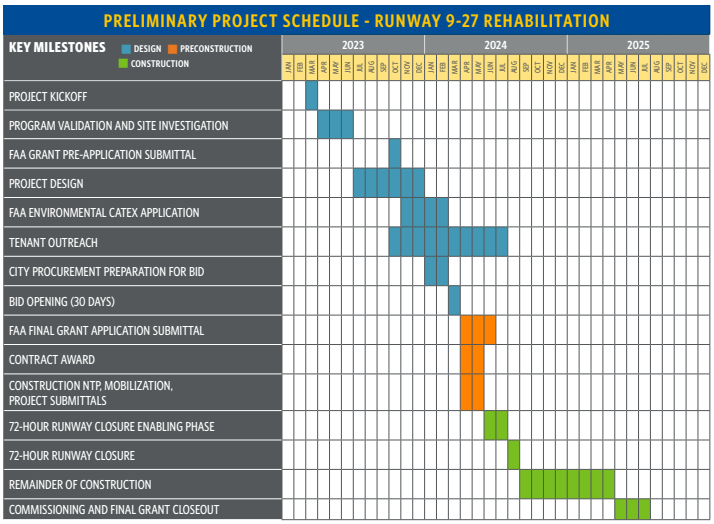
Through our unique knowledge of the challenges associated with this project, we have prepared a preliminary design schedule showing key milestones.

### CHALLENGE

Create a project schedule that is aggressive to minimize operational impacts, but achievable by the local contractors.

### OUR APPROACH

We reached out to 3 local airport paving contractors to understand their abilities and concerns about a project like yours. We compared their input to recent performance on similar runway rehabilitations. Our analysis indicates that the main mill and overlay requiring airport closure can be limited to just 72 hours, given the following conditions are met.




HDR's design and construction schedule allows for the runway closure in August 2024.

- **Condition 1.** All material staging and stockpiling must be on-site. No time can be wasted sending trucks off site to dump millings.
- **Condition 2.** All milling and paving must be self-performed by the prime contractor. This will present a challenge in meeting DBE goals, so other projects at the airport will have to shoulder a greater DBE participation goal to compensate.
- **Condition 3.** The critical mill and overlay period must have no profile or grade corrections. This means any corrective work must be scheduled as a separate phase of the work.
- **Condition 4.** The project must have a fully dedicated asphalt plant with another on standby.

## BUDGET

In 2020, HDR developed a 0% opinion of probable construction cost (OPC) of $10.5 million as an unsolicited courtesy to FXE for capital improvement planning. Our current analysis shows this budget should be sufficient for the main mill, overlay, and marking work. Value-added scope, like shoulder and taxiway rehabilitation, should be bid as add-alternates to allow FXE flexibility to decide if they want to allocate additional funding for these items.

# Qualifications and Experience of our Project Team

## KEY INDIVIDUALS

**Cody Parham, Project Manager,** *West Palm Beach, FL*
Having led 52 task orders for FXE delivered on time and within budget, Cody is ready to keep forward momentum on the Runway 9-27 Rehabilitation starting on day 1 of the contract.

**Raheel Dossani, Deputy Project Manager,** *Fort Lauderdale, FL*
Raheel's experience executing 40 task orders at FXE makes him a perfect to serve as deputy PM, providing day-to-day management of the design and construction teams who he already knows and works with regularly.

**Tim Fish, Project Principal,** *Charlotte, NC*
As HDR's east region aviation lead, Tim has the authority to bring in any resources needed to complete the work, giving you assurance that HDR can deliver within your project's schedule. As Project Principal, he will be responsible for assuring that HDR is offering FXE the appropriate technical resources to provide quality service and products on time and within budget.

**Tim Ward, Quality Manager,** *Pittsburgh, PA*
Tim's resume of dozens of runway projects and success in executing the 72-hr closure of LEX for the Runway 4-22 Rehabilitation gives you national technical expertise in aggressive, achievable construction execution.

**Marc Gambrill, Constructability Advisor,** *Fort Lauderdale, FL*
After delivering $3 billion in capital improvements as Broward County Aviation Department's Chief Development Officer, including 2 runway reconstructions, Marc's expertise in procurement, funding, and regulatory issues qualify him to serve as an extension of your leadership team for navigating contractor selection and construction management.

## M/W/DBE Participation

We have exceeded **20%** DBE and M/WBE participation in both the 2014-2018 and 2018-2022 General Engineer Aviation Consultant contract cycles, despite having no DBE or M/WBE goal to meet. Not resting on this success, we've added new local firms to our designated subconsultant team, and will strive for 21% M/WBE participation in this contract.

**Amy Champagne-Baker, President**
**Quantum Electrical Engineering**

*"I have worked as a subconsultant to HDR since 2014. HDR has been an invaluable partner when I established Quantum Electrical Engineering as a sole woman-owned, DBE, small business providing airfield electrical and construction administration services throughout Florida. HDR has treated Quantum as a true partner and is responsive to the needs of a small business and has supported our desire for growth in the aviation community. I'm proud to be a part of HDR's team to serve FXE."*

# Sub-Consultants

## CRJ & ASSOCIATES, INC.

**Team Role:** Construction Inspection

**Value Added:**
- Provides vehicles with radios and proper airfield driving insurance
- Staff can drive airside and communicate with Air Traffic Control
- Unmatched airfield construction inspection experience in South Florida

**Teaming History with HDR:**
- MDAD Civil GEC
- FXE GEC

## CYRIAKS ENVIRONMENTAL CONSULTING SERVICES, INC.

**Team Role:** Wildlife Inspection and Mitigation

**Value Added:**
- Understands rapidly changing regulatory landscape for Gopher Tortoises and Burrowing Owls
- Understands airfield construction impacts on protected species

**Teaming History with HDR:**
- FXE GEC

## KEITH

**Team Role:** Survey and Subsurface Utility Engineering

**Value Added:**
- Provides vehicles with radios and proper airfield driving insurance
- Staff can drive airside and communicate with Air Traffic Control
- Unmatched survey database and experience at FXE

**Teaming History with HDR:**
- FXE GEC

## OHIO UNIVERSITY AIRPORT

**Team Role:** NAVAID Siting

**Value Added:**
- National thought leaders in NAVAIDs

## QUANTUM ELECTRICAL ENGINEERING, INC.

**Team Role:** Electrical Engineering

**Value Added:**
- Staff have over a decade of experience designing and administering construction of electrical improvements at FXE
- Provides continuous design and construction services

**Teaming History with HDR:**
- PBCDOA Civil GEC
- FXE GEC

## RDM INTERNATIONAL, INC.

**Team Role:**
- Pavement Evaluation and Testing
- Pavement construction quality assurance inspection

**Value Added:**
- Provides vehicles with radios and proper airfield driving insurance
- Staff can drive airside and communicate with Air Traffic Control
- Led multiple training sessions for pavement quality assurance on behalf of the Airport Consultants Council

**Teaming History with HDR:**
- LEX Runway 4-22 Rehabilitation

## TIERRA SOUTH FLORIDA, INC. (TSFGEO)

**Team Role:** Geotechnical Investigation
- Construction materials quality assurance testing

**Value Added:**
- Provides vehicles with radios and proper airfield driving insurance
- Field staff with airfield operations experience
- Unmatched airfield geotechnical experience in South Florida

**Teaming History with HDR:**
- PBCDOA Civil GEC
- FXE GEC

3

# FIRM QUALIFICATIONS & EXPERIENCE


HDR team recording pavement distresses at FXE

# Firm Qualifications

We are proud to bring you a strong local team that is recognized and has a proven record of accomplishment as having the best technical capabilities in the aviation industry. To maintain position within the industry and keep pace with the elevated demand, FXE must continually enhance airport operation capacity, enhance the signage/ wayfinding through-out the airport to expand airport facilities to meet future demands while maximizing funding opportunities.

## An Award-Winning Runway Design Firm

HDR is a nationally recognized, employee-owned multidisciplinary firm with a 104-year history of successfully delivering a vast number of infrastructure projects across the world. It is the commitment of our more than 11,000 employee-owners that allows HDR to bring Global Expertise and Technical Support through our local offices. In 2022, the commitment of our staff was recognized when the LEX Runway 4-22 Rehabilitation project received the **American Council of Engineering Companies (ACEC) National Engineering Excellence Award**. To deliver on our the teams vision to rehabilitate and have the airports only commercial service runway operational within 72 hours, HDR staff worked around the clock in partnership with our client and teaming partners to make this vision a reality.

## HDR AVIATION QUICK FACTS

HDR has designed more than **130** RUNWAYS, TAXIWAYS & APRONS

HDR staff has designed **15** NEW RUNWAYS + **50** RUNWAY IMPROVEMENTS

We have worked at **23/25** BUSIEST AIRPORTS IN NORTH AMERICA

ENR **No. 6** TOP 25 IN AIRPORTS

**$200M** IN DESIGN FOR AIRPORT CLIENTS during the last 5 years

## OUR RUNWAY EXPERIENCE

HDR has led several runway rehabilitations projects that have required varying approaches to be successful. **It is this experience that have allowed us to develop best practices and design approaches that we will bring to FXE.**

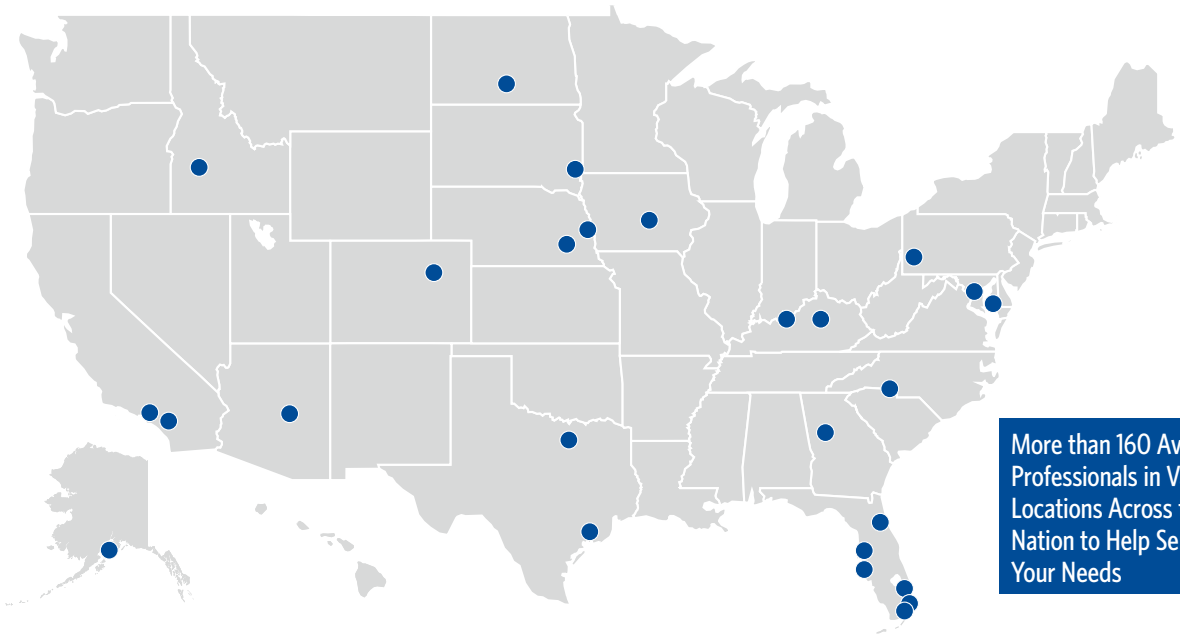
As the lead designer for the **LEX Runway 4-22 Rehabilitation**, HDR performed all scope of services that will be required for the successful completion of your runway rehabilitation. The rehabilitation was completed during a 72-hour weekend closure, which required the development of a comprehensive stakeholder engagement plan that included airlines, tenants, FAA, and the local community. During the 72-hour closure, an hour-by-hour schedule was developed and used to guide the team to completion on time.

For the **Tucson Airport Authority**, we are providing concept programming, final design services, and procurement services for this project that includes the demolition of the existing general aviation Runway 11R-29L and replacing it with a 10,996-foot-long commercial service Runway 12R-30L, as well as two parallel taxiways. The project is the largest part of the Airfield Safety Enhancement (ASE) Program at TUS, which includes safety and standards improvement on the airfield, and is the largest project in the history of the Tucson Airport Authority.

## Local Leaders Supported by National Experts

Our team combines FXE-experienced, local staff with national experts in runway rehabilitation design. Teaming our local and national experts will ultimately yield a more efficient design process, save design costs and deliver a high-quality runway rehabilitation design. We can confidently say this because we have done it over and over for clients across the country. Additionally, the processes we have developed during the COVID-19 pandemic have strengthened our ability to deliver high-quality work on large design assignments, regardless of operational in-person requests. The HDR team provides local leadership who know your airport and the community, backed by the national expertise only a large firm can provide. We apply this approach throughout our Aviation Practice and it has been key to our recent growth. We feel our success is best reflected in the years of continuous service we have provided many of our clients.

| CLIENT | YEARS OF CONTINUOUS SERVICE |
|---|---|
| FXE | 8 years |
| PBCDOA | 10 years |
| BCAD | 15 years |
| GOAA | 25 years |
| PANYNJ | 20 years |
| MDAD | 10 years |
| CRAA | 4 years |



More than 160 Aviation Professionals in Various Locations Across the Nation to Help Serve Your Needs

## Closer to Home

HDR maintains a strong local presence with regional offices throughout Florida, including three in South Florida: Fort Lauderdale (5 minutes away), Miami, and West Palm Beach. Our South Florida team, led by Cody Parham and Raheel Dossani, have the experience and knowledge of local conditions and regulations at FXE to efficiently progress any type of project. We provide a deep bench of local engineering professionals available to FXE at a moment's notice. We provide a comprehensive suite of in-house services and similar project experience, as demonstrated in detail throughout this proposal. Our ability to draw upon company-wide resources is a great strength in meeting and exceeding FXE's expectations.


For this contract to be successful, you need team members who bring the right experience, understand FXE's process and are committed through the life of the contract. Our Project Manager, Cody Parham, has been actively managing the FXE GEC Services contract and brings 16 years of experience. He brings to FXE the best practices that he has developed through the **successful completion of more than 52 task orders for you**. Cody is 100% committed and available to be your Program Manager. We have partnered Cody with our Deputy Program Manager, Raheel Dossani, who brings FXE experience gained by serving as your Project Engineer for the FXE GEC projects. Raheel's knowledge of your processes will be essential to meeting the schedule and budget for your projects.

## Relevant Past Projects

Developing the premier airport facility in south Florida is your vision. We turn your vision into a reality that reaches new heights in operational excellence and long-term economic growth. We collaborate with you to tackle your complexities and deliver the right solutions customized to your unique needs. Our team's structure provides clear roles, responsibilities and lines of authority, and a depth and breadth of technical experts to deliver the Runway 9-27 Rehabilitation.

### Fort Lauderdale Executive Airport (FXE), General Engineering Consultant, City of Fort Lauderdale, FL

Since 2014, HDR has provided general consulting services to support the Fort Lauderdale Executive Airport (FXE) development programs via an on-call contract. We have worked closely with the airport engineer and management to deliver 52 task orders while coordinating a team of 7 subconsultants.

**Design Ongoing - On call Contract • Design Value: $1,500,000 • Construction Value: $11,000,000 • Leadership: Cody Parham, Raheel Dossani, Joe Grubbs, Tim Fish, and Marc Gambrill**

### Runway 12R-30L, Tucson International Airport (TAA)

HDR is providing concept programming, final design, and procurement services for this new air carrier runway. The project includes demolishing the existing general aviation Runway 11R-29L and replacing it with the 11,000-foot-long commercial service Runway 12R-30L. The new runway will have a full-length inner parallel taxiway and a partial-length outer parallel taxiway. The project also includes a new airfield electrical vault and drainage improvements with five detention basins. This is the largest project in the history of the TAA.

**Dates of Service: 2019-2024 • Total Contract Value: $8,000,000 • Project Leadership: Joe Grubbs, Tim Ward, Tim Fish, and Bill Peduzzi**

### Palm Beach International Airport (PBI) Central Airfield Rehabilitation, Palm Beach County Department of Airports, Palm Beach County, FL

Design rehabilitation of primary parallel Taxiways B for Runway 14-32, the rehabilitation of Runway 14-32 shoulders, realignment and reconstruction of Taxiway F to facilitate hot spot mitigation, and stormwater upgrades. HDR developed a proactive plan to coordinate required field service work and facilitate key decisions that needed to be made with PBCDOA staff to improve team communication during the COVID pandemic. Due to the variety of improvements included in the rehabilitation of the Central Airfield, a variety of funding sources were utilized by PBCDOA to fund the project, including FAA AIP, FAA PFC, and local DOT. This required the team to work closely in development of budgets and opinions of probable cost that aligned with each of these funding sources. HDR also incorporated advanced aircraft movement modeling into the geometric design and phasing, which considered the mobility of the specialized military aircraft based at PBI. This advanced movement modeling supported the development of the project's CSPP, improved coordination with project stakeholders and will minimize the project's impact on the airfield during construction.

**Dates of Service: 2016-2022 • Design Value: $800,000 • Construction Value: $9,000,000 • Project Leadership: Cody Parham, Raheel Dossani, Joe Grubbs, Tim Fish, and Marc Gambrill**

## Blue Grass Airport (LEX), Runway 4-22, Taxiway A Rehabilitation, and Runway 22 Departure EMAS, Lexington, KY

Activate this QR code for a deeper look at the 72-hour construction effort

The only air-carrier runway at Blue Grass Airport required a number of grading and safety enhancements during a planned runway pavement rehabilitation. The airport turned to HDR to develop rehabilitation and safety standards updates that worked with a complex, multi-year funding plan. A key achievement was working with the airlines and all other stakeholders to develop a phasing plan that satisfied safety, operational, cost and quality targets.

**Cost-Effective and Sustainable Pavement Solutions.** Through pavement investigation and alternatives analysis, we partnered with LEX to develop alternative programs that would vary from complete reconstruction to rehabilitation. The result is a project that provides LEX with a pavement rehabilitation strategy that corrects the runway deterioration and minimizes the operational impacts to the airport. The pavement rehabilitation strategy included developing details to address deep pavement repairs during five-hour nightly construction periods while reopening the runway to airfield traffic each morning. The nightly repairs were designed to be completed over 100 consecutive nights in advance of the 3-inch mill and overlay.

**Minimizing Construction Impacts on Airfield Operations.** This project posed a unique challenge of operating a commercial service airport with one runway, which LEX Runway 4-22, Taxiway A Rehabilitation, and Runway 22 Departure EMAS Lexington, KY, requires the airport to be very strategic about the timing and type of rehabilitation performed so that it can maintain airfield operations. Safely phasing work to minimize the impact on operations always takes a priority for HDR's airport clients. This required HDR to work closely with the FAA ADO during development of the CSPP to analyze tower visibility, airspace penetrations, and impacts to NAVAIDs caused by construction. HDR utilized 3D modeling of the construction phasing to minimize impacts to the airport's commercial service while optimizing the contractor's available work area. Our use of visualizations and graphics as a communication tool to stakeholders and agencies simplified complex design issues into easy-to-understand visuals. Our approach allowed LEX to continue to operate as a commercial service airport throughout this multiphase construction project.

**Maximizing Funding Potential.** As our team began planning, it was determined that previously provided modifications to airport standards would not be legacies due to recent FAA Advisory Circular (AC) revisions. We worked with airport staff to find a balance between the new requirements of the FAA ACs and specific operational requirements of the airport so that potential FAA grant funding was not put at risk. In addition, we fast-tracked the design to position the airport to take advantage of any additional grant funding associated with the CARES Act.

**Dates of Service: 2016-2022 • Design Value: $2,000,000 • Construction Value: $17,000,000 •**
**Project Leadership: Cody Parham, Raheel Dossani, Tim Fish, and Joe Grubbs**

### Pompano Beach Municipal Airpark (PMP), Professional Engineering and Consulting Services, City of Pompano Beach, FL

We are providing programming, design, and construction services for the 185-ft extension of primary Runway 10-28 at PMP. The project also includes multiple connecting and crossing taxiways, regrading of basins, new drainage facilities, and new airfield electrical. When the anticipated construction costs exceeded the grant funding amount at 60% design, HDR worked with the FAA and FDOT to modify the grant application, which allowed the project to move forward with adequate funding.

**Design Completed (anticipated): 2023 • Construction Completed (anticipated): 2025 • Design Cost: $500,000 • Construction Value: $4,000,000 • Project Leadership: Cody Parham, Raheel Dossani, Joe Grubbs, Will Bowdoin, Tom Bair, and Tim Ward**


### Runway 5R-23L Rehabilitation, Rickenbacker International Airport, Columbus Regional Airport Authority (CRAA), Columbus, Ohio

The Columbus Regional Airport Authority (CRAA) selected HDR to provide engineering design of the Runway 5R-23L Rehabilitation and Modifications of Standards (MOS) Phase 2B project at Rickenbacker International Airport (LCK), in Columbus, Ohio. Runway 5R-23L is 12,000 feet long and 200 feet wide, capable of providing service to the largest international cargo aircraft. As the primary runway at LCK, construction scheduling was critical to maintaining airport operations. The work consisted of new 40-foot paved shoulders, blast pad expansions, taxiway reconstruction and reconfiguration, new underdrain, and replacement of existing runway edge light system, including new LED fixtures, new transformers, new cable in new conduit as well as new home run cable in existing conduit back to the electrical vault.

**Design Completed: 2020 • Construction Completed: 2021 • Design Cost: $ 1,000,000 • Construction Value: $11,300,000 • Project Leadership: Cody Parham, Raheel Dossani, Tim Fish, Joe Grubbs, Will Bowdoin, Tom Bair, and Tim Ward**


### Airport Civil Consultant, Palm Beach County Department of Airports, Palm Beach County, Florida

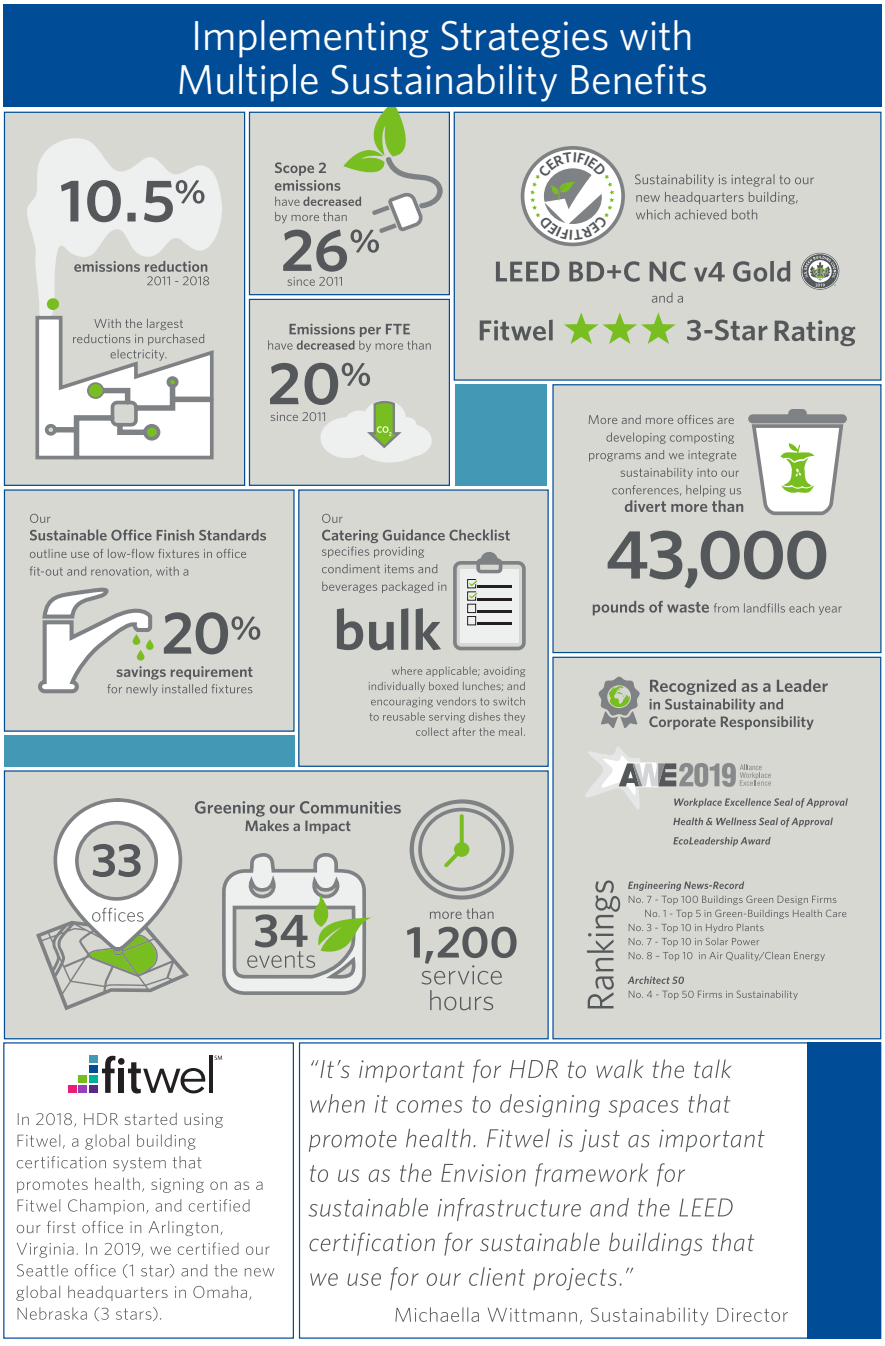
Since 2018, HDR has provided civil consulting services to support Palm Beach International Airport (PBI), Palm Beach County Park Airport (LNA), and North County Airport (F45) development programs via an on-call contract. As prime consultant, we have worked closely with the airport engineer and management to deliver 4 runway rehabilitation designs while coordinating a team of 5 subconsultants.

**Design ongoing - On call contract • Construction ongoing - On call contract • Design Cost: $ 3.5 million • Construction Value: $ 48 million • Project Leadership: Cody Parham, Joe Grubbs, Tim Fish, Raheel Dossani, Will Bowdoin, Marc Gambrill, Tim Ward, Tom Bair, Amy Champagne-Baker, and Raj Krishnasamy**

# Our Sustainable Business Practices

## HDR's Initiatives Toward Its Own Sustainable Business Practices and Demonstrated Commitment to Conservation

We put a strong emphasis on sustainability at all levels of the company. We believe it is our professional responsibility to our employees, clients, the industry, and the environment to challenge conventional thinking as we create places that are good for our clients, our communities, and our planet. Our Sustainability Vision guides our decisions related to sustainability. As part of our company's strategic planning process, the vision is updated regularly to verify that we are at the forefront of sustainable business practices. We began the process of addressing our organization's environmental impacts over 10 years ago. We have focused on understanding our most significant impacts as a service organization and are aggressively working to reduce our carbon footprint by improving operational efficiencies, engaging staff participation to green our offices, and developing sustainable solutions in the areas where we have the most significant impacts.




Sustainability is a core component of project delivery at HDR. We partner with you to determine integrated, sustainable solutions – always striving to provide more value on your projects. Our firm is consistently ranked among the top green design firms, and we have a history of delivering award-winning work.

A successful sustainability solution is not only good for the environment; it must also lead to better economic and social outcomes. We will work toward this balance while finding the smartest solution for you.

Our ability to deliver a project that meets your sustainability goals is enhanced by the broad expertise of our people. Our in-house specialists include experts in climatology, natural resources, renewable energy, LEED®, Envision®, commissioning, economic modeling, measurement and verification and community planning. We can quickly pull together the top minds and resources across the country to help us meet your unique project needs.

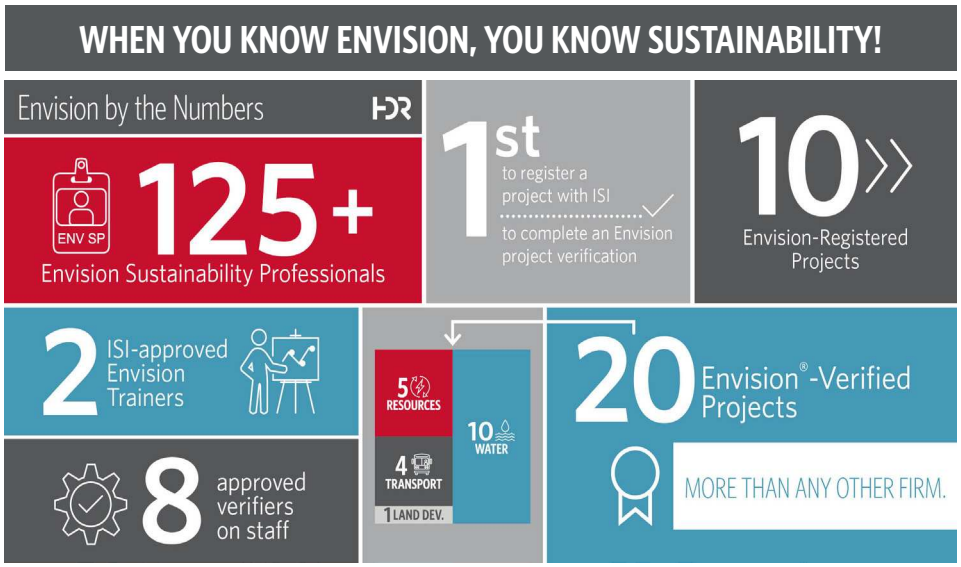
By working together, we can push the boundaries of what's possible and deliver a sustainable project that will flourish in your community.

HDR has helped shape the Institute for Sustainable Infrastructure (ISI) and Envision (ENV SP) community through active involvement in the organization and through helping guide our clients to register projects for verification. HDR keeps an in-house library of learned for Envision credit applications, which allows us to efficiently advise the City on how to earn potential credits in a cost-effective manner.

## Leadership in ISI and Envision

Below are some of the ways HDR is committed to ISI and Envision:

- First company to register a project with ISI & first to achieve an Envision project verification
- Charter Member of the Institute for Sustainable Infrastructure (ISI)
- First to commit to 100 ENV SPs; numerous firms followed our lead; currently more than 125* ENV SPs
- HDR professional on the Envision Review Board (ERB)
- HDR is helping ISI develop an Envision review for programmatic level projects
- Active on ISI committees
- Actively engaged in numerous Envision projects
- Envision third-party verification provider with many verifiers on staff
- Two HDR employees approved to provide Envision Accreditation Workshops that can be delivered to clients




## 20 VERIFIED PROJECTS

1. William Jack Hernandez Sport Fish Hatchery, Anchorage, AK – First-Ever Envision Project Award (Gold)
2. Historic Fourth Ward Park, Atlanta, GA (Gold)
3. Holland Energy Park, Holland, MI (Platinum)
4. Kansas City Streetcar, Kansas City, MO (Platinum)
5. Hardeeville Water Reclamation Facility, Hardeeville, SC (Bronze)
6. I-4 Ultimate Project, Orlando, FL (Platinum)
7. City of Phoenix, 27th Avenue Compost Facility, Phoenix, AZ (Silver)
8. Marshalltown Generating Station, Marshalltown, IA (Platinum)
9. Dubuque Solar Project, Dubuque, IA (Platinum)
10. Georgetown Wet Weather Treatment Station, Seattle, WA (Platinum)
11. Cedar River Flood Control System at New Bohemia/Sinclair Neighborhood, Cedar Rapids, IA (Bronze)
12. OC Streetcar, Santa Ana, CA (Silver)
13. Bayonne Bridge Navigational Clearance Program, New York, NY (Silver)
14. Southport Levee Improvements, West Sacramento, CA (Platinum)
15. West Riverside Energy Center, Beloit, WI (Platinum)
16/17. Owls Head and Oakwood Beach Wastewater Treatment Plants, Dechlorination Facilities, New York, NY (Bronze)
18. BDCWWTF Solids Dewatering and Campus Wide Improvements, Westminster, CO (Bronze)
19. Little Patuxent Water Reclamation Plant, Biosolids Master Plan/ Processing Facilities Improvements, Howard County, MD (Silver)
20. Riverfront Revitalization Project, Omaha, NE (Platinum)

# Meeting Your Requirements

As required in the RFQ, HDR meets and exceeds your minimum qualifications of 5 years of experience for general engineering experience, both nationally and locally.

Our team combines Fort Lauderdale experienced local staff with national experts on airfield design. Teaming our local and national experts will yield a more efficient design process, save design costs, and deliver a high-quality project for FXE. We can confidently say this because we have done it over and over for clients across the country, and especially locally with this same team.

As demonstrated above, the HDR team understands the challenges associated with rehabilitating a primary runway at facilities similar to FXE and bring the subject matter experts needed to address them. Just as importantly, HDR leadership, personnel selected for this assignment, and our considerable bench of additional resources understand the commitment that it will take to deliver your runway rehabilitation and are available and eager to support this contract for FXE without conflicting with other projects.

The HDR team is organized for technical proficiency and working knowledge of FXE's policies, procedures, and methods for conducting business. We have extensive national and local experience at a variety of airports demanding creative solutions for complex construction phasing and a wide range of project types.

## Business Structure

HDR (Corporation) is a full-service employee-owned firm specializing in engineering, architectural, environmental, community planning, and management consulting services with more than 11,000 professionals in more than 200 locations worldwide. As a Nebraska Corporation founded in 1917 and licensed to do business in Florida, HDR employs more than 500 professionals throughout the state and has 3 offices in South Florida. As a multi-disciplinary firm, HDR has professional capabilities to provide complete socioeconomic, infrastructure, environmental, and community involvement services. HDR is an employee-owned company. No manager or employee owns more than 1% stock in the company.

### Engineering

DBPR ONLINE SERVICES

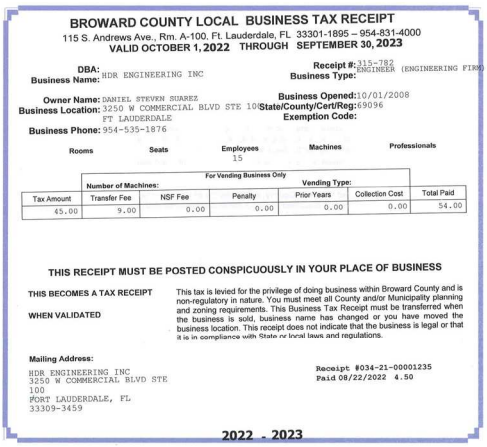
Licensee

| | | | |
|---|---|---|---|
| Name: | HDR ENGINEERING, INC. | License Number: | 4213 |
| Rank: | Registry | License Expiration Date: | |
| Primary Status: | Current | Original License Date: | 08/16/1985 |

Related License Information

| License Number | Status | Related Party | Relationship Type | Relation Effective Date | Rank | Expiration Date |
|---|---|---|---|---|---|---|
| 56792 | Current, Active | HUNT, JENNIFER ERIN | Registry | | Professional Engineer | 02/28/2023 |

### Broward County



BROWARD COUNTY LOCAL BUSINESS TAX RECEIPT
115 S. Andrews Ave., Rm. A-100, Ft. Lauderdale, FL 33301-1895 – 954-831-4000
VALID OCTOBER 1, 2022 THROUGH SEPTEMBER 30, 2023

DBA:
Business Name: HDR ENGINEERING INC
Receipt #: 315-782
Business Type: ENGINEER (ENGINEERING FIRM)
Owner Name: DANIEL STEVEN SUAREZ
Business Location: 3250 W COMMERCIAL BLVD STE 100 FT LAUDERDALE
Business Opened: 10/01/2008
State/County/Cert/Reg: 69096
Exemption Code:
Business Phone: 954-535-1876

| Rooms | Seats | Employees | Machines | Professionals |
|---|---|---|---|---|
| | | 15 | | |

For Vending Business Only
Number of Machines: Vending Type:

| Tax Amount | Transfer Fee | NSF Fee | Penalty | Prior Years | Collection Cost | Total Paid |
|---|---|---|---|---|---|---|
| 45.00 | 9.00 | 0.00 | 0.00 | 0.00 | 0.00 | 54.00 |

THIS RECEIPT MUST BE POSTED CONSPICUOUSLY IN YOUR PLACE OF BUSINESS

THIS BECOMES A TAX RECEIPT WHEN VALIDATED

This tax is levied for the privilege of doing business within Broward County and is non-regulatory in nature. You must meet all County and/or Municipality planning and zoning requirements. This Business Tax Receipt must be transferred when the business is sold, business name has changed or you have moved the business location. This receipt does not indicate that the business is legal or that it is in compliance with State or local laws and regulations.

Mailing Address:
HDR ENGINEERING INC
3250 W COMMERCIAL BLVD STE 100
FORT LAUDERDALE, FL 33309-3459

Receipt #034-21-00001235
Paid 08/22/2022 4.50

2022 - 2023

### Certificate of Status

Sunbiz.org Division of Corporations
an official State of Florida website

Department of State / Division of Corporations / Search Records / Search by Entity Name /

Previous On List Next On List Return to List HDR Search

Events No Name History

Detail by Entity Name

Foreign Profit Corporation
HENNINGSON, DURHAM & RICHARDSON, INC.

Cross Reference Name
HDR, INC.

Filing Information

| | |
|---|---|
| Document Number | F16000004421 |
| FEI/EIN Number | 47-0663756 |
| Date Filed | 10/03/2016 |
| State | DE |
| Status | ACTIVE |
| Last Event | AMENDMENT |
| Event Date Filed | 06/03/2022 |
| Event Effective Date | NONE |

Principal Address
1917 S. 67th Street
Omaha, NE 68106

Changed: 04/22/2021

Mailing Address
1917 S. 67th Street
Omaha, NE 68106

Changed: 04/22/2021

Registered Agent Name & Address
C T CORPORATION SYSTEM
1200 SOUTH PINE ISLAND ROAD
PLANTATION, FL 33324

## Ability to satisfy all of the minimum qualification requirements

**Firms shall be in the business of general engineering, for at least five (5) years, and must possess sufficient financial support, equipment and organization to ensure that it can satisfactorily perform the services if awarded a contract. Firms must demonstrate that they, or the principals assigned to the project, have successfully provided services with similar magnitude to those specified in the scope of services to at least one city similar in size and complexity to the City of Fort Lauderdale or can demonstrate they have the experience with large scale private sector clients and the managerial and financial ability to successfully perform the work.**

**Response:** HDR has been in the business of general engineering for more than 100 years. We possess all the resources to satisfactorily perform the services. For more information on HDR's firm qualifications, see Section 3: Firm Qualifications and Experience.

Our firm and our Program Manager, Cody Parham, have successfully provided services of similar magnitude, including the past 3 cycles of the general engineering contract for the City, going back 10 years.

**Firms shall satisfy each of the following requirements cited below. Failure to do so may result in the proposal being deemed non-responsive.**

**2.8.1 Proposer or principals shall have relevant experience in aviation design development, aviation construction engineering and inspection, and aviation grant support services. Project manager(s) assigned to the work must have five (5) years' experience in aviation design development, airfield construction management and has served as project manager(s) on projects with similar scope and scale or larger. Project manager(s) assigned to the work shall have knowledge on FAA design standards and grant requirements for the project.**

**Response:** Our Project Manager, Cody Parham has 16 years of relevant experience, including as Program Manager for the past 3 cycles of the general engineering contract for the City. Each of our leadership team members have at least 5 years of relevant experience. For more information about our project team member qualifications, please see Section 6 - Qualifications and Experience of Project Team.

**2.8.2 Before awarding a contract, the City reserves the right to require that a firm submit such evidence of its qualifications as the City may deem necessary. Further, the City may consider any evidence of the financial, technical, and other qualifications and abilities of a firm or principals, including previous experiences of same with the City and performance evaluation for services, in making the award in the best interest of the City.**

**Response:** Acknowledged. HDR is prepared to provide any additional information requested by the City.

**2.8.3 Firm or principals shall have no record of judgments, pending lawsuits against the City or criminal activities involving moral turpitude and not have any conflicts of interest that have not been waived by the City Commission.**

**Response:** In today's legal environment, claims and litigation are a reality for any large company in the industry, regardless of performance or merit. When claims do occur, we are proactive and cooperative in reaching a resolution that is fair and reasonable to all. We value the confidences of our clients as well as our contractual commitments to confidentiality, and do not discuss with third parties the circumstances involving ongoing projects. We would take the same position with information regarding our work on this project. If necessary, we would be willing to meet in person with you to discuss the merits or background of past claims. There are no claims or litigation that could impede our ability to perform this project, and we have maintained professional liability insurance in force continually since 1958 for the protection of us and our clients.

**2.8.4 Neither Firm nor any principal, officer, or stockholder shall be in arrears or in default of any debt or contract involving the City, (as a party to a contract, or otherwise); nor have failed to perform faithfully on any previous contract with the City.**

**Response:** As an employee-owned firm, our assets are managed and invested with exceptional care. We have established strong risk controls and are committed to managing our company with an eye toward long-term financial health and stability. This commitment has enabled us to thrive for more than 100 years in every economic environment and allows us to be a reliable partner for our clients.

Our financial statements are prepared and audited annually by Ernst & Young, LLC, including a FAR audit. We are financially sound with gross revenues of $2.6 billion (2019) and a strong balance sheet with stockholders' equity of $1.77 billion (2019).

**2.8.5 Consultant(s) must be appropriately licensed and registered in the State of Florida in the required field of service.**

**Response:** See page 23

# 4 HISTORY & PAST PERFORMANCE

Runway 9-27 is the sole available runway for most jets at FXE

HDR

## SERVICES HDR PROVIDED

- Prime consultant directly contracted with the Blue Grass Airport to deliver project management, cost, schedule, and quality control
- Programming
  - Geotechnical investigation
  - FAA and grants liaison
  - Pavement testing and evaluation
  - Stakeholder outreach
- Design
  - Civil and electrical design
  - Construction phasing and safety
  - Construction scheduling
  - Cost estimating
  - Pavement design
  - Bid evaluation
- Construction
  - Contract administration
  - Construction management
  - Construction materials testing
  - Construction inspection

## PROPOSED TEAM MEMBERS WHO WORKED ON THIS PROJECT

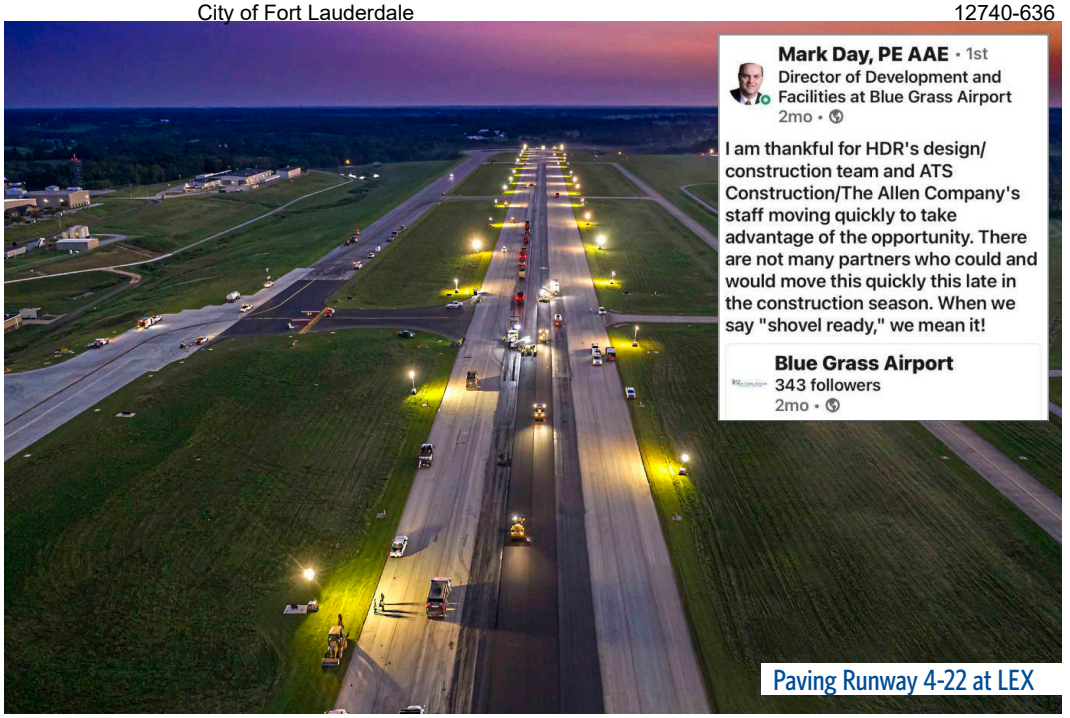
- Cody Parham - Sr. Design Engineer
- Joe Grubbs - Sr. Technical Advisor
- Tim Fish - Planning Project Manager
- Raheel Dossani - Project Engineer
- Will Bowdoin - Project Engineer
- Tim Ward - Design and Construction Project Manager
- Tom Bair - Sr. Engineer

## PROJECT COST & SCHEDULE

- Design Cost: $2 million
- Construction Cost: $17 million
- Design Completed: 2020
- Construction Completed: 2022

## OWNER REFERENCE

Mark Day
Lexington-Fayette Urban County Airport Board
Vice President, Planning and Development
(859) 425-3100
mday@bluegrassairport.com



Paving Runway 4-22 at LEX

# Runway 4-22 Rehabilitation, Blue Grass Airport (LEX)

*Lexington, Kentucky*

This project was designed to allow for a 72-hour runway closure for RW 4-22 to complete the milling, paving and remarking of the entire runway. This required close coordination with the Blue Grass Airport Engineering/Operations Staff as well as the FAA to develop the CSPP in accordance with Advisory Circular 150/5370-2G, Operational Safety on Airports During Construction. As construction progressed toward the weekend closure, HDR hosted a series of 5 workshops with the contractor, key subcontractors, QA/QC personnel, LEX Engineering/Maintenance/Operations staff. The workshops focused on site safety, security, communication protocols, staffing, haul routes (on and off site), milling operation, paving plans, quality control, weather contingency plans, staging/laydown, and site cleanup. This allowed us to track the progression throughout the weekend so that all the stakeholders were aware of how progress toward the reopening was tracking all while staying within the bounds for safety and security identified within the CSPP.

Activate this QR code for a deeper look at the 72-hour construction effort

## LESSONS LEARNED APPLIED TO THIS PROJECT

- Contractor coordination is a priority at the beginning. Held a series of 5 construction workshops with detail increasing throughout series of workshops.
- Engage with asphalt contractors at least 10 months prior to bid. If not, contractors won't have time to prepare and the project will not receive adequate responses and fair prices from bidders. Workshops are also useful to figure out complex precision milling.
- Plan for 2 layers of redundant equipment and materials for critical activities like milling, paving, and compaction.
- Front load any required pavement structural corrections, prior to full shutdown.

## SIMILAR SCOPE AND SCALE TO PROPOSED PROJECT

- 7,000 ft long x 150 ft wide asphalt grooved runway with 10 connecting taxiways
- Primary runway
- Precision asphalt mill and overlay
- 318 light fixtures
- Deep patching and 34,000 ft of crack sealing
- 72-hour airport closure
- Tenant coordination

HDR

## SERVICES HDR PROVIDED

- Prime consultant directly contracted with the Fort Lauderdale Executive Airport to deliver project management, cost, schedule, and quality control for their capital program
- Programming
  - Geotechnical investigation
  - Pavement testing and evaluation
  - Tenant outreach
- Design
  - Civil and electrical design
  - Construction phasing and safety
  - Construction scheduling
  - Cost estimating
  - Pavement design
  - Bid evaluation
  - Construction
  - Contract administration
  - Construction materials testing
  - Construction inspection

## PROPOSED TEAM MEMBERS WHO WORKED ON THIS PROJECT

- Cody Parham - Project Manager
- Joe Grubbs - Quality Manager
- Tim Fish - Principal in Charge
- Raheel Dossani - Deputy Project Manager
- Will Bowdoin - Project Engineer
- Marc Gambrill - Sr. Advisor
- Tim Ward - Project Engineer
- Tom Bair - Project Engineer
- Amy Champagne-Baker - Electrical Design Lead
- Mike Mossey - Survey Lead
- Raj Krishnasamy - Geotechnical lead

## PROJECT COST & SCHEDULE

- Design Cost: $ 1.5 million
- Construction Cost: $ 11 million
- Design ongoing - On call contract
- Construction ongoing - On call contract

## OWNER REFERENCE

Carlton Harrison
City of Fort Lauderdale
Assistant Airport Director
(954) 828-4976
CHarrison@fortlauderdale.gov

HDR staff inspecting Taxiway A pavement at FXE

# General Engineering Consultant, Fort Lauderdale Executive Airport

*Fort Lauderdale, Florida*

Since 2014, HDR has provided general consulting services to support the Fort Lauderdale Executive Airport (FXE) development programs via an on-call contract. We have worked closely with the airport engineer and management to deliver 52 task orders while coordinating a team of 7 subconsultants. Highlighted tasks include:

- Runway 9-27 and 13-31 Pavement Repair Design and Construction (6,002 ft x 100 ft)
- Runway 9-27 Extension Justification
- Runway 9-27 Extension Tenant Support Letter Writing Campaign
- Runway 9-27 Rehabilitation Cost Estimating and Programming
- Airfield pavement rehabilitation design and construction for Taxiways B, D1, E, G, L, N
- Capital improvement programming of the Runway 9-27 Rehabilitation under the 2018 Master Plan Update

## LESSONS LEARNED APPLIED TO THIS PROJECT

- Runway 9-27 has a Tensar Geogrid interlayer which will foul a milling machine. The geogrid must remain in place if possible.
- Mission critical medical operators are based at FXE. Airport closures must be coordinated months in advance with these operators to allow for alternate operating sites.

## SIMILAR SCOPE AND SCALE TO PROPOSED PROJECT

- Rehabilitation of Runway 9-27 pavements
- Asphalt mill and overlay
- 72-hour airport closure
- Tenant coordination

CITY OF
FORT LAUDERDALE

November 1, 2021

RE: HDR Engineering, Inc. Reference

HDR is working with the City of Fort Lauderdale as part of the team selected to execute the city's Stormwater Master Plan Modeling and Design Implementation program.

HDR is currently providing professional services that will address chronic flooding and other stormwater management issues, including long-term issues related to sea level rise. The city is comprised of highly urbanized neighborhoods with much of its coastal land area lying within the floodplain. This, in combination with limited soil storage, aging and undersized stormwater infrastructure, high tidal surges, and seasonal high intensity storm events, makes the city susceptible to severe flooding. Specifically, HDR is working on a citywide water model, and they have designed neighborhood drainage improvements and have assisted with public outreach efforts.

HDR's staff is professional, and they possess the technical expertise to successfully complete a variety of projects. The City of Fort Lauderdale is pleased with the work performed by HDR and we would recommend them for future projects.

If you have any questions, please feel free to contact me. I can be reached at (954) 828-6720 or RPetrica@fortlauderdale.gov.

Sincerely,

Rares Petrica, P.E.
Senior Project Manager

PUBLIC WORKS DEPARTMENT
100 N. ANDREWS AVENUE, FORT LAUDERDALE, FLORIDA 33301
TELEPHONE (954) 828-5772, FAX (954) 828-5074
WWW.FORTLAUDERDALE.GOV

## SERVICES HDR PROVIDED

- Prime consultant directly contracted with Palm Beach County to deliver project management, cost, schedule, and quality control for their capital program
- Programming
  - Survey
  - Geotechnical investigation
  - Wildlife mitigation
  - Pavement testing and evaluation
  - Grant support
- Design
  - Civil and electrical design
  - NAVAIDs
  - Construction phasing and safety
  - Construction scheduling
  - Cost estimating
  - Pavement design

## PROPOSED TEAM MEMBERS WHO WORKED ON THIS PROJECT

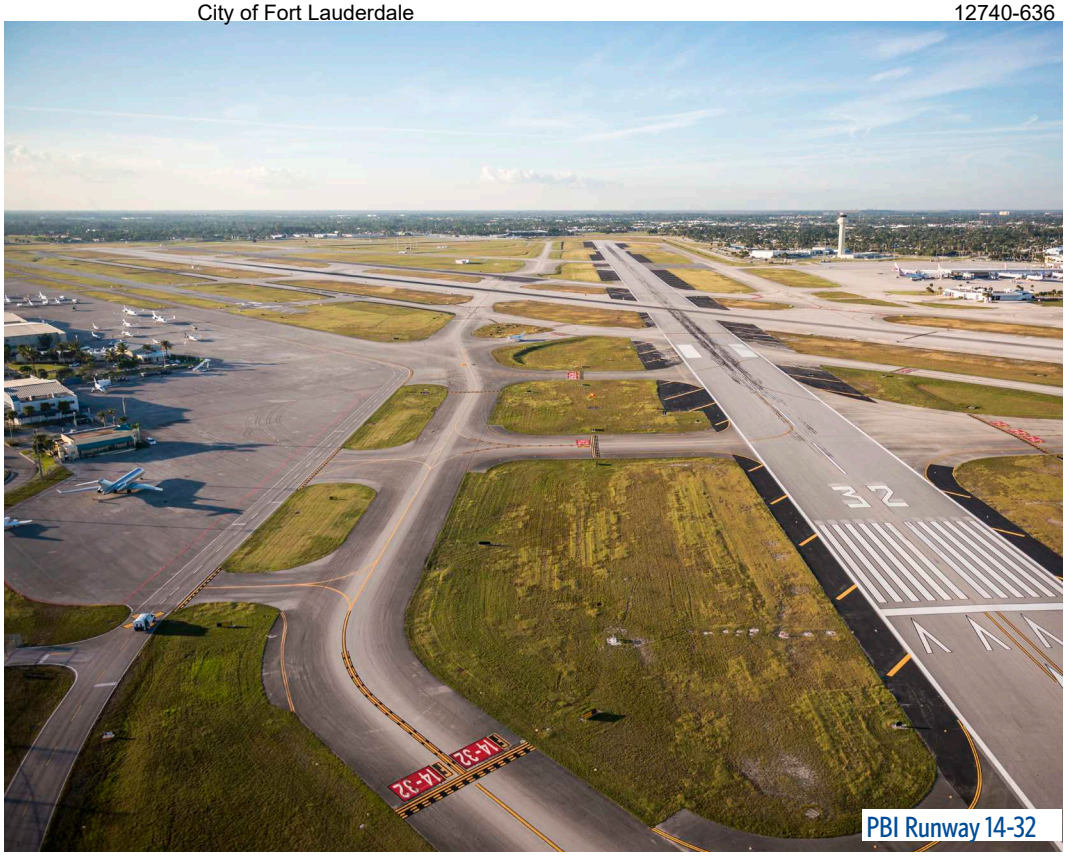
- Cody Parham - Project Manager
- Joe Grubbs - Quality Manager
- Tim Fish - Principal in Charge
- Raheel Dossani - Deputy Project Manager
- Will Bowdoin - Deputy Project Manager
- Marc Gambrill - Sr. Advisor
- Tim Ward - Quality Control
- Tom Bair - Project Engineer
- Amy Champagne-Baker - Electrical Design Lead
- Raj Krishnasamy - Geotechnical Lead

## PROJECT COST & SCHEDULE

- Design Cost: $ 3.5 million
- Construction Cost: $ 48 million
- Design ongoing - On call contract
- Construction ongoing - On call contract

## OWNER REFERENCE

Cynthia Portnoy
Palm Beach County Department of Airports
Deputy Director of Development
(561) 471-7411
cportnoy@pbia.org



PBI Runway 14-32

# Airport Civil Consultant, Palm Beach County Department of Airports

*Palm Beach County, Florida*

Since 2018, HDR has provided civil consulting services to support Palm Beach International Airport (PBI), Palm Beach County Park Airport (LNA), and North County Airport (F45) development programs via an on-call contract. As prime consultant, we have worked closely with the airport engineer and management to deliver 4 runway rehabilitation designs while coordinating a team of 5 subconsultants. Highlighted tasks include:

- LNA Runway 4-22 Rehabilitation Design (3,256 ft x 75 ft)
- F45 Runway 9R-27L Rehabilitation Design (4,300 ft x 100 ft)
- PBI Central Airfield and Runway 14-32 Shoulders Rehabilitation Design (6,931 ft x 150 ft)
- LNA Runway 10-28 Surface Treatment Design (3,489 ft x 75 ft)

## LESSONS LEARNED APPLIED TO THIS PROJECT

- Break the non-critical components, like connecting taxiways, into bid alternates to maximize available funding.
- Use bio-retardant paint for critical runway markings. Reduces closures for cleaning from every 1 year, to every 3 years.
- If a runway is planned to be extended in the future, go ahead and flatten the future end quarter crown lengths of the runway to avoid doing it in the future.

## SIMILAR SCOPE AND SCALE TO PROPOSED PROJECT

- Rehabilitation GA runways in South Florida
- Asphalt mill and overlay
- 72-hour airport closure for 5 consecutive weekends

## SERVICES HDR PROVIDED

- Prime consultant directly contracted with the CRAA to deliver project management, cost, schedule, and quality control for their capital program
- Programming
  - Geotechnical investigation
  - Pavement testing and evaluation
  - FAA coordination and grant support
- Design
  - Civil and electrical design
  - Construction phasing and safety
  - Construction scheduling
  - Cost estimating
  - Pavement design
  - Bid evaluation
- Construction
  - Contract administration
  - Construction materials testing
  - Construction inspection

## PROPOSED TEAM MEMBERS WHO WORKED ON THIS PROJECT

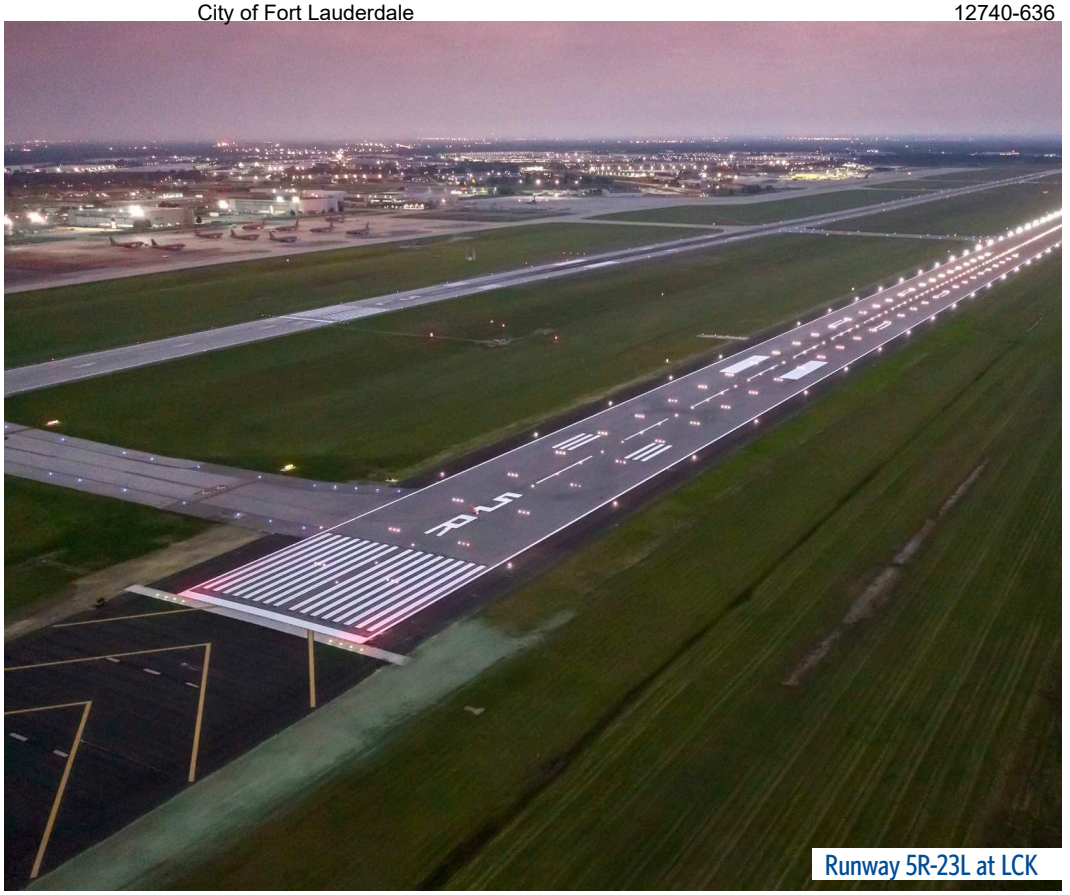
- Cody Parham - Project Engineer
- Joe Grubbs - Sr. Technical Advisor
- Tim Fish - Quality Manager
- Raheel Dossani - Project Engineer
- Will Bowdoin - Project Engineer
- Tim Ward - Quality Manager
- Tom Bair - Project Manager

## PROJECT COST & SCHEDULE

- Design Cost: $ 1 million
- Construction Cost: $ 12 million
- Design Completed: 2020
- Construction Completed: 2021

## OWNER REFERENCE

Bart Powell
Columbus Regional Airport Authority
Project Manager
(614) 239-4000
bpowell@columbusairports.com



Runway 5R-23L at LCK

# Runway 5R-23L Rehabilitation, Rickenbacker International Airport, Columbus Regional Airport Authority (CRAA)

*Columbus, Ohio*

The Columbus Regional Airport Authority (CRAA) selected HDR to provide engineering design of the Runway 5R-23L Rehabilitation and Modifications of Standards (MOS) Phase 2B project at Rickenbacker International Airport (LCK), in Columbus, Ohio. Runway 5R-23L is 12,000 feet long and 200 feet wide, capable of providing service to the largest international cargo aircraft. As the primary runway at LCK, construction scheduling was critical to maintaining airport operations. The work consisted of new 40-foot paved shoulders, blast pad expansions, taxiway reconstruction and reconfiguration, new underdrain, and replacement of existing runway edge light system, including new LED fixtures, new transformers, new cable in new conduit as well as new home run cable in existing conduit back to the electrical vault.

## LESSONS LEARNED APPLIED TO THIS PROJECT

- Before construction commences, verify nearby new construction to provide a smooth pavement tie-in.
- Consider the additional load put on secondary runways while the primary runway is closed. Secondary runways may need repairs after construction.
- Similarly to FXE, we have a lot of experience with the construction firms in Central Ohio and used this understanding of their capabilities, expertise, approach to bidding, and capacity of pavement plants to successfully plan the construction phasing in a cost effective manner.

## SIMILAR SCOPE AND SCALE TO PROPOSED PROJECT

- Primary runway (12,000 ft x 200 ft)
- Asphalt mill and overlay and reconstruction
- 5-hour window nightly airport closure for deep pavement repairs in the runway

COLUMBUS
REGIONAL AIRPORT AUTHORITY

March 16, 2022

Mr. Renato Camacho, AAE, PE, PTOE
President & CEO
5400 Lauby Road NW #9
North Canton, Ohio 44720

The Columbus Regional Airport Authority has worked with HDR on multiple projects over the past several years; most recently being the completion of Runway 5R-23L Rehabilitation and MOS Improvements Phase 2B here at Rickenbacker International Airport. Over the past several years, HDR has continued to provide expertise in pavement management, design, evaluation, specification development, FAA grants, and Construction Management Services to the Authority just to name a few.

HDR has proven to be an extremely knowledgeable, professional, and cooperative firm to work with in all their roles to date. Their knowledge has been outstanding in design and execution and they have offered realistic approaches and solutions to our issues. Deliverables have been timely and complete. Whether it's a quick question, or an issue that requires research, HDR has always been available to answer an email or to chat on the phone at any time.
I would recommend HDR for any projects related to pavement engineering, Runway/Taxiway design, stormwater management, FAA guidance and construction management services. They are responsive and provide solutions to keep projects on schedule and on budget.

Sincerely,

Bart Powell

Bart Powell, PMP
Project Manager

4600 International Gateway | Columbus, Ohio 43219 | 614.239.4000
columbusairports.com

PORT COLUMBUS RICKENBACKER INLAND PORT BOLTON FIELD

## SERVICES HDR PROVIDED

- Prime consultant directly contracted with the TAA to deliver project management, cost, schedule, and quality control for their capital program
- Programming
  - Geotechnical investigation
  - Survey
  - Pavement testing and evaluation
  - FAA coordination and grant support
- Design
  - Civil and electrical design
  - Construction phasing and safety
  - Construction scheduling
  - Cost estimating
  - Pavement design
  - NAVAIDs
  - Stormwater management
  - Bid evaluation
- Construction
  - Contract administration

## PROPOSED TEAM MEMBERS WHO WORKED ON THIS PROJECT

- Cody Parham - Project Engineer
- Joe Grubbs - Senior Technical Advisor
- Raheel Dossani - Project Engineer
- Will Bowdoin - Project Engineer
- Tom Bair - Design Manager
- Tim Ward - Quality Control

## PROJECT COST & SCHEDULE

- Design Cost: $ 8 million
- Construction Cost: $ 80 million
- Design Completed (anticipated): 2023
- Construction Completed (anticipated): 2025

## OWNER REFERENCE

Victor Palma
Tucson Airport Authority
Director of Civil Development
(520) 307-9816
vpalma@flytucson.com

Rendering of Runway 12R-30L at TUS

# New Runway 12R/30L, Tucson International Airport, Tucson Airport Authority (TAA)

*Tucson, Arizona*

We are providing concept programming, final design, and construction services for the demolition of the existing general aviation Runway 11R-29L and replacing it with a 10,996-foot-long x 150-foot-wide Runway 12R-30L, including two parallel taxiways. The project also includes multiple connecting and crossing taxiways, associated drainage improvements that include five detention basins, and new airfield lighting vault. The project is the largest part of the Airfield Safety Enhancement (ASE) Program at TUS, which includes safety and standards improvement on the airfield, and is the largest project in the history of the Tucson Airport Authority (TAA).

*"HDR has shown very consistent, responsive, and engaging on all matters of communication. Project presentations are very well organized, and the team understands how to receive feedback. Aviation design is a focused specialty in engineering, a successful team is very passionate about their practice; this is evident in HDR.*

*A key component of managing a design or construction project is deciding early on who needs to be involved in key meetings, major contributors, choosing the correct technical staff for the meeting. HDR has utilized only key staff in project meetings, controlling the number of technical staff to those that warrant the need. As owner, one tends to observe if there are staff in attendance that do not contribute to the project meetings. HDR seems to have found the right mix, the correct team in place to achieve the goals of runway design and construction."*

***Victor Palma, Director of Civil Development/Airport Engineer - Tucson Airport Authority***

## LESSONS LEARNED APPLIED TO THIS PROJECT

- Polymer-modified asphalt binders have become common in hot weather climates and most pavement crews have the ability to work with them. We will use these superior binders to extend the life of the runway pavement and the grooves.
- Work with the FAA to select materials based on availability, historical performance evaluations and cost-effectiveness.

## SIMILAR SCOPE AND SCALE TO PROPOSED PROJECT

- Hot weather asphalt paving
- Multi-phased construction due to funding constraints
- Environmental clearances included protected species considerations
- Pro-active phasing development approach led to strong bidder interest and competitive construction pricing

# 5 APPROACH TO SCOPE OF WORK

Cody and Raheel take a responsive and hands-on approach to construction quality assurance. Shown here inspecting the Runway Incursion Mitigation light can installation at FXE.

# Approach to Scope of Work

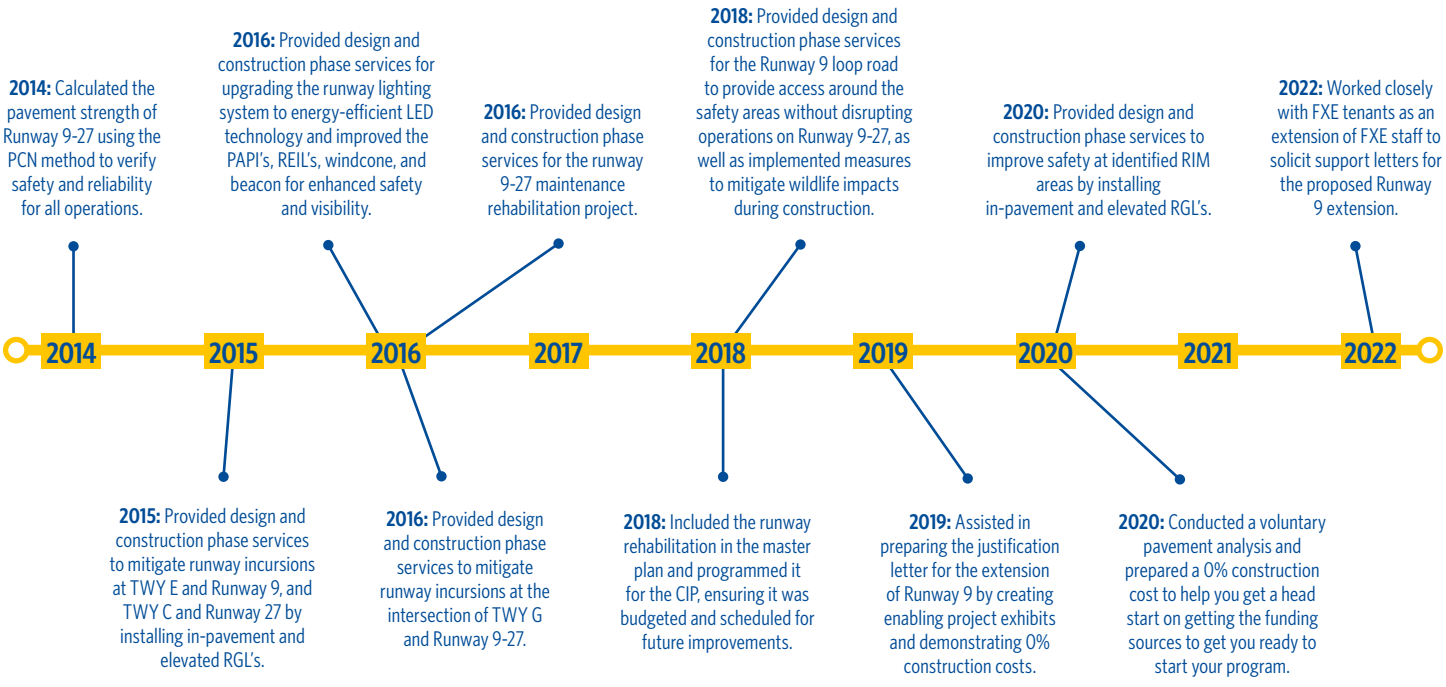
## Understanding FXE's Needs

Runway 9-27 is a crucial component of the infrastructure at FXE, supporting businesses and serving as a driving force for the economic growth of Fort Lauderdale. As the primary runway for jets, it is imperative that we minimize disruptions to airport operations during rehabilitation. In addition, FXE is expecting an increase in jet traffic to support existing and incoming fixed-base operators, which will place additional strain on the pavement. According to the 2019 FDOT Statewide Airfield Pavement Management Program report, the pavement condition index (PCI) of Runway 9-27 is currently 75-76. We anticipate that this PCI will drop below the critical threshold of 70 by 2023, necessitating major rehabilitation efforts.

## Understanding of Project's Goals and Objectives

For the past 8 years, HDR has been working with your staff to assess and enhance the capabilities of Runway 9-27. Below is a timeline summarizing the projects Cody and Raheel specifically have led to maintain and enhance Runway 9-27. Based on our work history at Runway 9-27, we've developed an approach to the rehabilitation of Runway 9-27 and understand your challenges on Day 1.

## Our Approach is Based on Nearly a Decade of Enhancing the Safety and Capacity of Runway 9-27



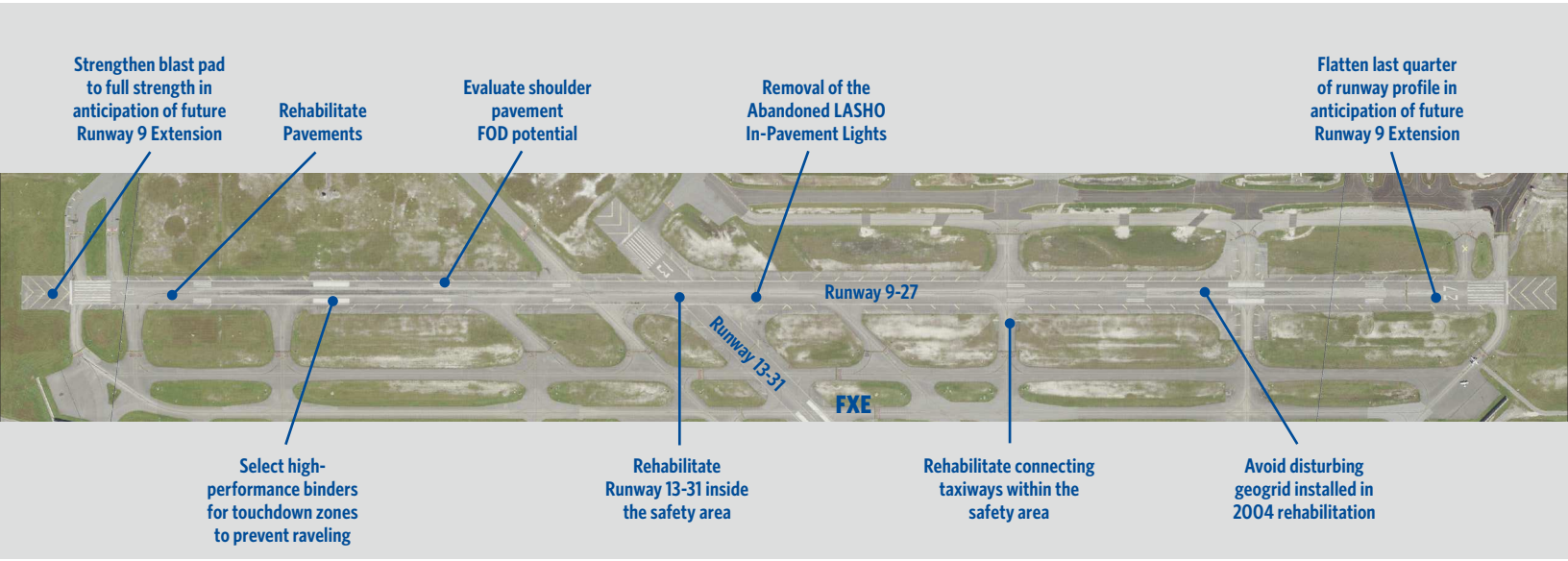
To maintain continued safe operation and accommodate growth at FXE, it is essential to have a reliable primary runway. From our discussions with Airport leadership, we have identified the key elements to achieve the Airport's vision of success for this project shown below.

| GOALS | PROVIDE A DURABLE, RELIABLE RUNWAY FACILITY<br>GOAL 1 | MINIMIZE IMPACTS TO OPERATIONS DURING CONSTRUCTION<br>GOAL 2 | EXECUTE THE WORK WITHIN SCHEDULE AND BUDGET EXPECTATIONS<br>GOAL 3 |
|---|---|---|---|
| OUR APPROACH | • Match the pavement rehabilitation method that minimizes construction uncertainty with a performance grade pavement design that is locally available and performs in the South Florida climate. | • We will sequence construction to minimize operational impacts while enabling efficient construction activities, resulting in an aggressive but achievable construction schedule. | • Develop a realistic construction schedule based on contractor interviews and recent contractor production rates.<br>• Strike a balance between the required improvements and value-added ideas that respect available budget. |

| WE'VE MET THESE GOALS BEFORE | PROVIDE A DURABLE, RELIABLE RUNWAY FACILITY | MINIMIZE IMPACTS TO OPERATIONS DURING CONSTRUCTION | EXECUTE THE WORK WITHIN SCHEDULE AND BUDGET EXPECTATIONS |
|---|---|---|---|
| General Engineering Consultant, MDAD (Runway 13-31 at TMB) | ✈ | ✈ | ✈ |
| Runway 12R/30L and Associated Taxiways Design Services, Tuscon International Airport (TUS) | ✈ | ✈ | ✈ |
| Runway 4-22 and Taxiway A Rehab, Runway 22 Departure EMAS, Blue Grass Airport (LEX) | ✈ | ✈ | ✈ |
| Central Airfield Rehabiliation (Runway 14-32 at PBI) Palm Beach International Airport (PBI) | ✈ | ✈ | ✈ |
| Runway 5R-23L Rehabilitation and Modifications of Standards Phase 2B, Rickenbacker International Airport (LCK) | ✈ | ✈ | ✈ |
| General Engineering Services, Fort Lauderdale Executive Airport (FXE) Runways 9-27 and 13-31 | ✈ | ✈ | ✈ |

## Our Overall Approach

HDR's overall approach identifies a set of key project elements and develops a detailed plan to execute them, based on proven experience from similar projects. These elements are shown together below in the Project Issues Map.




Runway 9-27 Rehabilitation Project Issues Map

Based on our understanding of the key project elements, we have identified four key approach elements on which to focus. In the pages below, we'll describe the challenges these elements bring, and provide our anticipated solutions for them.

# Key Element - Pavements

## CHALLENGE: Pavement Rehabilitation Development

The 2019 Statewide Airfield Pavement Management Program Report recommends a pavement rehabilitation method of removing (via milling) 2 inches of the existing runway surface followed by the placement of 2 inches of asphalt pavement. There are several construction methods to achieve this rehabilitation. Each method has cost, schedule, and operational implications that will need to be considered when preparing the project plans and specification. The challenge is selecting the mill and overlay methodology that will minimize runway closure time, within the specified budget while providing the desired durability and longevity for the runway pavement.

## SOLUTIONS

Our analysis will begin by determining the compliance of the runway's longitudinal and transverse grade with FAA standards outlined in Advisory Circular (AC) 150/5300-13B, "Airport Design." While we are aware that the airport is currently not experiencing any issues with centerline profile non-compliance or cross slope and RSA grading compliance, we will verify this as part of the program validation phase of the project. In anticipation of the Runway 9 extension, we will propose a method for flattening the last quarter of Runway 9-27's centerline profile (1,750 feet on the Runway 27 end) to minimize Runway 9 closures during the extension. There are several construction options/techniques that can be implemented for pavement grade corrections, and we will carefully evaluate each one to determine the best approach for this project. These options include:

- Historical Placement with Constant Depth Mill
- Current Industry Placement with Profile Mill

These and other potential rehabilitation options will be evaluated as part of our design once all the project constraints have been identified during the preliminary design. Our team will work in concert with FXE to determine the best solution to rehabilitate Runway 9-27 quickly and efficiently.

## PROVEN DELIVERY

HDR and our subconsultant, RDM, recently completed the rehabilitation of LEX's 7,000 ft x 150 ft runway, using profile milling to make grade and cross slow corrections. HDR developed a special allowance pay item for the contractor to mill scabbed pavements uncovered after initial milling, allowing the project to stay on schedule and under budget during its critical 72-hour closure.

HDR used a profile mill to correct centerline grades and cross slopes on the LEX Runway 4-22 Rehabilitation

## BENEFIT TO FXE

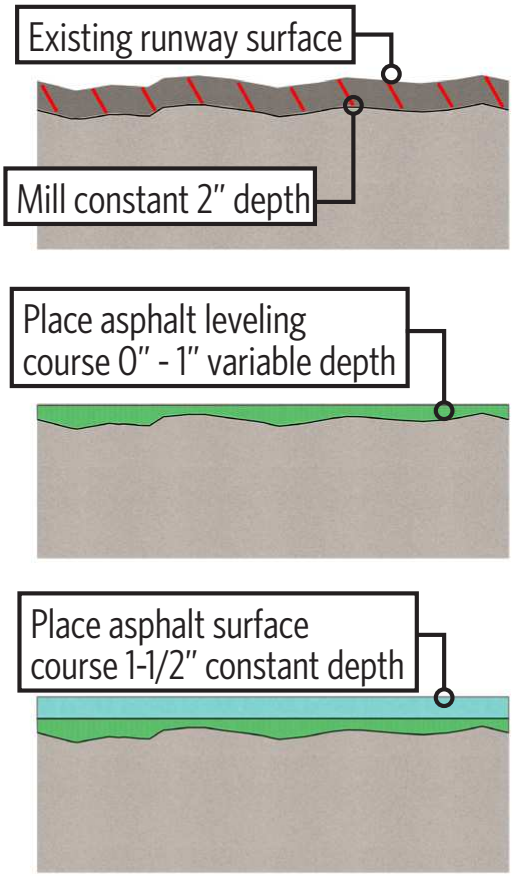
- Reduce the milling operation from 2-steps to 1-step
- Allows for simpler constant-thickness paving
- Improve pavement grading accuracy

## Key Element - Pavements

**CHALLENGE:** Pavement Rehabilitation Development (continued)

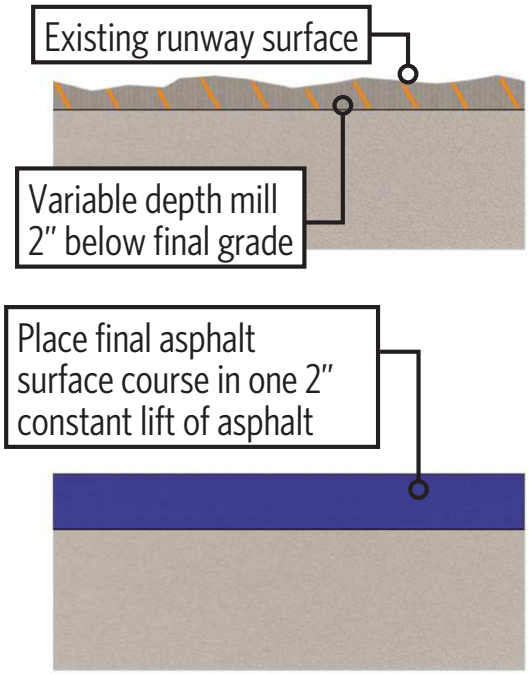
### EVALUATION OF PAVEMENT MILLING APPROACH OPTIONS

#### OPTION 1: CONSTANT DEPTH MILL (CONVENTIONAL 3-STEP PROCESS)




| | |
|---|---|
| MORE | Number of Construction Activities |
| LONGER | Construction Duration |
| EQUIVALENT | Construction Cost |
| ROUGHER | Smoothness |
| YES | Modification to FAA Specifications Required |
| YES | Contractor Expertise |

#### OPTION 2: PROFILE MILL (NEWER 2-STEP PROCESS)




| | |
|---|---|
| FEWER | Number of Construction Activities |
| SHORTER | Construction Duration |
| EQUIVALENT | Construction Cost |
| SMOOTHER | Smoothness |
| NO | Modification to FAA Specifications Required |
| VARIES | Contractor Expertise |

# Key Element - Pavements

## CHALLENGE: Selection of Pavement Binder

Select a performance-grade (PG) binder for the asphalt mix design that is available, economical, workable, and produces a long-lasting, low-maintenance pavement.

Runway 9-27 and its connecting taxiways are subject to some of the most demanding environmental and operational influences associated with airfield pavements, including:

- **Loading rates.** Frequent jet traffic with high tire pressures 'jackhammer' the pavement.
- **Channelized, slow traffic.** Typically at runway thresholds and taxiway holding positions.
- **High temperatures.** Typically cause internal material shear and deformation of the pavement.

The combination of high temperature with lesser-grade binders allows the aggregate within the pavement matrix to shift around and become displaced under certain loading and/or channelized traffic conditions. The result can lead to grooving deterioration, rutting and other pavement failures.

The challenge for this project is to meet this FAA requirement while drawing on FXE's previous experiences and successes with locally available, economical, and workable asphalt paving materials that have yielded a long-lasting, low-maintenance airfield.

## BENEFIT TO FXE

- Using locally available binders in lieu of FAA-recommended ones attracts more bidders and reduces construction costs.
- 'Right binder – right location' increases reliability and performance without increasing costs.

## SOLUTIONS

The typical DOT highway PG binder grade, per the Long-Term Pavement Performance Binder program by the Federal Highway Administration (FHWA), known as LTPP Bind, is PG 64-22 for the Fort Lauderdale area. However, the Florida DOT uses PG 67-22 as the base binder for Florida roadways. The FAA requires in the current Advisory Circular (AC) 150/5370-10, Specification P-401, "Asphalt Mix Pavement," that the PG binder grade for airfield pavements be increased over the typical roadway PG binder grade per the following criteria:

1. PG binder shall have a minimum increase of two grades over standard DOT-required grade in all airfield applications.
2. PG binder shall be increased by three grades over standard DOT-required grade in pavement areas with slow moving or stationary aircraft, such as runway thresholds (departure points).

Initially, we will look at the FAA requirement for pavement areas with slow-moving or stationary aircraft. With the typical DOT PG binder grade being PG 67-22, a three-grade increase would be PG 82-22. PG 82-22 would qualify as a high polymer grade, as shown below.

GOAL 1
DURABLE, RELIABLE RUNWAY

### DOT REQUIREMENTS FOR PERFORMANCE-GRADED ASPHALT BINDERS

| Florida | | Table 1: Requirements for Performance-Graded Asphalt Binders (Note 6) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Property | | Test Method: AASTHO (T), ASTM (D), other | Requirements by Performance Grade | | | | | |
| | | | 52-28 | 58-22 | 67-22 | 76-22 (PMA) | 76-22 (ARB) | High Polymer (3,4) |
| Original | | | | | | | | |
| Flash Point, F | | T48 | 450 min | | | | | |
| Rotational Viscosity, Pa*s (1) | 135° C (275° F) | T 316 | 3.0 max | | | | | |
| Dynamic Shear, kPa ($G^*/\sin\delta$, 10 rad./sec) (2) | At Grade Temperature | T 315 | 1.00 min. | | | | | |
| Phase Angle, ° | | | - | - | - | 75.0 max | 75.0 max | - |
| Solubility % | | T44 | 99.0 min. | | | | - | 99.0 min. |
| RTFO Residue | | T240 | | | | | | |
| Mass Change, % | | T240 | 1.00 max | | | | | |
| MSCR Test Temperature | | M 332/T 350 | 52° C | 58° C | 67° C | 67° C | | 76° C |
| MSCR, $J_{nr3.2}$ ($kPa^{-1}$) (2) | | | "S" 4.5 max. | | | "V" 1.0 max. | | 0.10 max. |
| MSCR, $J_{nrdiff}$ (%) (2,5) | | | 75 max. | | | | | - |
| MSCR, $\%R_{3.2}$ (2) | | | - | | | ≥29.371 ($J_{nr3.2}$)$^{-0.2633}$ | | ≥90.0 |
| PAV Residue | | R 28 | 90° C | 100° C | | | | |
| Dynamic Shear, kPa ($G^*\sin\delta$, 10 rad./sec.) | At Test Temperature | T 315 | 16° C | 22° C | 26.5° C | 26.5° C | 26.5° C | 26.5° C |
| | | | 5000 max. | | | 6000 max. | | |
| Creep Stiffness, MPa | At Test Temperature | T 313 | -18° C | -12° C | -12° C | -12° C | -12° C | -12° C |
| m-Value | | | 300 max. | | | | | |
| | | | 0.300 min. | | | | | |
| ΔTc | | ASTM D7643 | ≥ -5.0° C | | | | | |

## Key Element - Pavements

### CHALLENGE: Selection of Pavement Binder (continued)

Secondly, we would evaluate the pavement performance of Runway 9-27. The evaluation would include an assessment of the existing runway surface including:

- **Excessive surface wear.** Specifically evaluating the condition of the pavement grooves.
- **Weathering.** Observing to determine if there is exposed aggregate in the pavement surface, particularly along the existing longitudinal paving joint for loss of adhesion, causing particles to break free and potentially cause foreign object debris (FOD), which can potentially cause damage to aircraft.
- **Surface rutting.** Evaluate if rutting is present. If present, determine if rutting is from an internal asphalt layer failure.

HDR selected the locally-available PG 76-22 binder for the hot weather Runway 12R-30L at TUS and obtained FAA approval for the variance from their specification.

We then use the PG binders to enhance performance and manage costs by:

- Confirming local batch plants can maintain minimum material temperatures during the anticipated night paving in the cooler seasonal months.
- Confirming historic performance to determine if lower grades have a proven record of success at FXE.
- Matching the right aggregates with the right binders, understanding that local aggregates tend to shed fine particles during handling, which reduces pavement performance, a situation we'll specifically look to mitigate by matching aggregates.
- Evaluate the cost, workability and durability of the potential PG binders under consideration for the project use. An example of the comparison is shown in the table below.

With the understanding of all of these parameters, the PG binder selection will be tailored specifically to Runway 9-27 heavy use areas.

**PG BINDER COMPARISON**

| CRITERIA | PG 67-22 | PG 70-22 | PG 76-22 | PG 82-22 |
|---|---|---|---|---|
| COSTS | $ | $$ | $$$ | $$$$ |
| WORKABILITY | Easy | Moderate | Moderate | Challenging |
| DURABILITY | Fair | Good | Better | Best |
| FAA COMPLIANT | No | No | Possible* | Yes |

**Possible ranking based on past performance at FXE*

## PROVEN DELIVERY

HDR served as the prime designer for the Tuscon International Airport (TUS) New Runway 12R-30L and Associated Taxiways. Like FXE, TUS has a hot climate and the airport operations include locations of slow-moving traffic and jet aircraft traffic. Looking to right-fit the pavement materials to the airport, we worked with the airport to evaluate the past performance of previously used binders, along with the construction community to analyze the availability of binder grades in the region. What we found was that the higher-grade binder was not produced in the region and would have to be imported over hundreds of miles to the project site, and the local contractors had no experience working with it. Knowing that the airport has historically used PG 76-22 successfully, we evaluated the Pavement Management Plan and existing pavement condition in various locations and found no binder-related stresses. With the good historical performance of PG 76-22 and the expected cost increase and constructability challenges associated with PG 82-22, the recommendation of PG 76-22 was accepted by the FAA.

# Key Element - Pavements

## CHALLENGE: Pavement Base Repair

Provide a method for performing localized deep repairs of structural distresses, while maintaining an aggressive schedule.

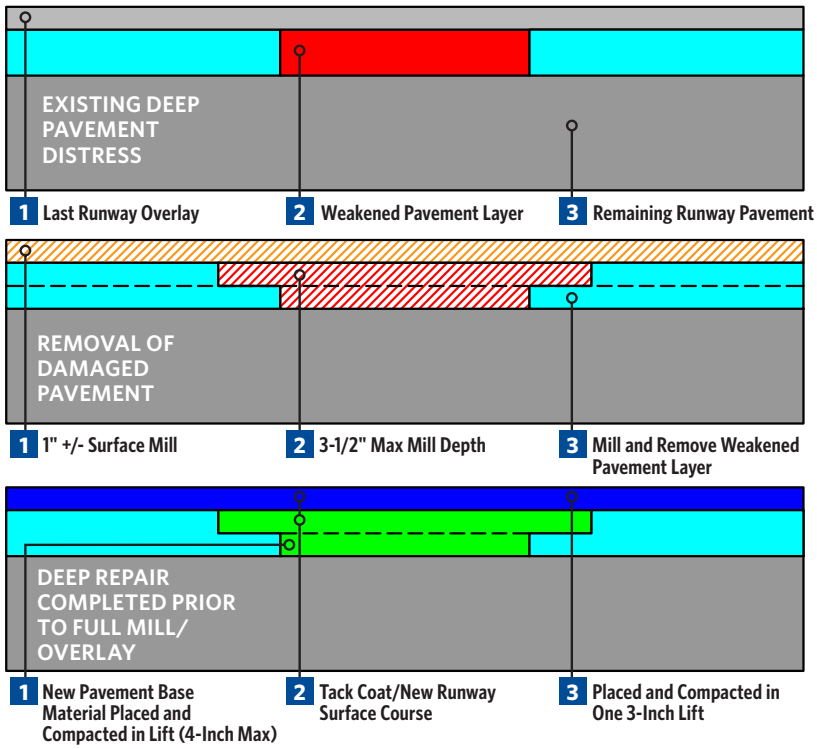
When repairing runways that have histories of multiple overlays, deterioration of intermediate pavement layers often occur, particularly those that utilized the FAA P-403 specified materials as the runway pavement base course. Heavy-use runways like 9-27 commonly develop weakness in the pavement base course. During our voluntary pavement inspection in 2020, we did observe some areas which may require an isolated base course repair, although they are not widespread. Not accounting for these weaknesses in the design phase can have major impacts to the project's schedule and budget, as well as the long-term performance of the pavement.

## SOLUTIONS

Key to the longevity of the repair will be to provide sufficient detail for the contractor to mill down to the deteriorated pavement layer and replace it in a manner consistent with the surrounding pavement section. The instructions would be conveyed to the contractor via the plan details and specifications as described below. As you can see, this will be completed by stepping back asphalt and offsetting longitudinal joints from lower layers, which provides strength and continuity of the pavement support system. We will provide sufficient detail for the contractor to mill down to the deteriorated pavement layer and replace it in a manner consistent with the surrounding pavement section. The patch will offset longitudinal joints from lower layers, which provides strength and continuity of the pavement support system. These repairs must be performed in nightly shutdowns prior to the full airport closure for mill and overlay.

Our team has already inspected your runway pavements and identified where localized deep repairs are needed.

### ASPHALT PAVEMENT BASE LAYER REPAIR PROCEDURE




GOAL 1
DURABLE, RELIABLE RUNWAY

## PROVEN DELIVERY

Joe Grubbs, Tom Bair, and Chris Decker, all proposed on this project, used the same isolated base repair method for the CMH Runway 10L-28R Rehabilitation. The targeted repairs kept the project budget within original funding estimates. Without any guaranteed grant funding, the repairs were included as a bid alternate and ultimately funded, resulting in a longer-lasting pavement.

## BENEFIT TO FXE

- Isolated repairs reduce runway closure duration and cost compared to full-lane reconstruction.
- Stepped offsets eliminate weak vertical joints, enhancing long-term pavement performance.

# Key Element - Pavements

## CHALLENGE: High-Severity Crack Repair Strategy

Much of the existing cracking on the runway surface appears to be the deterioration of pavement joints; these cracks typically extend deeper than the anticipated 2-inch mill depth for the project.

Much of the existing cracking on the runway surface appears to be the deterioration of pavement joints (where one paving lane abuts adjacent paving lanes). The challenge with these cracks is they typically extend deeper than the anticipated 2-inch mill depth prescribed for this project. If left untreated, these cracks will eventually reflect back through to the new runway surface and cause additional maintenance efforts and costs to maintain the runway surface. However, this challenge can be easily mitigated without significantly impacting the needed fast-track construction schedule.

## BENEFIT TO FXE

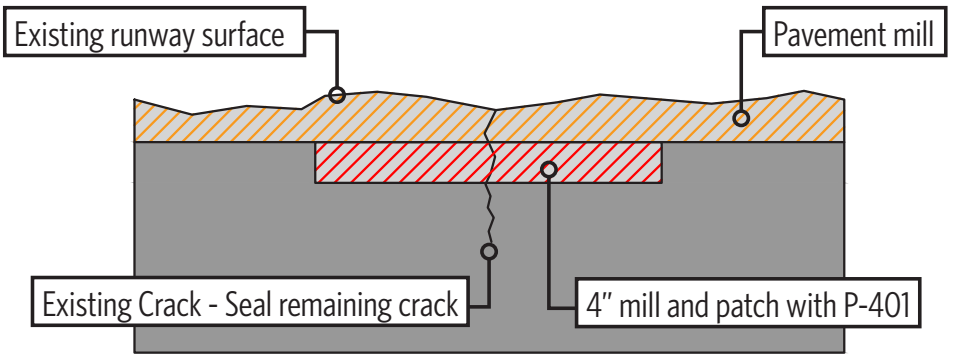
- Work can be performed nightly prior to starting the full closure period, reducing impacts to operations, which was how it was done in 2018.
- Crack reflection through the new runway surface is significantly reduced or mitigated, enhancing performance and pavement life while reducing future maintenance costs.

## SOLUTIONS

During the site investigation phase, we will log all surface cracks via GPS, then overlay them with core sample measurements and NDT data. We can also work with FXE to provide drone capture services. This allows you to assess condition pavement and provide contractors complete visual record of pavement surface. From there, we determine crack depths and apply localized repair procedures based on depth. To minimize impacts to the project schedule, specifically the runway closure duration, we can apply methods like trench mills and deep routing can be performed during off-peak times (as an example: nightly and restoration each morning to reopen the runway) prior to the extended runway closure.

### EXISTING CRACK REPAIR PROCEDURE

GOAL 1
DURABLE, RELIABLE RUNWAY




## PROVEN DELIVERY

For FXE's 2017 Runway 9-27 Maintenance Rehabilitation project, we specified a nightly airport closure to conduct the localized crack repair and surface preparation. Each night, the contractor milled the cracks 5-feet wide and 2 inches deep. These locations were then patched and the runway re-opened each morning. By doing these repairs in advance of the seal coat extended closure, the main phase closure was reduced to just 72 hours.

HDR designed the previous isolated deep pavement repairs of Runway 9-27 at FXE, completed in a 72-hour closure in 2017.

# Key Element - Pavements

## CHALLENGE: Improving Pavement Groove Performance

Runway 9-27's grooves have deteriorated due to tire friction, rubber removal, and high temperatures. Poor pavement grooves raise the risk of hydroplaning and also trap tire rubber, making removal difficult.

## SOLUTIONS

Runway 9-27 is required by the FAA to be grooved to improve the runway surface friction. It also serves as a means to evacuate water from the runway surface and prevent hydroplaning. HDR will evaluate the option of trapezoidal grooves, which have been shown to be more resilient while providing equivalent friction as the standard rectangular grooves. Trapezoidal pavement grooves stand up to heavy loads and high temperatures, and promote easier rubber removal.


Trapezoidal Pavement Groove

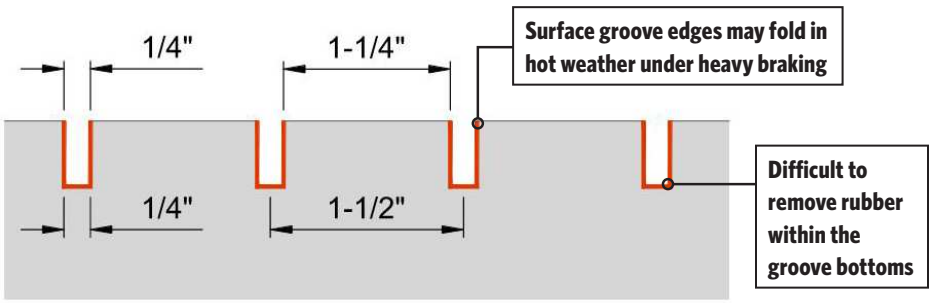
## PROVEN DELIVERY

Our team obtained approval for trapezoidal grooves at Dallas-Fort Worth International Airport (DFW) for Runway 18R-36L. The standard grooves in the critical aircraft touchdown zones "closed up," leading to the loss of surface frictional requirements, which caused problems for DFW Operations personnel. The trapezoidal grooves provided a more durable, long-term, all-weather solution for DFW with respect to maintaining the FAA-required runway surface frictional characteristics.

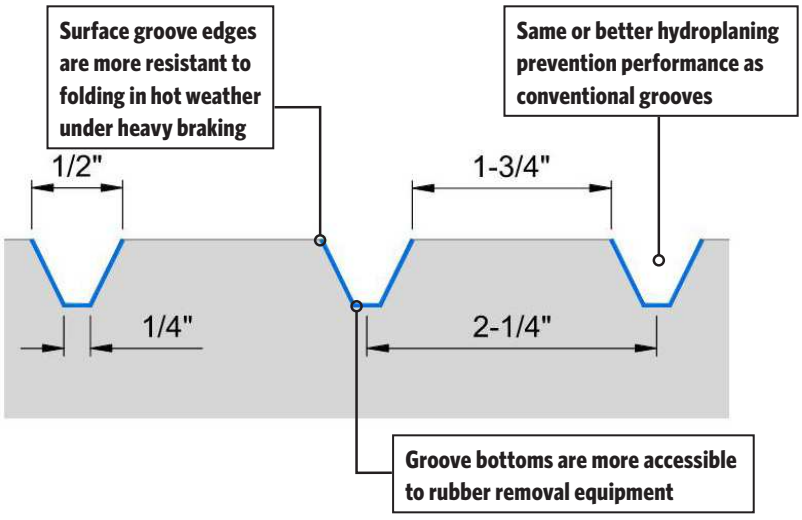

Deteriorated Standard Pavement Grooves

GOAL 1
DURABLE, RELIABLE RUNWAY

### STANDARD RECTANGULAR GROOVES




### TRADITIONAL TRAPEZOIDAL PAVEMENT GROOVES




## BENEFIT TO FXE

- More resistant to groove closing.
- Less tire wear.
- Faster drainage of water from runway.

## Key Element - Pavements

### CHALLENGE: Heavier Aircraft are Coming to FXE

FXE recently reached an agreement with the City of Tamarac to lift the previously established 75,000 lb weight limit for aircraft. Recently, a Boeing Business Jet (BBJ) weighing up to 150,000 lbs took up residence at FXE and flies 100+ operations per year. The runway rehabilitation must consider a future fleet mix substantially heavier than what was projected in the last master plan update.

### SOLUTION

From our recent experience reaching out to your tenants soliciting support for the 1,000-ft extension of Runway 9-27, we have established a database of future aircraft and their number of operations. We'll use this data, paired with pavement cores, soil borings, nondestructive testing such as Heavy Weight Deflectometer (HWD) to assess the runway's current strength and design an overlay that will support the new generation of jet travel at FXE.

GOAL 1
DURABLE, RELIABLE RUNWAY

### CHALLENGE: Blast-Pad Strengthening for Future Runway Expansion

In the upcoming Runway 9 Extension at FXE, the current runway 9 blast pad will need to be demolished and reconstructed to full strength, which will require closure of the runway. If the blast pad can be strengthened in this project, it will reduce the required runway 9 closure during the extension construction.

### SOLUTION

During the program validation phase, we will analyze the existing typical section of the Runway 9 blast pad and provide an option to FXE for the cost and schedule impact to improve the blast pad pavement to prepare it for the future Runway 9 extension. This will reduce the future Runway 9-27 Extension closure duration, because the runway can use a shorter displaced threshold to maintain Runway 9-27 operations while the extension is being reconstructed.

### CHALLENGE: Embedded Tensar Geogrid

Existing Geogrid fabric installed during the 2004 rehabilitation may foul the milling machines and damage the existing pavement.

### SOLUTIONS

Sawcut and patch areas requiring deep repairs in nightly closures prior to the full mill and overlay. This allows the contractor to run full-length shallow milling and paving runs during the full airport closure without the risk of fouling.

GOAL 3
EXECUTE WITHIN SCHEDULE & BUDGET

Previously installed geogrid mats must be isolated prior to the mill and overlay to avoid fouling the milling machine.

### CHALLENGE: Runway Shoulder Rehabilitation

Runway 9-27 shoulders were not considered in the FDOT pavement management inspection and are aging to the point where FOD from them is becoming a concern.

### SOLUTION

In the program validation phase, we will conduct a pavement inspection of the shoulders, calculate the Pavement Classification Index (PCI), and recommend a shoulder pavement maintenance or rehabilitation strategy. The first priority is to save the existing shoulders to reduce the airport closure duration. We'll consider slurry seals and microsurfacing that can effectively 'glue' the existing shoulder pavement and reduce the risk of FOD.

# Key Elements - Geometry

## CHALLENGE: Upgrading to Current FAA Taxiway Geometry Standards

With the Runway 9-27 Rehabilitation, connecting taxiways inside the Runway Safety Area should also be rehabilitated if necessary. This will trigger time-consuming builds of new full-depth pavement to upgrade the taxiways to current geometric standards.

## SOLUTIONS

From our analysis of FXE's Pavement Management Report, there are some taxiways which can avoid geometry upgrades under this project. We will work with the FAA to obtain approval. In the figure below, we have determined the necessary work for each taxiway connector to the runway.

- **Green:** No work required.
- **Yellow:** Some maintenance required. No geometry updates.
- **Red:** Major rehabilitation. Has a PCI below 65 and will need geometry updates.
- **Blue:** Taxiway Connectors which can be omitted due to future demolition or relocation.

## PROVEN DELIVERY

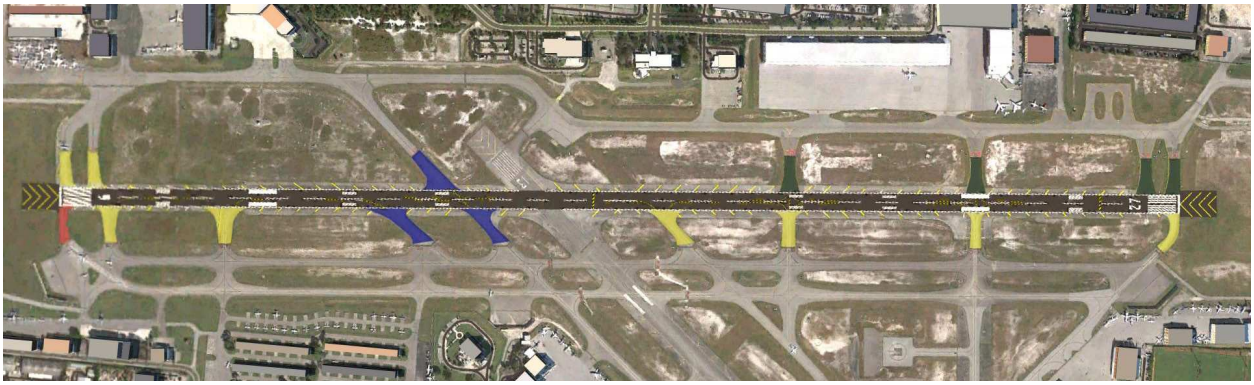
In our LNA Runway 4-22 Rehabilitation project, we obtained FAA approval to avoid upgrading non-compliant taxiway profiles in the intersection of TWY B and Runway 4-22. We demonstrated the cost impacts to the project if the profile would need to be corrected and noted there were no existing safety issues. The FAA agreed and removed the costly correction from the scope of work.

## BENEFIT TO FXE

Condense the overall construction duration of the project by minimizing the number of taxiways that require a geometry upgrade.

GOAL 2
MINIMIZE IMPACTS TO OPERATIONS

GOAL 3
EXECUTE WITHIN SCHEDULE & BUDGET



Use this QR code to link to a video of Cody and Raheel on site at Taxiway B, providing a justification for why it should not be required to have geometric updates under this project.

# Key Elements - Geometry

## CHALLENGE: Correcting the Profile of First Quarter of Runway 27

The future extension of Runway 9-27 will require the first quarter of both runway ends to be flat. For the 1,000-ft extension, an additional 250-ft of Runway 27's first quarter will need to be flat.

## SOLUTION

We will use LiDAR to analyze the longitudinal profile of Runway 27 starting at the threshold. If corrections are needed, we will prepare a cost and schedule to fix the profile in this rehabilitation project. FXE can then elect to make the correction now, or address in the future runway extension project.


## BENEFIT TO FXE

The future 1,000-ft extension of Runway 9 will require 250 additional feet of flat runway profile on the east end. Correcting the profile in this project will allow FXE to avoid touching the existing runway in the future.

# Key Element - Construction Safety & Phasing

**CHALLENGE:** Developing an Optimal Schedule for the Runway Rehabilitation

Establish an aggressive but achievable construction schedule for the critical main rehabilitation phase.

## SOLUTIONS

Runway 9-27 is the primary runway which serves heavy jet traffic and your high-volume FBOs. The intersection with Runway 13-31 will require closure, leaving the airport closed to operations for a period. Through our years of managing airside construction projects at FXE and South Florida at large, we have developed trusted local production rates that contractors have proven to achieve. Throughout design, we will coordinate with multiple contractors to further validate our critical construction schedules to be confident that our proposed construction schedule is achievable. As the construction administrator and inspector, we are running your weekly construction meetings and actively manage any issues that may arise during construction. This allows us to actively work with the Contractor on issues that arise and provide a prompt resolution to issues that arise during construction. During the weekly construction meetings, we will discuss the detailed short-term schedule of upcoming construction activities and work with the Contractor and informing them of any nuances in the upcoming short-term construction that may have been overlooked.

## PRE-WORK AND DEFERRED WORK OPTIONS

Prior to the full airport closure, there are opportunities to complete some work on a nightly basis, re-opening the runway each morning:

- Crack sealing
- Structural repairs using deep milling and patching
- Electrical upgrades
- Profile and cross slope corrections
- Shoulder sealing
- Taxiway sealing

## TAXIWAY GEOMETRY CORRECTIONS

While we actively work to minimize the number of taxiways requiring geometry updates under this project, we know that at a minimum, Taxiway E will require major rehabilitation. This will require pavement demolition, excavation, grading, base course, paving, electrical, and lighting. This is too much work to accomplish concurrent with the 72-hour closure of the airport, so it must be completed in a follow-up phase. We will accomplish this work in nightly closures after the runway is completed. To minimize the duration, we will:

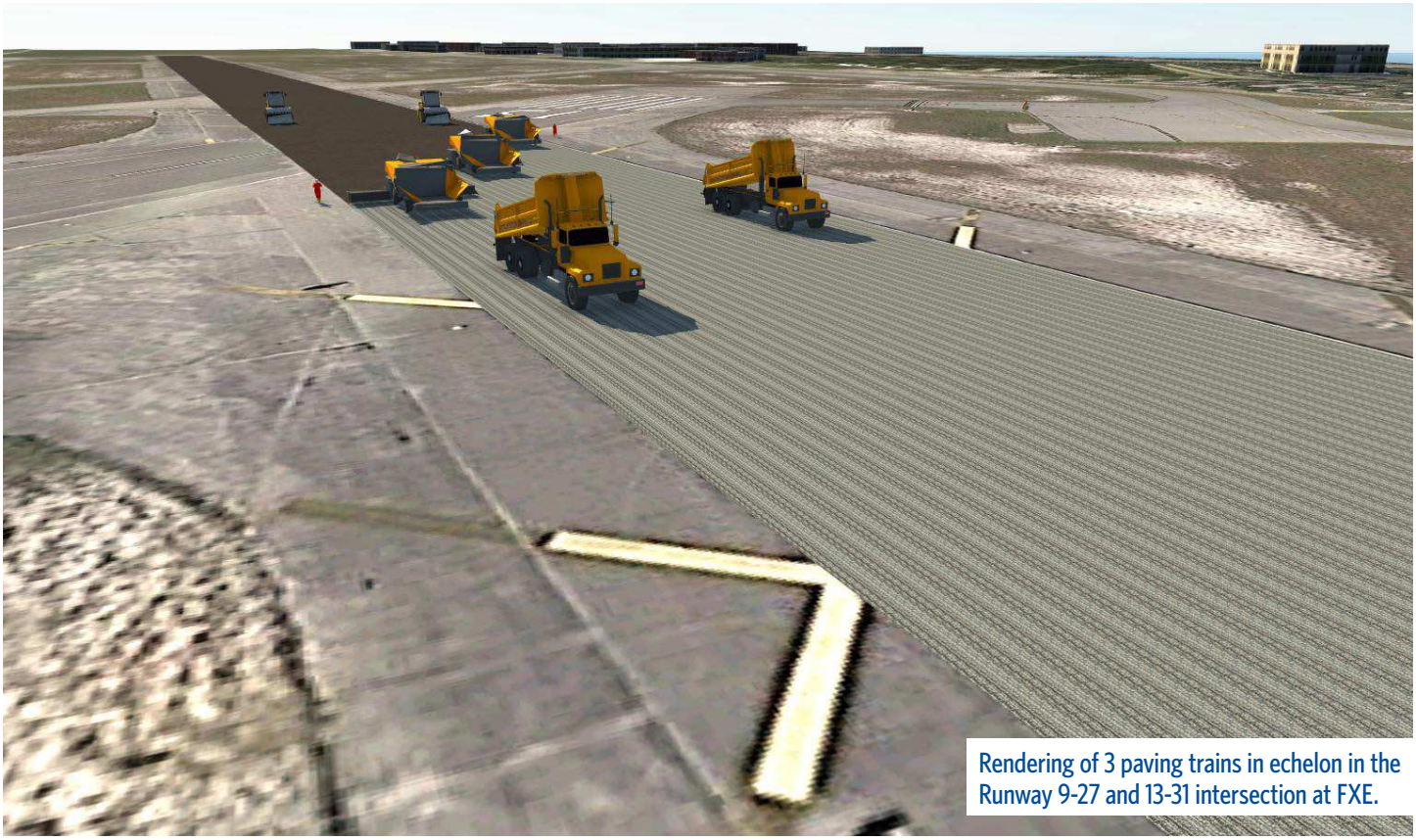
- Recycle in-place the existing base course
- Use 'black base' asphalt in lieu of lime rock for quicker compaction

## PROVEN DELIVERY

We have current production rates from FXE Taxiway Intersection Improvements, LEX RW 4-22, and the TUS runway relocation program. In addition, we will have more production rates from the upcoming construction projects at FXE such as the midfield run-up expansion, Runway 31 Bypass Taxiway connect, and Taxiway G Rehabilitation to strengthen our construction schedule. Our team gives you national perspective, with confirmation that local construction providers can deliver. Our strategic advisor, Joe Grubbs, has rehabilitated runways with a variety of phasing and schedule combinations and has also co-authored industry publications.

- *"Building Flexibility Into Airfield Construction Phasing Plans," Co-authored with Gary K. Fuselier, July 2004; ASCE 28th International Air Transport Conference.*
- *"Runway 12-30 Reconstruction – Lessons Learned on Managing Changes on a Fast-Track Project," Co-authored with Gary K. Fuselier, March 2005; 28th Annual FAA Eastern Region Airport Conference.*
- *"Construction Safety and Phasing Plan (CSPP) Preparation; A Case Study of the CSPP Preparation for the Final Phase of the Runway 10R/28L Replacement Program at the Port Columbus International Airport," Co-presented with Tim Mentel and Kevin Conti, March 2013; 2013 Airports Conference.*

## Key Element - Construction Safety & Phasing



Rendering of 3 paving trains in echelon in the Runway 9-27 and 13-31 intersection at FXE.

### BENEFIT TO FXE

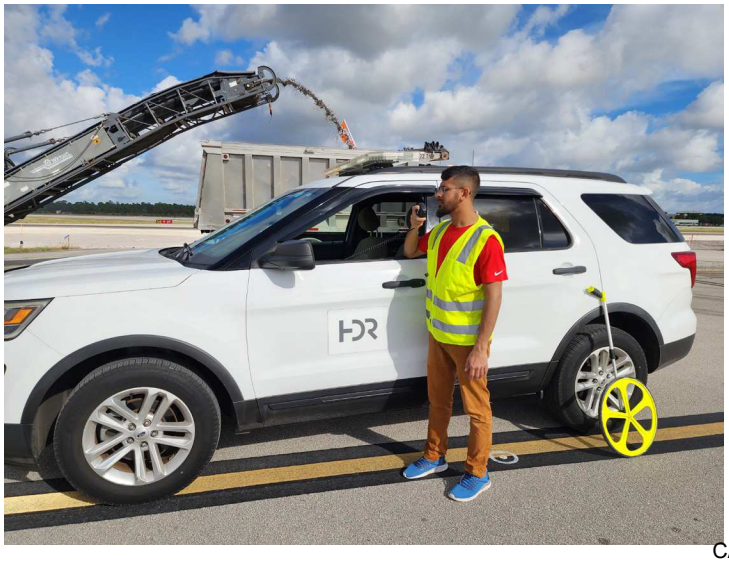
Our construction safety and phasing approach recognizes the critical role your FBOs and mission critical operators serve and the impact this project has on them. We are confident that we will deliver this project within an airport closure of just for this rehabilitation project, 72 hours, while maintaining quality and safety.

GOAL 2
MINIMIZE IMPACTS TO OPERATIONS

### EXPECTED CLOSURE DURATION

The 2004 rehabilitation of Runway 9-27 took 9 days, with 3 days of closure for the runway intersection work. We compared anticipated quantities of critical path activities and anticipate that the upcoming rehabilitation of the mainline of Runway 9-27 and the mainline of Runway 13-31 up to the Runway Safety Area of Runway 9-27 **can be accomplished in 72 hours**.

GOAL 3
EXECUTE WITHIN SCHEDULE & BUDGET



HDR will provide a team of specifically qualified professionals in airport paving for the critical 72 hour closure period.

# Key Element - Construction Safety & Phasing

## CHALLENGE: Construction Delay Mitigation

While we have attempted to plan every part of the project, the unforeseenwill happen during construction. How we prepare and handle the surprises will determine if the project is a success.

### SOLUTION

The most unpredictable factor during construction is the weather. Our meteorologists use their access to proprietary data to make micro-forecasts for the project site. This allows you to alert your tenants sooner if a weather delay is incoming, and gives them a chance to adjust their operations. For any event affecting the schedule, our strategic communications team will have a stakeholder outreach system to push information automatically to those who need to know, keeping your staff free to focus on running the airport.


## CHALLENGE: Maintaining Airfield Safety While Hosting Hundreds of Construction Workers in the AOA

Our constructability advisor, Marc Gambrill, has experience in rehabilitating Runway 10L-28R at FLL and the challenges of having hundreds of construction workers on the airfield during critical construction times. The biggest challenge of a large work closure is maintaining control of AOA access and contraband such as weapons. This is not a skill of contractors and FXE does not have the Operations staff to handle the volume of workers entering the airfield.

### SOLUTION

We propose to have the contractor hire security personnel from the Broward Sheriff's Office (BSO) to assist with searching, access, and security during peak construction activities like the critical 72-hour runway closure.

## CHALLENGE: Stakeholder Outreach

### SOLUTION

HDR's Strategic Communications team, led by Paul O'Rourke, who was the strategic communications lead at Pittsburgh International Airport (PIT), will assist in stakeholder outreach to notify the tenants of the critical runway closure period. HDR's strategic communications' community analytics team will work with customized story maps to plan, execute, measure, and evaluate tenant involvement strategies and tactics to notify your stakeholders. This frees the FXE leadership to focus on running the airport.


## CHALLENGE: Milling, Paving, and Pavement Markings within a 72-Hour Airport Closure

### SOLUTION

We have begun conducting interviews with local contractors who have previously bid on projects at FXE in the past and inquired how they would accomplish a project like yours. Based on the information gathered from these interviews, it is feasible to complete the rehabilitation in a 72-hour airport closure. To meet this schedule, a few conditions must be met:

**Condition 1.** All material staging and stockpiling must be on-site. No time can be wasted sending trucks off site to dump millings.

**Condition 2.** All milling and paving must be self-performed by the prime contractor. This will present a challenge in meeting DBE goals, so other projects at the airport will have to shoulder a greater DBE participation goal to compensate.


**Condition 3.** The critical mill and overlay period must have no profile or grade corrections. This means any corrective work must be scheduled as a separate phase of the work.

## CHALLENGE: Trucking Shortages, Trucking Hours OSHA requirements, and Increase in Hauling Rates

### SOLUTION

In our interviews with local contractors, they mentioned that trucking and truck haul rates have been a growing issue since 2020. To alleviate the trucking concerns and help control construction costs, we will specify a stockpile area on the airfield for the Contractor to dump their millings. This will allow for a continuous milling operations keeping the trucks in a continuous cycle until milling is complete. This methodology will avoid the milling machine staying idle while they are waiting for the trucks to return from an off-site dumping site.


Another challenge that we came across with the LEX Runway 4-22 rehabilitation project was the OSHA mandated trucking driving hours. Contractors were required to take breaks during the 72-hour construction window which required more truckers to be strategically scheduled during the 72-hour window. In our detailed 72-hour closure forecast, we will work with contractors on developing a detailed hourly schedule showing the different construction crews that will be required to be compliant with the OSHA requirements.

# Key Elements - Regulatory Compliance

To finance the project, FXE anticipates applying for a 90/5/5 FAA AIP Grant. For large runway projects, the FAA requires efforts in addition to those required by smaller airfield projects. We've considered all of the FAA's required efforts and developed a plan to meet them, keeping your funding secure and audit-ready.

## **CHALLENGE:** Environmental Determination

Per FAA Order 1050.1F, this project will require an environmental determination made by an FAA Official. The FAA AIP final grant application for the construction phase will also require a NEPA determination. If NEPA is not considered early in design, the construction grant could be delayed an entire year.

## SOLUTION

GOAL 3
EXECUTE WITHIN SCHEDULE & BUDGET

Since the rehabilitation will not require a runway closure of 6-months or more, we believe the FAA will likely agree to a Categorical Exclusion (CatEx). Our NEPA lead, Esther Chitsinde, is the former Environmental Planner for Dallas-Fort Worth International Airport, and will support you with the preparation of the documented CatEx (DCE) for FAA review and approval. The DCE is typically submitted by the airport sponsor to the FAA for their review and approval. Beginning at 30% design, we will coordinate with the FAA's Orlando ADO to seek a determination that this project be exempt from detailed noise and air quality modeling.

## **CHALLENGE:** Concrete Versus Asphalt Paving

Projects over $10 million in construction costs require a benefit-cost analysis (BCA) of concrete versus asphalt paving. From our work establishing the 0% construction budget, we anticipate a BCA will be required by the FAA for the AIP grant application.

## SOLUTION

While concrete tends to maintain a less volatile price over time, it would also require a long closure of FXE for construction, and therefore have a major negative financial impact. From our work on the most recent master plan update, we will capture that impact and make the case for the selection of asphalt for your runway.

## **CHALLENGE:** Construction Management Program (CMP)

The FAA now requires a construction management program (CMP) for any asphalt paving project over $500,000 in value. Given the limited resources available to FXE's leadership team, the consultant needs to have expertise in this process to produce and execute the program.

## SOLUTION

We have developed CMPs for clients across the country, especially those that operate high-end general aviation facilities with a lean staff. We'll tailor the CMP to assign major construction oversight and documentation, such as progress reporting, to the consultant construction team, allowing your staff to focus on managing operations. As a former Chief Development Officer of an airport, Marc Gambrill will develop your CMP from the owner's perspective. He'll assign most of the workload to the consultant team, while keeping your leadership engaged for key decisions along the way.

## **CHALLENGE:** Federal Funding Applications

Federal funding applications now require sponsors to address diversity, equity, and inclusion (DEI) in their grant applications. As a potentially grant-funded project, we must consider and explain how it supports these initiatives.

## SOLUTION

We'll partner with local schools to introduce students to a career in aviation, in the spirit of FXE's Flying Classroom collaboration.

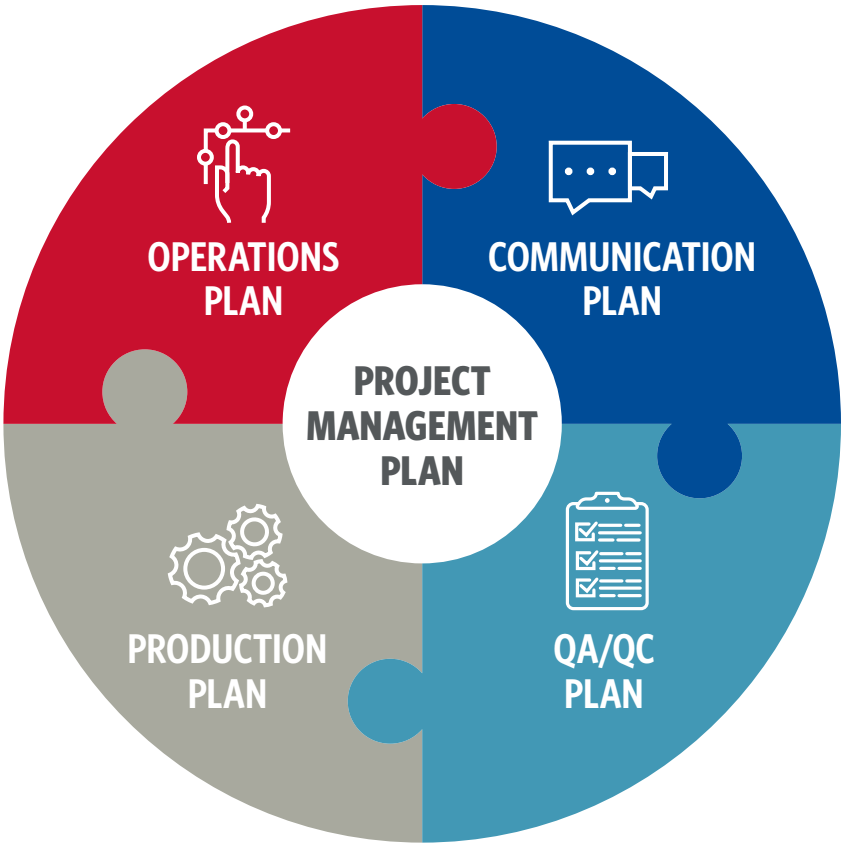
We reached out to Florida Atlantic University's (FAU) civil engineering department to gauge their interest in applying it as a senior design capstone for their undergraduate program. They have tentatively accepted, and we anticipate a close collaboration, giving FXE the chance to work with top-tier college students and introduce them to careers in aviation. We would also like to apply the same program to a public school in the Uptown area, potentially with the Flying Classroom, another partner of FXE.

## Methodology

Our project-specific Project Management Plan (PMP) is tailored to meet each project's schedule and budget. It includes Operations, Communications, Production, and Quality Management Plans that address the top challenges and focus on:

- An aggressive yet realistic schedule detailing the overall work approach.
- A rigorous process for tracking progress of contract and deliverable documents.
- An organizational chart with defined positions and an effective staffing plan.
- A tailor-made quality assurance/quality control (QA/QC) plan.

Regardless of any change that needs to be made, we will provide multiple options for resolution. Our PMP will drive coordination and collaboration of our team as we prepare, integrate, and coordinate project design and deliverables.




For this specific project, we will tailor the PMP to address key issues such as:

- Define depth of resources to meet any project schedule or change in project staffing.
- Internal and external communications plan.
- Safety plans that address specific airfield requirements.
- FAA environmental permitting plan that aligns with the overall project schedule.

### Operations Plan

The Operations Plan integrates tracking and monitoring of the approved scope, budget, and schedule, and defines requirements for invoicing, document control, and subconsultant management. Implementation of our plan, with the right staff and tools, will provide FXE with timely and accurate reporting of project progress. We will develop regular briefings to solicit input and verify design approaches so that you understand airfield impacts for every step of the project.

In every aspect of the project, the operation of FXE will be at the forefront of consideration. From site investigation, to design, and through construction, we will develop regular briefings for your Operations personnel to solicit input, verify approaches, and provide notification of upcoming airfield impacts. An example is the Activity Notification Form that we use to coordinate and communicate upcoming field work. These briefings are clear and concise in a structured format to communicate where personnel will be on the field, what work will be performed, what hours the work will occur, and contact information for inquiries. The initial draft is used for coordinating escorts, determining work hours and issuing NOTAMs. Once finalized, the form can be distributed for quick reference by Operations staff to FAA and impacted stakeholders.

### Production Plan

The Production Plan identifies the staffing plan, CADD standards, QC review assignments, and other key project concerns and risks to align the delivery with the schedule. Our project manager, design manager, QC manager, and designated task leads will meet on a weekly basis to verify that the work is coordinated.

This plan also establishes specific tools that the design team will utilize to provide for seamless interdisciplinary coordination. For example, we use ProjectWise for real-time updating of base and design files so all disciplines are working with latest information.

## Communication Plan

Communication and regular interface with FXE is critical to a successful project of this scale. Cody Parham is our primary point of contact and will work regularly with your project manager. Cody will communicate routinely through the hierarchical structure of the team with the deputy project manager, designated leads, and subconsultant key staff. FXE will have the information and metrics needed for complete understanding of the project status and reporting to FXE stakeholders.

## QA/QC Plan

Our quality control process begins with the issuance of a Quality Management Plan (QMP), which has been tailored to meet the specific needs of each task. The QMP combines our internal quality control (QC) systems with an auditable quality assurance (QA) program to identify and correct issues.

As we transition to project execution, our team follows the **three processes of our QMP: Quality Assurance, QC Checking, and QC Reviews.**

### QUALITY ASSURANCE REVIEW

The quality assurance review is process and prevention oriented. It is performed by the Quality Assurance Manager at the start and is continuous throughout the project. Tim Fish will verify that we have a clear understanding of project expectations and goals. This process will verify that we have performed a detailed quality control review and we have delivered a product through client satisfaction, regulatory compliance, and stakeholder satisfaction.

This process begins by Tim leading a Project Approach and Resource Review (PARR). FXE will directly benefit from this review as it connects the project team to HDR's experts, who will provide best practices, alternatives and technologies, and example work products, improving productivity from the very start of the project. We also incorporate our subconsultants into the QMP process. Each subconsultant is responsible for providing quality review of their deliverables; however, as the prime consultant, we perform a QA review of all subconsultant work.

### BENEFIT TO FXE

With our QMP, FXE can have confidence that our team will have completed all necessary QC reviews before you receive our team's documents; QC reviews do not start with you.

### QUALITY CHECKING REVIEW

Quality checking is an internal team process that is designed to identify and correct any and all deficiencies. This provides a consistent process for verifying the accuracy and completeness of information/data, and for verifying and documenting corrections and/or changes that have been made for calculations, drawings, and spreadsheets. This process occurs continually for the life of the project. To enhance this process, all CAD design work is performed in a ProjectWise environment shared by all disciplines, including our subconsultant partners. This approach allows the entire design team to see the other disciplines' design in real time. This has been proven to reduce conflicts between disciplines and improve schedule performance by identifying conflicts during the design and quality checking process instead of the quality control process for FXE. This means there are no late surprises and helps keep the project on schedule.

### QUALITY CONTROL REVIEW

Quality control reviews are conducted by senior staff members who are independent of the day-to-day team. These reviews of the combined project documents occur two weeks before each milestone deliverable, with the review during the first week and incorporation of the comments during the second. This process manages risk by verifying that project deliverables and supporting documentation are complete, understandable, consistent, and constructible, conform to applicable and reasonable standards relative to their intended purpose, and meet FXE and HDR's requirements.

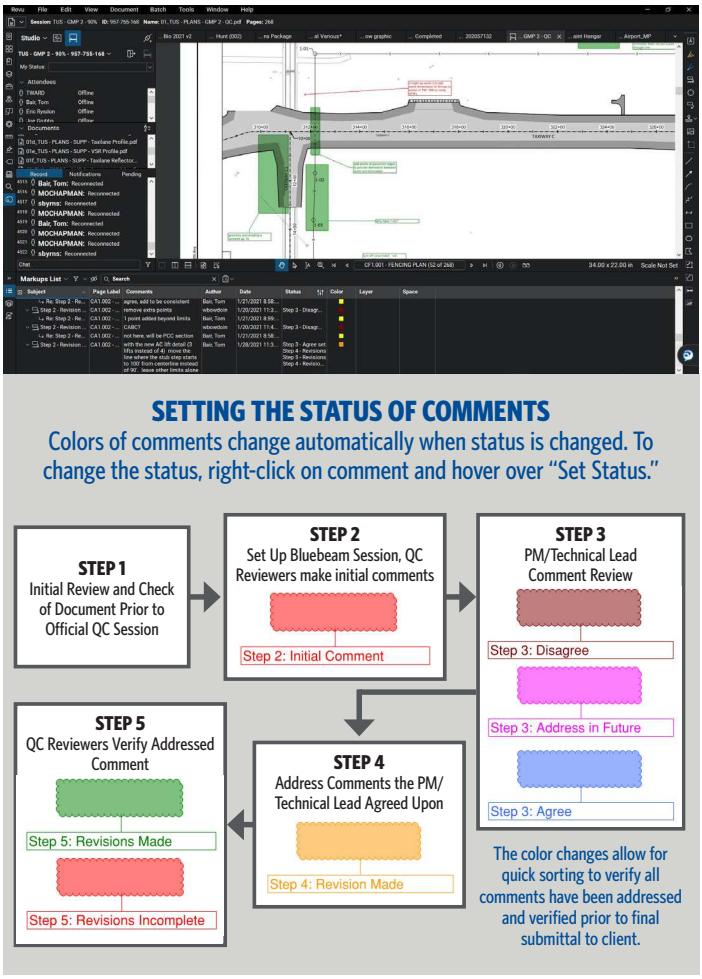
Annotated or highlighted originals of the milestone comments will be returned with the disposition of all comments. A copy of the marked-up QC file check set(s), as well as written verification of QC reviews and QA inspection reports, is submitted to the project manager. QC audits are performed, and these also include verification that subconsultants are adhering to the project's QC plans.

Our standard QA/QC plan includes use of standard checklists for reviews at each milestone, called the Intra-Design Review and Inter-Discipline Review. An intra-design review is performed by senior professionals in the same discipline, while the inter-discipline review promotes and documents the coordination between design discipline teams. The discipline leads or delegates will jointly review the documents for interferences, compatibility between design disciplines, completeness, environmental commitments, and utility or right-of-way issues, and will resolve conflicts and suggest improvements based on sound engineering practices.

The QC review also includes drafting and electronic drawing files to check that our team's drafting services and drawings are consistent with the City of Fort Lauderdale's CADD requirements, as applicable.

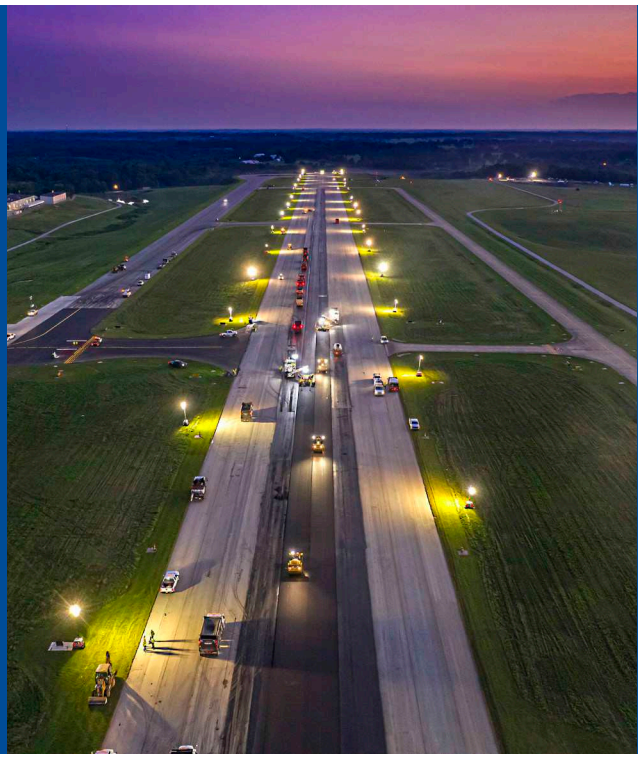
**Quality Control Reviews Using Bluebeam Revu Sessions.** As part of our standard QC review practice, we implement live review sessions using Bluebeam (see graphic to the right). These sessions are performed in real-time, with comments made and coordinated. At the close of the session, all notes are captured and provided to the project review team. Each session begins with a recap of the previous session to confirm coordination required to address issues was completed or in progress. This process provides FXE with verification that the QC review has not only been performed, but that the necessary corrections stemming from the review are coordinated, incorporated, and approved prior to document submission. We look forward to working with you and developing a similar approach.

**Quality Control Reviews Using AutoCAD Civil 3D.** AutoCAD Civil 3D is also used for clash detection in addition to being a design program for the three-dimensional civil engineering aspects of the project. Building our model allows for visualizing clashes between proposed and existing project features/elements so we can identify and eliminate conflicts prior to starting construction.




## PROVEN DELIVERY

We developed a project-specific Quality Management Plan for the Runway Rehabilitation Project at LEX. We trained our staff on its implementation, and managed the QC/QA process for all deliverables. The QC approach included a detailed checking process and a higher-level set of independent quality reviews. We used Bluebeam Revu Studio sessions to facilitate and document simultaneous quality reviews by multiple reviewers. This created a more efficient review cycle that was closed only when the final deliverables incorporated all review comments. We performed QA process audits to verify the completion of required quality reviews and documentation. The audits also verified the incorporation of external comments received from the client and stakeholders.



# Our Plan to Maintain Schedule

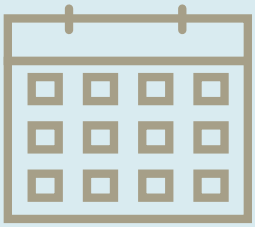
## **CHALLENGE:** Keeping the Design of this Project on Schedule

Our Project Management Plan requires a realistic schedule, accounting for milestone QC reviews, submittals, and FXE's review comments. We internally conduct monthly workload assessments to balance our staff to match project needs. Cody projects workload of this project each month and works with our national aviation team to bring in additional staff if needed to meet the scheduled deliverables. That is the benefit you get of hiring HDR who can flex 160 aviation professionals nationwide to meet the scheduled deliverable needs for this project. For this project, **we are committing to delivering bid documents by Spring 2024** to meet the airport closure window in August 2024 for the mill and overlay.

### PROOF: FXE RIM

Robust production plan allowed us to deliver the Runway Incursion Mitigation bid documents in 15 business days and helped FXE to be eligible for 100% CARES act funding.

## **CHALLENGE:** Developing an Accurate Construction Schedule



To allow for smooth and efficient progress during construction, our specifications require the Contractor to prepare a two week look ahead schedule. We use the two-week look ahead schedule to confirm the construction activity planned and point out any impediments to the construction that need special attention that may have been overlooked by the Contractor. For critical construction phases, we require the Contractor to hold a pre-phasing meeting to debrief the construction inspection team on the activities projected for the critical phase. If the phase requires an area of the airfield to be open at the end of the working day, we require the contractor to prepare a plan on how they will achieve this. This gives the construction inspection team and airport operations a level of comfort allowing the contractor to mobilize into a critical phase.

We also understand that your operations staff may be limited during critical construction periods, so we work with contractors to provide staff who can escort construction traffic and provide an inspector with airfield driving and tower communication experience to act as an extension of your staff.

## **CHALLENGE:** Keeping the Construction on Budget

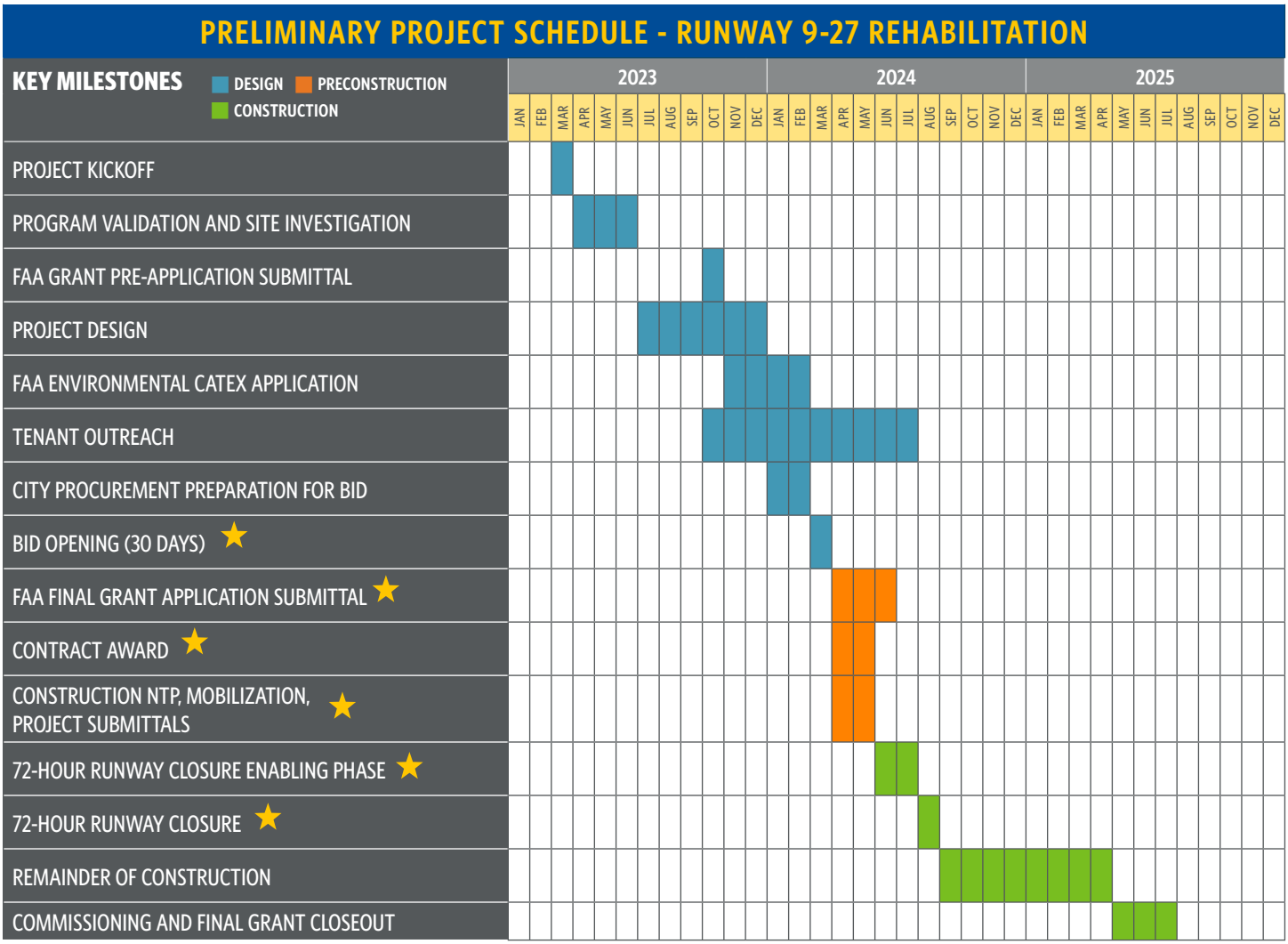
During the construction phase, our PM requires the field inspectors to work with the Contractor's field superintendent to reconcile quantities generated daily. Those quantities are presented in the daily report which are then used at the end of each month to generate pay applications. The benefit is that the Contractor and the construction inspection team agree on quantities generated each day by measuring them together. This prevents surprise billing and quantity overruns when the invoice is submitted. Discrepancies in quantities are identified immediately, and able to be mitigated before any additional work is performed.

### PROOF: FXE Taxiway Intersection Improvements

The Contractor has been able to submit executed pay applications to the City in a timely manner for City's processing. The Contractor has even stated that this is one of the first project's they have done at this Airport that they have been able to submit an executed pay application to the City for processing.

## Construction Schedule

Through our unique knowledge of the challenges associated with this project, we have prepared a preliminary design schedule showing key milestones.



## 200-day Countdown

At FXE, there is no longer a summer slow down in traffic, just a summer pause. Airport closure for the mill and overlay must happen in August 2024. To prepare for this window, we've highlighted key milestones for the project to achieve.

### Bid Opening

Project must go out for bid in March 2024. With the 30-day bid opening, we will need bids in hand by April 2024.

### FAA Final Grant Application Submittal

With bids in hand April 2024, we will then submit the final grant application to the FAA in April 2024. Typical FAA grant disbursement takes 3 months which will approximately result in the FAA grant in June 2024.

### Contract Award

City needs to obtain funding to execute the Contract by May 2024 to allow the Contractor ample time to complete the pre-construction activities.

### Construction NTP, Mobilization, and Project Submittals

With NTP in April 2024, the Contractor will spend the next 60 days making project submittals, mobilizing construction equipment, and planning their construction for this project. During this phase, we will hold meetings with the selected Contractor on the detailed project schedule, so the Contractor is ready to hit ground on the first day of airfield construction.

### 72-hour Runway Closure Enabling Phase

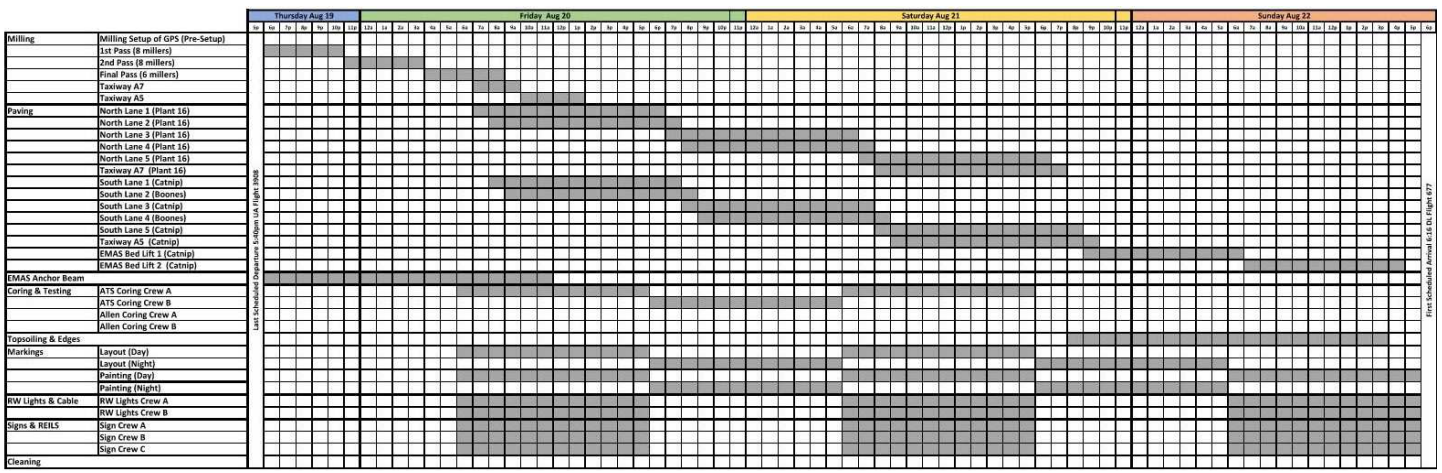
Contractor will start construction activities in June 2024, giving the Contractor 60-80 days to prepare for the 72-hour closure. This will involve construction activities on the runway such as crack sealing and isolated pavement repairs.

### 72-hour Closure

The successful completion of the previously mentioned tasks will allow us to schedule the 72-hour closure for August 2024. Prior to this closure, the contractor will have submitted all necessary documents and we will have held construction phasing workshops. We will also collaborate with the contractor to create a detailed, hour-by-hour construction schedule for the 72-hour period, which will enable us to track progress and verify that the contractor is meeting their deadlines. For the LEX Runway 4-22 Rehabilitation, we implemented a similar schedule, as shown in the table below, to monitor the contractor's progress during the critical closure period. By following these steps, we can confidently execute the closure and successfully deliver the project.

One of the keys to the successful LEX closure was the amount of experienced personnel we brought to the airport for that weekend to proactively have the subject matter experts personally involved to cover any contingencies. There was no need to be on-call since we were on-site.

**EXAMPLE DETAILED 72-HOUR CONSTRUCTION ACTIVITY SCHEDULE FOR THE AIRPORT CLOSURE PHASE**



## Our Plan to Maintain Budget

In 2020, HDR developed a 0% opinion of probable construction cost (OPC) of $10.5 million as an unsolicited courtesy to FXE for capital improvement planning. Our current analysis shows this budget should be sufficient for the main mill, overlay, and marking work. Value-added scope, like shoulder and taxiway rehabilitation, should be bid as add-alternates to allow FXE flexibility to decide if they want to allocate additional funding for these items.

At HDR, accurate and reliable construction schedules are developed by experienced construction professionals with direct experience on the project, backed by real, proven data from current and local construction projects. Our schedules are based on achievable production rates and lead times for material procurement, and we regularly coordinate with local contractors to confirm critical construction activities and production rates. This approach has resulted in on-budget delivery of similar projects across the US.

We build in contingencies at various stages of the design process to account for any potential challenges or delays. At the 30% design stage, for example, we have a higher contingency in place, which decreases as we progress through the design process and validate production rates based on other similar aviation construction projects in South Florida. In particular at FXE, we will take the specific site conditions when developing the construction schedule. We know that we have excellent access to I-95 and Florida's turnpike, which is how the local asphalt contractors will access the site. This helps us be confident that we will be able to get asphalt in a timely manner and we can create a tighter schedule with this consideration.

We build in contingencies at various stages of the design process to account for material price variability, especially asphalt, labor competitiveness with other large projects in the area, and balancing contractor risk when setting liquidated damages. At the 30% design stage, for example, we have a higher contingency in place, which decreases as we progress through the design process and validate production rates based on other similar aviation construction projects in South Florida. In particular at FXE, we will take the specific site conditions when developing the construction schedule. We know that FXE has excellent access to I-95 and Florida's Turnpike, which is how the local asphalt contractors will access the site. Asphalt price, which drives a large part of the budget, is expected to be in line with other projects near the I-95 and Turnpike corridors.

### Liquidated Damages

To encourage conformance with the required schedule, we will apply liquidated damages to the contract. Typical LDs range from $500-$1,500 per day missed. However, given the 72-hour closure, a 'Runway Rental' will also be applied. That charge will apply to each our the FXE runways remain out of service after the 72-hour construction period. This fee will compensate FXE for lost revenues due to the runways being out of service.

## Technology

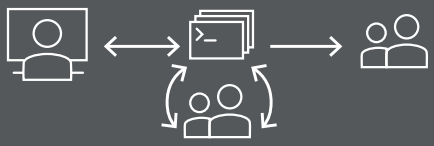
We've embraced technology as your airport consultant, and we've shared in the benefits. Tools like SharePoint, ProjectWise, WebEx, and Bluebeam Revu shrink the map and give you better access to the best resources we have to provide more efficiently.

**Proof:** In the ongoing Taxiway Intersections Improvement project, we use Bluebeam to compute quantity take off's with the Contractor's field superintendent. These quantities are verified and drawn in the field and agreed upon between the Contractor and the field inspector. This allows for both parties to agree on quantities for each day, allowing for a faster reconciliation of the quantities generated for each pay application. In this project, the Contractor has been able to submit the pay applications for each month without delay of signatures from the HDR's RPR.

### SharePoint™

- Easily accessible record of all project correspondence
- Secure web-based environment
- Promotes accountability, transparency and collaboration
- Easy exchange of information

### ProjectWise V10™



- Transmit design information on multiple platforms and devices
- Share data in a controlled environment in real time
- Synchronizes design feedback from multiple team members
- Resolve issues faster—accelerates the design process, enhances coordination and reduces interdisciplinary conflicts

### Cisco Webex Meetings™

- Easily organized meetings and point-to-point communications
- Accessible on multiple platforms
- Enables dial-up access
- Employs security measures to protect from data leakage

### Skype™

- Integrates instant messaging, video conferencing, desktop sharing, and video into one platform
- Allows team members to communicate in real time and makes virtual meetings more effective

### OneDrive™

- Secure and easy way for project team members to send large files to each other

### AUTODESK® INFRAWORKS®

- Visualize your design to see what it will look like on the airfield
- Easy way to present to board members on the overall concept of design

### BLUEBEAM® REVU®

- Ability to perform exact quantity takeoffs during construction
- Easy way for Airport leadership to understand what construction activity took place and quantities generated from your computer in your office

# 6 QUALIFICATION & EXPERIENCE OF THE PROJECT TEAM


FXE's tenants will be kept informed of progress during the critical 72-hour airport closure

# Qualification and Experience of the Project Team

In this section, we will provide the organization chart of HDR's project team, including design and construction phase services. We will describe our Project Manager (PM), **Cody Parham**, and his knowledge of both the design and construction phases of the project, as well as his knowledge of FAA and FDOT design standards and requirements. We will also demonstrate our project team's familiarity with airfield construction management and airfield safety.

## Organizational Structure

Our organizational chart on the following page is structured with a clear hierarchy to allow for well-defined lines of communication. We have also organized our team to provide FXE with continuity throughout the project's life. FXE will benefit from this approach as knowledge will transfer from the design phase to construction, providing better control of quality, costs, and schedule.

## Project Leadership

Our proposed project leadership team will focus on delivering cost-effective solutions that meet your goals. Our team is led by our PM, **Cody Parham**, with support from Deputy Project Manager **Raheel Dossani**, Project Principal **Tim Fish**, Quality Manager **Tim Ward**, and Strategic Advisor **Joe Grubbs**. This forms the core of our contract management team for all services under this contract and brings more than 120 combined years of experience managing airfield design contracts at similar airports.

## Task Leaders

We established our designated task leads based on five key phases of delivery for FXE: Site Investigation/Program Validation, Schematic Design, Design Development/Contract Documents, Bid and Award, and Engineering Construction Management (Work Related Services). Each designated lead will take responsibility for working with our project leadership to deliver on specific goals established for their phase of the project. These designated leads will be engaged throughout the project duration to provide a seamless transition and support to each other.

## Availability

"The proposed staff on our organizational chart, including those from our teaming partners, are committed and available through completion of the Runway 9-27 Rehabilitation." *–Tim Fish, PE, HDR Project Principal*

## Organization Chart of the Project Team

Just as important as the commitment of the firms that make up our team, is the commitment and relevant experience that our people bring. We are committing to you our subject matter experts based on the critical design elements associated with the Rehabilitation of Runway 9-27. **As demonstrated on the next page, we are teaming local experts with FXE experience with national technical resources to deliver your runway rehabilitation safely, on time, and within budget.**

## Benefit to FXE

The combination of Cody and Raheel provides FXE with responsive leadership to your technical and project management needs throughout the project. They both have clear roles and responsibilities. Cody will be focused on bringing best practices developed through the successful delivery of 90+ tasks at FXE and 19 runway projects to solve technical challenges you will face, while Raheel brings experience on FXE-specific construction challenges that will be critical to maintaining the project's schedule and budget.

**City of Fort Lauderdale • RFQ #12740-636**
Consultant Services for Fort Lauderdale Executive Airport
Runway 9-27 Pavement Rehabilitation

CITY OF FORT LAUDERDALE

FXE FORT LAUDERDALE EXECUTIVE AIRPORT

| TEAM LEGEND |
|---|
| HDR (HDR) |
| CRJ & Associates, Inc.+ (CRJ) |
| Cyriaks Environmental Consulting Service, Inc.+ (CECOS) |
| KEITH & Associates, Inc. (K) |
| Ohio University Avionics Engineering Center (OUA) |
| Quantum Electrical Engineering, Inc.+ (QEE) |
| RDM International (RDM) |
| Tierra South Florida, Inc.+ (TSF) |
| + M/WBE and/or DBE Firm |

## PROJECT LEADERSHIP

**PROJECT PRINCIPAL**
Tim Fish, PE (HDR)

**STRATEGIC ADVISOR**
Joe Grubbs, PE (HDR)

**PROJECT MANAGER**
Cody Parham, PE (HDR)

**DEPUTY PROJECT MANAGER**
Raheel Dossani, PE (HDR)

**QUALITY MANAGER**
Tim Ward, PE (KY, PA) (HDR)

**QUALITY REVIEWERS**
Civil Engineering - Tom Bair, PE (NC, OH, WV) (HDR)
Electrical Engineering - Ian Denholm, PE (HDR)
Constructibility - Marc Gambrill, PE (HDR)
Cost & Schedule - Tom Bair, PE (NC, OH, WV) (HDR)

## TASK LEADERS

**PROGRAM, DESIGN, AND BID**
Will Bowdoin, PE (HDR)
TASK LEADER

**CONSTRUCTION**
Raheel Dossani, PE (HDR)
TASK LEADER

## PROJECT DELIVERY

### PROGRAMMING

**Survey/SUE**
Michael Mossey, PSM (K)

**Geotechnical Engineering**
Kumar Vedula, PE (TSF)

**Pavement Testing & Evaluation**
Beida Xie, PE (RDM)

**Electrical Condition Assessment**
James Kappes, PE (QEE)

**Stakeholder Outreach**
Paul O'Rourke (HDR)

**Wildlife Mitigation**
Wendy Cyriacks (CECOS)

**FAA/FDOT Liaison and Grant Assistance**
Marc Gambrill, PE (HDR)

**DBE/MBE Support**
Jackie Hacker (HDR)

**NEPA Categorical Exclusion**
Esther Chitsinde (HDR)

**NAVAID Siting and Modeling**
Simbo Odunaiya, PhD (OUA)

### DESIGN AND BID

**Civil Design**
Will Bowdoin, PE (HDR)

**Electrical, Signage, and Lighting Design**
Amy Champagne-Baker, PE (QEE)

**Construction Phasing & Safety**
Raheel Dossani, PE (HDR)

**Construction Scheduling**
Morgan Chapman, EIT (HDR)

**NAVAIDs**
Megan Tatara, PE (HDR)

**Cost Estimating**
Morgan Chapman, EIT (HDR)

**Stormwater Management & Permitting**
Bart Rohrer, PE, CFM (HDR)

**Pavement Design**
Sagar Bethu, PE, PMP (HDR)

**Bid Evaluation**
Raheel Dossani, PE (HDR)

### CONSTRUCTION

**Resident Project Representatives**
Raheel Dossani, PE (HDR)
Mike Beldowicz, PE (QEE)
Marc Fermanian, PE (CRJ)

**Construction Materials Testing**
Morgan Dickinson, PE, SI (TSF)

**Paving Quality Assurance**
Chris Decker, PE (RDM)

**Weather Forecasting**
Michael McMahon, ENV SP (HDR)

## PM's Experience and Knowledge

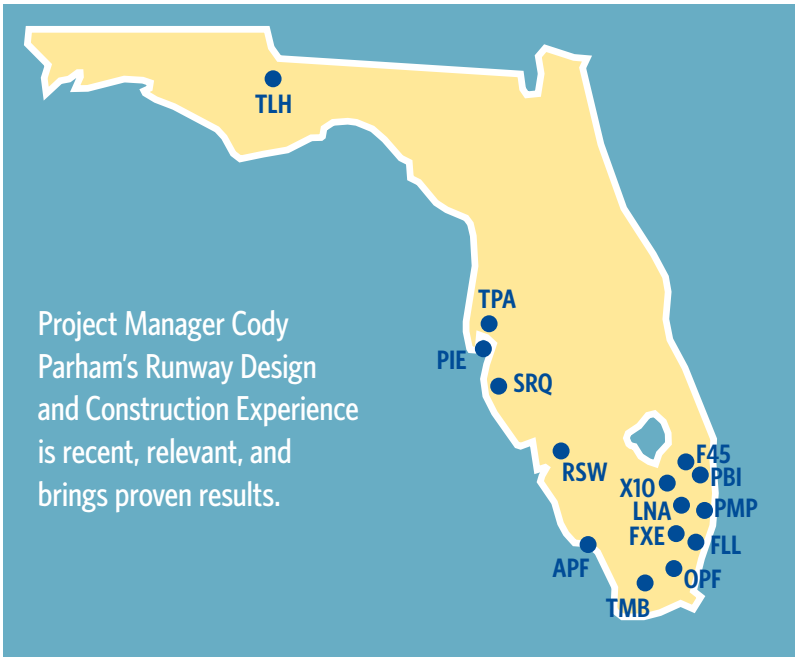
During my 16-year career, I've demonstrated my ability to provide airfield design and manage construction on large, complex airfields, including 19 runway projects. My relentless attitude toward solving tough problems has resulted in a proven approach to managing the schedule and budget of these tasks.

## Relevant PM Experience

I've led numerous asphalt runway projects at large GA and commercial services airports worth more than $120 million in construction, including PBI, APF, FLL, and FXE. I've worked at other major GA airports across the country, but I am more than thrilled at the prospect of working at my 'home' airport, FXE. Nothing is more rewarding than seeing the first plane land on time on the new runway surface – each time is as rewarding as the first time I witnessed it. All the hard work truly pays off when the project is a success, and I've created new aviation family ties throughout the journey.

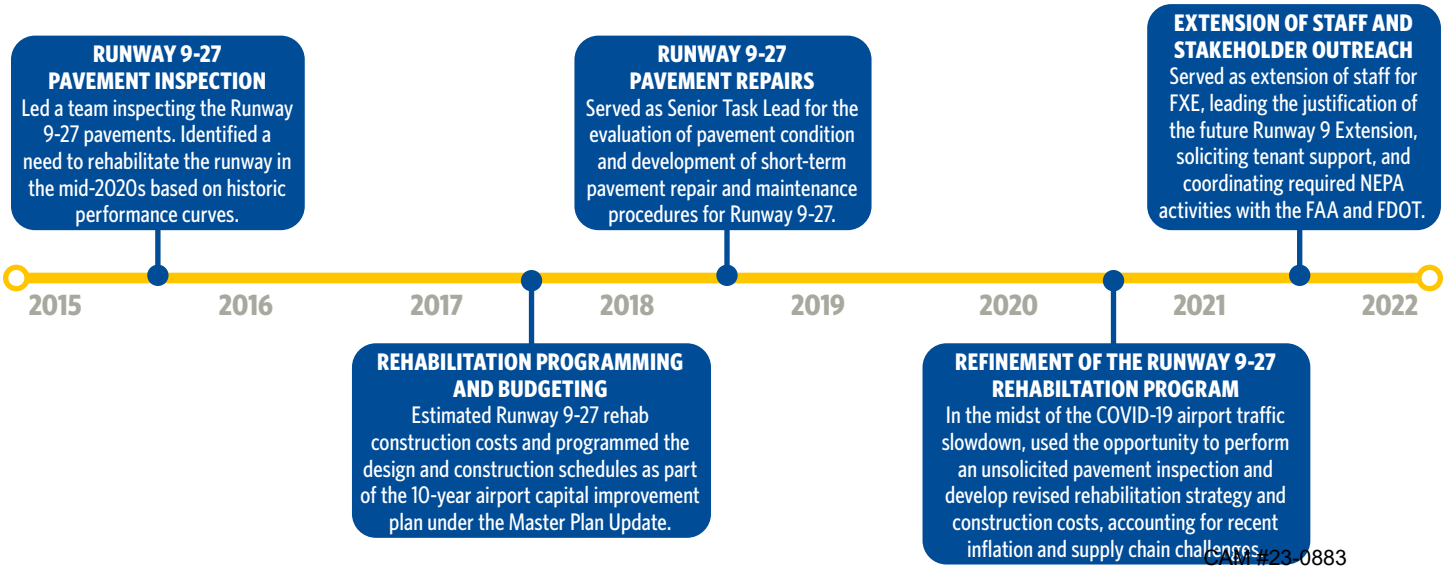
As your project manager, I will draw upon my design and construction experience, including 16 rehabilitations. I will be responsible for management and oversight of the entire design, plus direct technical support during construction and on-site field engineer services, as your local longtime engineering consultant.

Project Manager Cody Parham's Runway Design and Construction Experience is recent, relevant, and brings proven results.



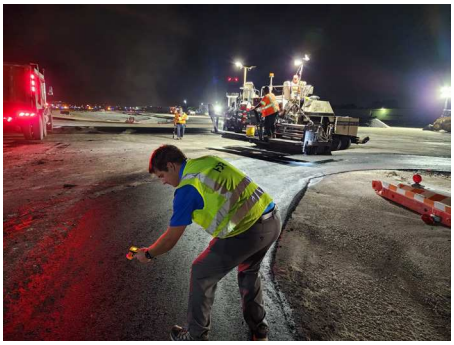

## Demonstration of PM's Knowledge

As your project manager, I will lead all aspects of the design and construction to rehabilitate Runway 9-27 in the shortest, realistic, cost-conscious manner. At FXE, construction phasing must be logically sequenced. How fast we restore operations directly impacts your staff, your tenants, and your neighbors. I'll use my knowledge of this project developed over the past 7 years to identify the key challenges and develop effective, realistic solutions.



## PM's Experience and Knowledge for Design Phase Services

The significant design/bid phase challenge is preparing to execute the runway mill and overlay prior to the 2024 busy season. As I have learned through my recent projects at FXE, there is no longer a 'summer slowdown' in which to schedule the airport closure. The preferred window to schedule the closure is early August 2024. That date will only provide 2 months between the FAA grant offer for construction funding in June and the closure in August. That is an insufficient amount of time to bring the contractor on board and have the asphalt mix design, quality control plan, and safety plan approved. To mitigate this challenge, I've worked with our senior advisors Marc Gambrill and Joe Grubbs on a mitigation strategy to keep the project on schedule. We've developed a '200-day Countdown' commencing in April 2024, during final design, to allow for an August 2024 closure of the airport. This strategy is further described in our 'Approach to Scope of Work' section.



Cody takes a hands-on approach to construction management during night paving of Taxiway E6 at FXE.

## PM's Experience and Knowledge for Construction Phase Services

The biggest, most exciting challenge will be our proposed 72-hour airport closure for the runway mill and overlay. Together with Constructibility Lead Marc Gambrill and Deputy PM Raheel Dossani, I've already reached out to the leading paving contractors in Fort Lauderdale. The contractor feedback has been clear. We must require a dedicated production plant and provide on-site storage of all materials if we are to meet the schedule. I'll continue to stay abreast of construction trends in our area and update our strategy accordingly throughout design. We've provided comprehensive list of contractor requirements for your review in the 'Approach to Scope of Work' section.

### AIRPORT DEVELOPMENT SUBJECT MATTER EXPERT

I have been a long-serving participant on the Airport Consultants Council's (ACC) Engineering Committee, the Florida Airport Council's (FAC) Corporate Committee, and the American Society of Civil Engineer's (ASCE) Airfield Pavement Committee. As an active member of these groups, I routinely and actively collaborate with the FAA and FDOT on updating their standards for the most current practical design practices, including the recent updates to FAA Advisory Circulars 150/5320-6 'Airport Pavement Design and Evaluation' 150/5300-13B 'Airport Design' updates.

## Here are a few examples of instruction I've curated and led for design and construction best practices and solutions:

- Presenter: Emerging Tools Aiding the Transition from Design to Construction at Airports
  - Airport Planning, Design, and Construction Symposium, 2020
- Presenter: FAA requirements for Airfield Construction Documentation
  - Lunch and Learn with FXE Staff, 2018
- Presenter: Airport Design and Construction Considerations
  - Palm Beach Chapter of the American Society of Engineers
- Proctor: FDOT Airfield Pavement Inspection Course
  - Various dates, 2011-2016
- Presenter: Applying Civil Engineering Principals to Airport Design
  - CEE 4410 Transportation Engineering Course at Florida Atlantic University
- Presenter: ASCE Florida Section Project of the Year – 7th Street Pavement Rehabilitation
  - Engineers in Government Award Ceremony, 2021
- Moderator: Attracting and Retaining Talent in Airport Consulting
  - Airport Planning, Design, and Construction Symposium, 2019

# PM's Knowledge of FAA and FDOT Requirements

The design and construction phases of this project will potentially be funded with a 90/5/5 FAA Airport Improvement Program (AIP) Grant. These are 90% funded by the FAA, 5% funded by the FDOT, and 5% funded by the Airport itself. Portions of this project may be funded by an 80/20 FDOT grant, with 80% funded by the FDOT and 20% funded by the Airport itself. Once the Airport agrees to accept any grant funding, it is obligated to follow the rules established in the 39 FAA Grant Assurances and the FDOT Public Transportation Grant Agreement (PTGA). As your Project Manager, I will be responsible for anticipating and interpreting how these requirements apply to the project, and for executing a strategy to keep the project in compliance. Examples of how these requirements will apply to the project are presented below.

## Knowledge of FAA Design Standards, Specifications, Design, and Construction Requirements

### FAA DESIGN STANDARDS

From my work on your master plan, I understand FXE's desires to lengthen the threshold area behind the Runway 9 by 1,000 feet to accommodate larger aircraft and reduce noise impacts to neighbors. FAA AC 150-5300-13A requires the first and last ¼ of each runway centerline to be flat. That means when the runway is extended in the future, an additional 250 feet of Runway 27 centerline will need to be flat. In the rehabilitation project, we will go ahead and make the required adjustments to the centerline so the future runway extension does not have to go back and tear up new asphalt.

### FAA SPECIFICATIONS

As an FAA grant sponsor, FXE is required to comply with the current FAA specifications at the time the grant is offered. Since the grant offer is not expected until June 2024, there is a risk that the design team could start out designing to a specification that will be outdated when the grant is offered. As Project Manager, I regularly attend updates from the FAA Office of Airports (AAS-100). From these updates, I stay aware of upcoming specification updates and will develop a plan for remaining in compliance through the grant offer phase.

Upcoming FAA Specification Updates Affecting This Project:

- AC 150/5345-46F, Specification for Runway and Taxiway Light Fixtures
- AC 150/5345-42K, Specification for Airport Light Bases, Transformer Housings, Junction Boxes, and Accessories

### FAA CONSTRUCTION REQUIREMENTS

The FAA now requires a Construction Management Program (CMP) be provided for projects with a paving value of over $500,000 under AC 150/5370-12B 'Quality Management for Federally Funded Airport Construction Projects'. This project will exceed that amount and FXE should expect their consultant to understand and develop this program. As FXE's consultant project manager for previous airfield work, I understand which roles you typically keep in house (grant reporting, change order approval) and which you prefer your consultant to perform (construction inspection, materials testing). Note that this effort is separate from the Construction Safety and Phasing Plan (CSPP), which is also required for this project.

## Knowledge of FDOT Requirements

The FDOT has aligned its grant requirements to closely match those of the FAA. Below are the most critical requirements that are sometimes overlooked during FDOT-grant funded projects.

### DESIGN - NEPA COMPLIANCE

This project will be required to comply with the National Environmental Policy Act (NEPA). While standard mill/overlay projects do not typically trigger a full Environmental Assessment (EA), an FAA-approved Categorical Exclusion (CatEx) will be required prior to the final construction funding application in May 2024. Even though the RFQ does not request this service, I have added an airport NEPA specialist, Esther Chitsinde, to the team for this work.

### CONSTRUCTION - JACIP UPDATES

FXE operates with a lean staff and relies on its consultants to oversee projects. One way HDR can relieve your staff workload is through grant management and reporting, a role we currently hold on several of your construction projects. The heart of FDOT grant management is through the Florida Aviation Database (FAD) Joint Automated Capital Improvement Program (JACIP). Our daily progress reports, monthly work summaries, and financial tracking tools are provided in a format that can be easily uploaded to the FAD for quarterly work summaries.

## Project Team's Familiarity with Airfield Construction Management and Airfield Safety

HDR's entire leadership team is composed of professionals who are full time airport designers and construction managers. Our experience at airports in south Florida and throughout the nation gives you access to industry-leading expertise, applied to your specific construction market.

| Expertise in Runway Construction Management and Airfield Safety | Years of Experience | Airport Construction Management | Airport Construction Administration | Airport Construction Inspection | Airport Construction Materials Testing | Airside Driver | Airside Escort | Construction Safety and Phasing Planning |
|---|---|---|---|---|---|---|---|---|
| Cody Parham, Project Manager | 16 | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Tim Fish, Project Principal | 18 | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Joe Grubbs, Strategic Advisor | 35 | ■ | ■ | ■ | ■ | | ■ | ■ |
| Marc Gambrill, Constructability | 26 | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Tim Ward, Quality Manager | 19 | ■ | ■ | ■ | ■ | | | ■ |
| Will Bowdoin, Design Lead | 30 | ■ | ■ | ■ | ■ | | | ■ |
| Raheel Dossani, Deputy Project Manager | 7 | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Amy Champagne-Baker, Electrical Design Lead | 25 | ■ | ■ | ■ | | | ■ | |
| Sagar Bethu, Pavement Design Lead | 37 | ■ | ■ | ■ | ■ | | | ■ |
| Chris Decker, Pavement Quality Assurance | 20 | ■ | ■ | ■ | ■ | ■ | | ■ |

## How We Apply Our Experience to Your Runway 9-27 Rehabilitation Project

**PROJECT MANAGER - CODY PARHAM**

*From my runway rehabilitation experience, I advise that we utilize inspectors with expertise in specific areas of the work. For paving, electrical, and markings, we will have a specific on-site inspector for each activity.*

**DEPUTY PROJECT MANAGER - RAHEEL DOSSANI**

*From my experience managing construction at FXE, I'll issue daily construction reports with quantities pre-negotiated with the contractor. This reduces delays in payment to subcontractors and keeps the project moving forward.*

**PROJECT PRINCIPAL - TIM FISH**

*I'll use my experience at airports throughout the country to help FXE find a balance between cost and contractor performance by providing incentives and penalties for the critical milling and paving operations.*

**QUALITY MANAGER - TIM WARD**

*I will bring best practices from managing construction of LEX Runway 4-22 rehabilitation to establish contingency planning for critical milling and paving operations, including standby crews and equipment.*

**CONSTRUCTIBILITY ADVISOR - MARC GAMBRILL**

*As a former airport owner and operator, I advise we hire police to staff the AOA gates during critical airport closures for construction. This keeps contraband off the airfield and frees the HDR team to monitor construction.*

## Detailed Resumes of Key Staff

Although detailed resumes were not requested in the RFQ, we have included them for our key staff below. Each of these resumes demonstrate a depth and breadth of runway rehabilitation experience local to Florida where needed, and with national expertise to support.

*"It's important to me to contribute to the longevity of FXE's exceptional infrastructure, growth, and continued success in supporting our local economy. This project is a great opportunity for me to bring my aviation experience and best practices to FXE and serve as your trusted advisor. I understand the sacrifices you undergo when runways are down. With this in mind, I take pride in leading and guiding my teams toward successful outcomes. My staff are like family to me, and we are ready to roll up our sleeves and work with you to rebuild your runway."*

**EDUCATION**
BS, Civil Engineering,
Georgia Institute of Technology

**REGISTRATIONS**
Professional Engineer, Florida, No. 73904

**PROFESSIONAL MEMBERSHIPS/ ACHIEVEMENTS**
Presenter: Emerging Tools Aiding the Transition from Design to Construction at Airports' Airport Planning, Design, and Construction Symposium, 2020

Presenter: FAA requirements for Airfield Construction Documentation', Lunch and Learn with FXE Staff, 2018

Proctor: FDOT Airfield Pavement Inspection Course, Various dates, 2011-2016

Presenter: ASCE Florida Section Project of the Year – 7th Street Pavement Rehabilitation, Engineers in Government Award Ceremony, 2021

Moderator: Attracting and Retaining Talent in Airport Consulting, Airport Planning, Design, and Construction Symposium, 2019

Airport Business Magazine, Top 40 Under 40, 2018

**INDUSTRY TENURE**
15 years; 13 years serving FXE

# Cody Parham, PE

**Project Manager**

Cody works to enhance safety, capacity, and the customer experience at airports through creative solutions for capital improvement challenges. He serves as the aviation market sector lead for HDR's operations in Florida, Alabama, and Mississippi. In this role, he is responsible for client service and execution of complex planning, design, and construction projects. His industry leadership roles include Airport Consultants Council Young Professional Forum Chair and moderator of multiple technical sessions for the Airport Planning, Design, and Construction Symposium. He has been recognized in Airport Business Magazine's Top 40 Under 40 and is the recipient of the Airport Consultants Council's Board of Directors Chair Award.

## WHAT IS YOUR LEVEL OF INVOLVEMENT IN THIS WORK?

*As your Project Manager, I will lead all aspects of the project to rehabilitate Runway 9-27 quickly and with as little impact to airport operations as possible. I understand how to seamlessly manage projects with several moving parts. Construction phasing has to be logically sequenced, and how fast we restore operations directly impacts the airport, its users, and the local community. The biggest, most exciting challenge will be scheduling the full airport closure for the runway mill and overlay. I will bring proven, technical solutions and engage with the local contractor community to set an aggressive, realistic closure period. Together, we will consider all stakeholder perspectives to resolve this complex challenge. I will leverage the unique skill sets of my talented teammates. They have profound knowledge and understanding of FXE and FAA procedures, guidelines, and processes. Our existing relationships with FXE will help us provide as close to normal operations as possible during construction.*

## HOW WILL YOU CONTRIBUTE TO THE SUCCESS OF THIS WORK?

*I bring local knowledge and national best practices from previous runway rehabilitations to this project. As the programming lead for Runway 10L-28R at Fort Lauderdale International Airport (FLL), I gained a deep understanding of the coordination it takes to close and rehabilitate a runway – from coordinating with maintenance to security, operations, field staff, the FAA, and finance. Tailored communication to each stakeholder is critical. Bringing this understanding to FXE means I'll have a plan ready on day 1 to balance the needs of your tenants, financiers, regulators, and contractors to provide you with a safe, durable runway for years to come. While my local experience has been invaluable, I am most excited to bring expertise gained through executing runway rehabilitations across the country. From my experience rehabilitating Runway 4-22 at Blue Grass Airport (LEX), I learned that early contractor input and buy-in are critical to setting the duration of the airport closure to accomplish the work. To that end, I've already begun reaching out to the 3 paving contractors who have bid projects at FXE in the recent past. From that feedback, I've developed a plan to close FXE for just 72 hours to complete the main mill and overlay of the runway.*

## CONTROL OF SCHEDULE AND BUDGET

*While our solutions may be innovative, I will continue to use our proven strategies for maintaining control of schedule and budget at FXE. I've built trust with your team delivering projects for the cost and duration we promised, and that won't change. I am accountable to you for work that achieves your goals and expectations. And if it doesn't, I'll make it right.*

## WHAT QUALIFIES YOU TO BE IN THIS ROLE?

*My diverse aviation design career includes 19 runway rehabilitations, 15 airport clients, and design projects for 25 different airports. This experience provides you with an experienced aviation engineer with a deep understanding of the coordination necessary to complete complex airfield projects. Additionally, I got my start in aviation serving as an engineer-in-training on FXE's general consultant contract back in 2009. I've served FXE continuously since then to the current day. In that time, I've developed a comprehensive understanding of FXE's facilities and the people that make it run.*

Cody Parham (Continued)

RELEVANT EXPERIENCE

## Runway 4-22 Rehabilitation

*Blue Grass Airport (LEX), Lexington, KY*

This project was designed to allow for a 72-hour airport closure complete the milling, paving and marking of the entire 7,000 ft long x 150 ft wide asphalt grooved runway with 10 connecting taxiways. HDR hosted a series of 5 workshops with the contractor, key subcontractors, QA/QC personnel, LEX Engineering /Maintenance/ Operations staff. The workshops focused on site safety, security, communication protocols, staffing, haul routes (on and off site), milling operation, paving plans, quality control, weather contingency plans, staging/laydown, and site cleanup. This allowed us to track the progression throughout the weekend so that all the stakeholders were aware of how progress toward the reopening was tracking all while staying within the bounds for safety and security identified within the CSPP.

Role: Senior Engineer. Responsible for development of the field investigation services, including geotechnical engineering, survey, and subsurface utility engineering. Developed pavement rehabilitation and geometry correction alternatives and conceptual construction costs. Evaluated the merits of each alternative and coordinated with the Owner to select the preferred alternatives. Identified potential bidders and developed a contractor outreach program to solicit interest and estimate achievable work production rates. Worked with Airport leadership to project future operations and identify the best closure periods to limit construction impacts. Developed a rehabilitation program for the 10 connecting taxiways to correct deficient geometries and while salvaging existing electrical, lighting, and signage features.

### PROJECT COST AND SCHEDULE

- Design Cost: $1.5 million
- Construction Cost: $17 million
- Design Completed: 2020
- Construction Completed: 2022

## Runway 10L-28R Rehabilitation

*Fort Lauderdale-Hollywood International Airport (FLL), Fort Lauderdale, FL*

Project consists of pavement rehabilitation, geometry updates, and drainage improvements for the 9,000-ft x 150-ft grooved asphalt Runway 10L-28R and 21 associated taxiways. The north airfield at FLL contained distressed pavements and insufficient drainage infrastructure. Major deficiencies included degraded pavement grooves and local structural failures. The runway outboards were milled and overlayed with new asphalt. The keel section was demolished and replaced with Portland Cement Concrete (PCC) pavements to provide a more durable landing surface and to better withstand rubber removal. The primary runway paving work was completed in a 75-day window.

Role: Programming and Design Manager. Served as task manager for existing condition evaluation, pavement rehabilitation strategy, life cycle cost analysis, and geometric updates to connecting taxiways. Developed and presented the preferred alternative improvements to Airport stakeholders, including administration, operations, finance, and engineering staff. Designed the geometric updates to 21 connecting taxiways, enhancing airfield safety by removing high-energy conflict zones and simplifying intersections to have no more than 4-nodes.

### PROJECT COST AND SCHEDULE

- Design Cost: $1.2 million
- Construction Cost: $75 million
- Design Completed: 2018
- Construction Completed: 2019

## Runway 9-27 Various Projects

*Fort Lauderdale Executive Airport (FXE), Fort Lauderdale, FL*

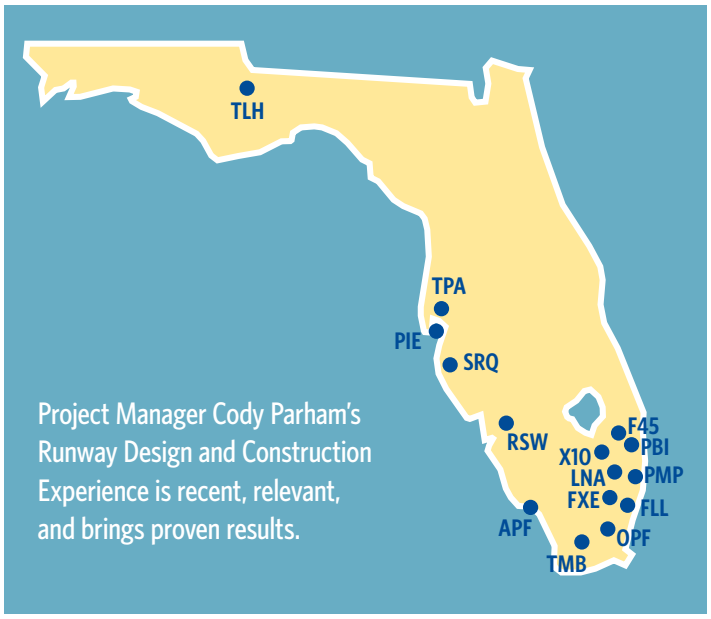
Since 2014, HDR has provided general consulting services to support the Fort Lauderdale Executive Airport (FXE) development programs via an on-call contract. We have worked closely with the airport engineer and management to deliver 53 task orders while coordinating a team of 7 subconsultants. Highlighted tasks related to Runway 9-27 include:

- Runway 9-27 and 13-31 Pavement Repair Design and Construction (6,002 ft x 100 ft)
- Runway 9-27 Extension Justification
- Runway 9-27 Extension Tenant Support Letter Writing Campaign
- Runway 9-27 Rehabilitation Cost Estimating and Programming
- Runway 9-27 Pavement Management Inspection, Evaluation, and Rehabilitation Programming
- Runway Incursion Mitigation Design and Construction
- Airfield pavement rehabilitation design and construction for Taxiways B, D1, E, G, L, N
- Capital improvement programming of the Runway 9-27 Rehabilitation under the 2018 Master Plan Update

Role: Project Manager. Cody served as the primary point of contact between the owner and the design team, managing workflows, schedule, and budget to deliver the design documents, cost estimate, design report, and construction schedule for bidding within the timeframe required by the client. He was responsible for managing the team of HDR staff and subconsultants and for executing the project management, quality, safety, and communication plans. During the construction phase of projects, Cody planned and led kickoff and milestone contractor progress meetings and provided on-site field support services to observe the contractors work and resolve conflicts during critical earthwork, drainage, base course, paving, and marking work. He maintained a DBE/MBE participation rate above 20% for the duration of the contract. Under his leadership, there have been zero change order requests submitted due to errors and omissions in his designs.

### PROJECT COST AND SCHEDULE

- Design Cost:$1.5 million
- Construction Cost: $11 million
- Design Ongoing - On call contract
- Construction Ongoing - On call contract



RELEVANT EXPERIENCE

## Various Runway Rehabilitations

*Palm Beach County Department of Airports, Palm Beach County, FL*

Since 2018, Cody has provided civil consulting services to support Palm Beach International Airport (PBI), Palm Beach County Park Airport (LNA), and North Palm Beach County General Aviation Airport (F45). development programs via an on-call contract. As project manager for the prime consultant, Cody has worked closely with the airport engineer and management to deliver 4 runway rehabilitation designs while coordinating a team of 5 subconsultants. All 4 projects include mill and overlay of asphalt pavements. Highlighted tasks include:

- LNA Runway 4-22 Rehabilitation Design (3,256 ft x 75 ft)
- F45 Runway 9R-27L Rehabilitation Design (4,300 ft x 100 ft)
- PBI Central Airfield and Runway 14-32 Shoulders Rehabilitation Design (6,931 ft x 150 ft)
- LNA Runway 10-28 Surface Treatment Design (3,489 ft x 75 ft)

Role: Project Manager. Cody served as the primary point of contact between the owner and the design team, managing workflows, schedule, and budget to deliver the design documents, cost estimate, design report, and construction schedule for bidding within the timeframe required by the client. He was responsible for managing the team of HDR staff and subconsultants and for executing the project management, quality, safety, and communication plans. He maintained a DBE/MBE participation rate above 20% for the duration of the contract. Cody's primary technical responsibilities include development of the programming phase, evaluation of pavement rehabilitation alternatives, design development of the preferred alternative, and development of bid documents to include all earthwork, drainage, base course, paving, marking, signage, lighting, and electrical work.

### PROJECT COST AND SCHEDULE

- Design Cost: $3.5 million
- Construction Cost: $48 million (estimated)
- Design Completed: 2022
- Construction Complete: 2025 (estimated)

## Runway 8-26 Rehabilitation

*Luis Munoz Marin International Airport (SJU), San Juan, PR*

Role: Design Manager. With a previous firm, Cody provided design of the asphalt pavement rehabilitation of the 10,400 ft x 193 ft Runway 8-26 and associated taxiway connectors. The project consisted of pavement milling, overlay, deep repairs, drainage, grading, marking, signage, and electrical work. The project included the evaluation of existing pavements by visual inspection and geotechnical testing in accordance with FAA advisory circular 150/5320-6. Cody developed rehabilitated pavement sections for six unique existing pavement conditions, including asphalt over concrete, concrete over asphalt, and asphalt mill/overlay. The designs developed allowed the owner to salvage existing pavements and base courses, saving it $1.5 million over the closest design alternative.

### PROJECT COST AND SCHEDULE

- Design Cost: $1.5 million
- Construction Cost: $22 million
- Design Completed: 2015
- Construction Completed: 2019

## Other Runway Project Experience

- Belle Glade State Municipal Airport (X10)
  - Runway 9-27 Reconstruction (3,455-ft x 50-ft)
- Rickenbacker International Airport (LCK)
  - Runway 5R-23L Rehabilitation (12,000-ft x 200-ft)
- Tucson International Airport (TUS)
  - New Runway 12R/30L (10,996-ft x 150-ft)
- Naples Airport (APF)
  - Runway 5-23 Rehabilitation (6,600 ft x 150 ft)
- Pompano Beach Airpark (PMP)
  - Runway 10-28 Safety Enhancements (3,502 ft x 100 ft)
- Miami Executive Airport (TMB)
  - Hot Spot 1 Mitigation and Runway 13-31 Rehabilitation (4,001 ft x 150 ft)
- Kodiak Benny Benson State Airport (ADQ)
  - Runway 11-29 Rehabilitation (5,400 ft x 150 ft)
- Northwest Arkansas International Airport (XNA)
  - Runway 16-34 Rehabilitation (8,801 ft x 150 ft)
- Hartsfield-Jackson Atlanta International Airport (ATL)
  - New Runway 10-28 (9,000 ft x 150 ft)
- Sarasota Bradenton International Airport (SRQ)
  - Runway 4-22 Rehabilitation (5,006 ft x 150 ft)
- Tampa International Airport (TPA)
  - Airfield Safety Enhancement Program, Runway 10-28 (6,999 ft x 150 ft)

*"As a dedicated member of the Fort Lauderdale community, I am committed to ensuring the longevity and success of our exceptional infrastructure. I understand the critical role that Runway 9-27 plays in supporting the operations of FBOS's and emergency responders at FXE. That's why I strive to engage contractors early in the design phase and develop construction phasing and design documents that will allow us to efficiently rehabilitate your primary runway. By working together, we verify FXE can continue to thrive and grow for years to come."*

**EDUCATION**
BS, Civil Engineering,
Florida Atlantic University, 2015

**REGISTRATIONS**
Professional Engineer, Florida, No. 89831

**INDUSTRY TENURE**
7 years
6 years serving FXE

# Raheel Dossani, PE

**Deputy Project Manager**

With 7 years of extensive experience in aviation transportation design, Raheel is a seasoned professional with a wealth of knowledge in various aspects of airport design. His project experience includes maintenance of traffic, pedestrian bridges, roadway design, and landscape design. Raheel is also proficient in a range of computer programs including AutoCAD Civil 3D, Aviplan, FAARFIELD, Bluebeam, Revit, Synchro, Infraworks, Navisworks, MicroStation, and AutoTurn.

## HOW WILL YOU CONTRIBUTE TO THE SUCCESS OF THIS WORK?

*As the deputy project manager, I will be your boots-on-the-ground, local point of contact. I am conveniently located just a few minutes away from your offices and have firsthand experience delivering work for FXE. I am eager to address any operational challenges that may arise and work to minimize shutdown times, minimize disruptions, and enhance safety. My thorough understanding of your project's objectives, requirements, and timeline, combined with my proactive approach to project management, will help prevent future issues. For instance, during the design phase of the Taxiway G Rehabilitation project, I identified a potential cost issue and brought it to the attention of airport leadership, which allowed them to secure additional funding from the state and the city. In my current role on the Taxiway Intersection Improvements project, I have established a clear communication approach with the FXE airport project manager, making it clear that I am his direct point of contact and available for any issues that may arise. I have previously worked with project manager Cody Parham on numerous large airfield projects and have developed a strong level of trust that allows the completion of tasks to be accurate and on schedule.*

## WHAT IS YOUR LEVEL OF INVOLVEMENT IN THIS WORK?

*As a seasoned Project Engineer and Construction Administrator, I am well-equipped to oversee the production of the runway rehabilitation design, prepare and compile contractor specifications, and conduct thorough engineering reviews. I am enthusiastic about meeting FXE's high standards and expectations while keeping the project on track. To allow for success, I will draw upon the extensive knowledge base of our team, as well as the insights of Tim, our strategic advisor, from similar projects across the company.*

*During the construction administration phase, I will take a leading role in the project. However, my involvement actually begins during the design phase, when I will conduct constructability reviews on the contract documents to verify that our approach is sound and that our bid documents are clear and comprehensive. This is especially important because the project involves your critical runway, and it is crucial that the bid documents are as accurate and comprehensive as possible.*

## WHAT QUALIFIES YOU TO BE IN THIS ROLE?

*Throughout my career, I have overseen the design production for four runway projects in South Florida and worked closely with clients to verify smooth project execution. Through these experiences, I have learned how to create clear and easily understandable sets of plans and identify ways to streamline design schedules to meet revenue source deadlines such as grants from the FDOT and FAA.*

*As a construction administrator and inspector, I understand that viewing plans on a computer screen does not capture the full scope and complexity of an airfield's massive pavement infrastructure. I was fortunate to begin my career as an intern at HDR, working on projects at FXE, where I have completed a range of aviation projects by watching designs come to life from start to finish on the airfield. For example, I was involved in the Taxiway Intersections Improvement project at FXE from 0% design to construction completion in 2016, and also served as inspector for the Runway 9-27 surface sealing project that same year. My firsthand experience working on this runway, including during a weekend closure when we were completing the bulls eye, has given me a deep appreciation for the importance of keeping the primary runway operational.*

*I am always striving to learn and improve my designs by applying lessons learned from my construction projects to my next set of plans. I am grateful for the opportunity to work on FXE's dynamic projects and gain a holistic understanding of not just aircraft operations and pavement, but also utilities, stormwater, and vertical design. My collaborative approach and broad understanding will contribute to a better overall design.*

## RELEVANT EXPERIENCE

- Pavement Rehabilitation of Runways 9/27 and 13/31 Pavement Maintenance Rehabilitation, Fort Lauderdale Executive Airport (FXE), Fort Lauderdale, FL
- Runway 4-22 Pavement Rehabilitation, Palm Beach County Airport (LNA), Lake Worth, FL
- Runway 9R-27L Pavement Rehabilitation, North Palm Beach County General Aviation Airport (F45), West Palm Beach, FL
- New Runway 11R-29L, Tucson Airport Authority, Tucson, AZ
- Runway 4-22 Rehabilitation, Blue Grass Airport (LEX), Lexington, KY
- Runway 28 Extension, Pompano Beach Airpark (PMP), Pompano Beach, FL
- Runway Incursion Mitigation Taxiway H Extension, Miami Executive Airport (MIA), Miami, FL
- Taxiway Intersection Improvements, Fort Lauderdale Executive Airport (FXE), Fort Lauderdale, FL
- Taxiway G Pavement Rehabilitation, Fort Lauderdale Executive Airport (FXE), Fort Lauderdale, FL
- Central Airfield Rehabilitation, Palm Beach International Airport (PBI), Palm Beach, FL
- Runway 31 Bypass Taxiway, Fort Lauderdale Executive Airport (FXE), Fort Lauderdale, FL

### Pavement Rehabilitation of Runway 9/27 and 13/31 Pavement Maintenance Rehabilitation

*Fort Lauderdale-Hollywood International Airport (FLL), Fort Lauderdale, FL*

This project was to apply seal coat to Runway 9-27 at FXE to increase the life of the pavement before it required a full rehabilitation. The phasing for this project required both of the runways to be closed, which caused a full shutdown of the airport for two consecutive weekends to allow the Contractor to perform surface preparation, repair surface distresses, apply seal coat, and application of permanent pavement markings.

Role: Construction Inspector. Raheel served as the primary construction inspector for this critical project, working closely with the Contractor and the City to achieve its successful completion. As the inspector, Raheel oversaw construction during the critical runway closures, and fully understands the significance of keeping the contractor on schedule in order to have the runway open at its designated time. Through Raheel's attention to detail and oversight, the contractor was able to complete the construction phases that required runway closures with precision and efficiency. Raheel has developed a knowledge of construction best practices for a critical runway closure and will be applying lessons learned to this project.


Due to COVID-19 protocols, Raheel developed a virtual pre-bid conference site tour of TMB for contractors.

### Runway Incursion Mitigation Taxiway H Extension

*Miami Executive Airport (TMB), Miami, Fl*

This project was to eliminate hot spot 1 at TMB and construct an additional parallel taxiway for the Runway 9 entrance. This project's construction was around the safety areas of TMB's primary runway, Runway 9R-27L which required a meticulous phasing approach that would provide the least disruptions to airport operations.

Role: Construction Phasing & Safety Lead and Construction Administrator. Raheel provided construction administration services for a Runway Incursion Mitigation I project that involved work in close proximity to the TMB's primary runway, Runway 9R-27L. This project was comprised of multiple phases, some of which were executed directly against the edge of the runway pavement, necessitating the closure of the runway for safety reasons.

To achieve the project's success, Raheel carefully designed a phased approach that enabled the contractor to work against the runway edge of pavement while also implementing provisions in the plans that enabled the runway would be opened each morning. Through this meticulous planning and execution, the contractor was able to complete the phases that required runway closures within the time frame specified in the bid documents, enabling the project to be completed on schedule and to the satisfaction of all stakeholders.

### Palm Beach County Department of Airports

*Palm Beach County, FL*

Role: Construction Phasing & Safety Lead. Raheel was the primary construction phasing engineer for the design of three runway rehabilitation projects for the PBCDOA. Raheel worked closely with airport operations to present a plan for rehabilitating the runway with least impacts to airport operations.

*"Over my 35 year career, I've demonstrated my ability to deliver airfield pavement design and constructability and operational phasing on large, complex airfields, including more than 32 runway projects. My relentless attitude toward solving tough problems has resulted in industry innovations, which I will bring to this project and FXE."*

**EDUCATION**
BS, Civil Engineering,
Youngstown State University

**REGISTRATIONS**
Professional Engineer, Florida, No. 65837
Virginia
Pennsylvania
New York
Ohio
Arizona

**PROFESSIONAL MEMBERSHIPS**
Airport Consultants Council – Engineering Committee

American Concrete Paving Association

American Society of Civil Engineers

Aviation Council of Pennsylvania

Construction Management Association of America

PENNDOT Bureau of Aviation - Western Pennsylvania Representative of the Customer Process Task Force

**INDUSTRY TENURE**
35 years
5 years serving FXE

# Joe Grubbs, PE

**Strategic Advisor**

Joe has the experience of designing over 30 runways in 35 years, which gives him one of the country's most extensive runway design resume. For the past 10 years, he has led more than 10 commercial airfield projects worth more than $880M in construction, and has served as the program, project, and design manager for 3 military airfield projects worth more than $90M in construction. Joe's experience also includes construction management and program management for airfield runway, taxiway and apron pavements, roadway pavements, drainage systems and airfield lighting systems.

### HOW WILL YOU CONTRIBUTE TO THE SUCCESS OF THIS WORK?

*As Strategic Advisor, I guide the development strategies for the design while providing best practices from similar projects.*

### WHAT IS YOUR LEVEL OF INVOLVEMENT IN THIS WORK?

*Beginning with program verification, I'll assist Cody in identifying potential pitfalls, and developing strategies to avoid them. I'll bring experience working on similar programs to direct best practices in our approach.*

### WHAT QUALIFIES YOU TO BE IN THIS ROLE?

*As a former Contractor and with 30 years of airfield design experience, I have served as Project Engineer, Project Manager and Construction Resident Engineer for fast-track airfield construction projects across the US. This gives me one of the most extensive and diverse airfield design resumes in the country. I will help set up this team up for quality work by develop strategies to mitigate issues before they arise.*

## RELEVANT EXPERIENCE

- Runway Incursion Mitigation (RIM), Fort Lauderdale Executive Airport (FXE), Fort Lauderdale, FL
- Runway 10L-28R Rehabilitation, Palm Beach International Airport (PBI), Palm Beach, FL
- Rehabilitation of Runway 18-36, Space Coast Regional Airport (TIX), Titusville, FL
- Runway 10L-28R Rehabilitation, Port Columbus International Airport (CMH), Columbus, OH
- Runway 5L-23R Replacement Project, Raleigh-Durham International Airport (RDU), Morrisville, NC
- Runway 9R-27L Extension and Associated Taxiways Program, Philadelphia International Airport (PIA), Philadelphia, PA
- Reconstruction of Runway 1C-19C, Washington Dulles International Airport (IAD), Chantilly, VA
- Reconstruction of Runway 12-30, Washington Dulles International Airport (IAD), Chantilly, VA
- Runway 4-22 Rehabilitation, Blue Grass Airport (LEX), Lexington, KY
- Runway 2R-20L Reconstruction, Fairbanks International Airport (FAI), Fairbanks, AK
- Runway 5L/23R and Taxiway B Replacement, Columbus Regional Airport Authority, Columbus, OH
- Runway 10C Rehabilitation, Pittsburgh International Airport (PIA), Pittsburgh, PA
- North Runway 8L-26R Reconstruction, Sky Harbor International Airport (PHX), Phoenix, AZ
- Center Runway 7L-25R Reconstruction, Sky Harbor International Airport, Phoenix (PHX), AZ
- New Runway 5L-23R, Cleveland Hopkins International Airport (CLE), Cleveland, OH
- New Runway 11R-29L, Tucson Airport Authority, Tucson, AZ

# Tim Fish, PE

**Project Principal**

Tim brings impressive experience in airport planning and design to his assignments, along with firsthand airfield construction experience. He is very active in the aviation community, previously serving a two-year term as Secretary for the Airport Consultants Council's Engineering Technical Committee. In this role, he assisted in facilitating and providing reviews of FAA AC's, and worked with other professionals to move forward key items that impact the aviation industry. His areas of expertise are contract management of large airport civil and vertical projects, contract management from planning, through design, and construction phases, work planning, staff development, subconsultant management, and construction administration.

*"I am excited to continue working with FXE to improve on of your most critical assets, your runway. HDR does not take for granted the trust you put into your consultant for this project to be successful and I commit to working with Cody to get the right resources dedicated to your project."*

**EDUCATION**
BS, Civil Engineering, University of Missouri, Columbia, 2004

**REGISTRATIONS**
Professional Engineer, Florida, No. 70617

**PROFESSIONAL MEMBERSHIPS**
Airport Consultants Council – Engineering Committee

Florida Airports Council

**INDUSTRY TENURE**
20 years
14 years serving FXE

## HOW WILL YOU CONTRIBUTE TO THE SUCCESS OF THIS WORK?

*My approach to quality is grounded in a philosophy that quality is built into the entire design and construction process and not just a "check the box" activity. I will deliver on this approach by relying on my experience in airfield design and planning, history managing on-call-style contracts, and previous construction experience. I have been responsible for contract management, subconsultant/contractor oversight, project scheduling, regulatory compliance, and permitting in these roles.*

*A complex project such as this requires a proactive QC plan that actively monitors all phases of design and bid packaging. I will use QC tools, such as Bluebeam Revu, to document, track, follow up, and resolve comments to deliver a superior product prior to audit.*

## WHAT QUALIFIES YOU TO BE IN THIS ROLE?

*I currently serve as program principal for your GEC contract. As a nationally recognized aviation infrastructure consultant, I match clients with the right professionals and resources to help the aviation industry prepare for the future by offering enhanced service, value and innovation. I have led airfield development programs for airports in Miami, New York, Charlotte, and Fort Lauderdale. With me as our Project Principal, there is no learning curve. I've served in this role for your before, so I understand the goals and expectations of FXE.*

## RELEVANT EXPERIENCE

- Pavement Rehabilitation of Runways 9/27 and 13/31 Pavement Maintenance Rehabilitation, FXE, Fort Lauderdale, FL
- Runway 4-22 Pavement Rehabilitation, LNA, Lake Worth, FL
- Runway 9R-27L Pavement Rehabilitation, F45, West Palm Beach, FL
- New Runway 11R-29L, Tucson Airport Authority, Tucson, AZ
- Runway 4-22 Rehabilitation, Blue Grass Airport, Lexington, KY
- Runway 28 Extension, Pompano Beach Airpark, Pompano Beach, FL
- • Runway Incursion Mitigation Taxiway H Extension, Miami Executive Airport, Miami, FL
- • Central Airfield Rehabilitation, Palm Beach International Airport, Palm Beach, FL

*"Airports face numerous challenges every day and it all comes down to how to accommodate air traffic growth in the most efficient yet safe and sustainable way. I am looking forward to using my aviation experience and knowledge from the owners' perspective to assist FXE with lessons learned especially with constructible design reviews that provide key milestones that strike a balance between driving the contractor and team to minimize operational impacts while delivering the project on-time and under budget."*

**EDUCATION**

AA, Architecture, Broward Community College, Davie, FL

BS, Civil Engineering Technology, Wentworth Institute of Technology, Boston, MA

MS, Civil/Environmental Engineering, Tufts University, Medford, MA

MPA, Florida Atlantic University, Fort Lauderdale FL

**REGISTRATIONS**

Professional Engineer, Florida, No. 59325

**INDUSTRY TENURE**

29 years
1 year serving FXE

# Marc Gambrill, PE, AAE

**FAA Liaison and Constructibility Lead**

As an accredited airport executive, Marc has a proven track record responsible for overseeing more than $1.6 billion of projects including the in-line baggage screening projects, rehabilitations of several runways, renovations of Terminals 1, 2, and 3, a new 5 gate Concourse A, and the construction of the new LEED Silver Maintenance Facility at Fort-Lauderdale-Hollywood International Airport and North Perry Airport. As a previous owner, he understands the challenges that airport leaders face on a daily basis, especially through the construction phase. As the director of capital projects/chief development officer, Marc has 15 years of experience leading the execution of the Airport Capital Improvement Program, FDOT/ FAA approval of the Fort Lauderdale-Hollywood International Airport Master Plan, capital and operating budget, implementation of the Noise Mitigation Program, architectural or engineering-related initiatives, as well as managing the capital needs of both FLL and HWO. He is an active participant in both the American Association of Airport Executives and the American Society of Civil Engineers.

### HOW WILL YOU CONTRIBUTE TO THE SUCCESS OF THIS WORK?

*I will coordinate with our Project Manager, Cody Parham, to partnering with FXE to make sure we provide the best solution for this project. I bring 15 years of aviation specific technical leadership and project management on major runway rehabilitation projects to verify we continue to deliver high-quality planning, design, and construction services for this project.*

### WHAT IS YOUR LEVEL OF INVOLVEMENT IN THIS WORK?

*In addition to being a strategic advisor, I will provide technical and constructability reviews throughout the design phase. It is good management practice to perform a complete constructability review as early as possible in the design phase to make sure review comments are incorporated into the design documents prior to bidding the project. By identifying and solving problems in the design phase, we reduce the quantity of remedial work, eliminate many change order issues, and decrease the magnitude of delay. In my role, I will review the biddability, buildability, construction staging, project schedule, project budget per phase, construction staffing requirements, project budget per phase, and construction budget, especially when evaluating long lead items and the impact to materials due to supply chain.*

### WHAT QUALIFIES YOU TO BE IN THIS ROLE?

*I have the experience in delivering more than $1.6 Billion of projects ranging from the in-line baggage screening projects, rehabilitations of several runways, renovations of Terminals 1, 2, and 3, and a new 5 gate Concourse A including the construction of the new LEED Silver Maintenance Facility at Fort-Lauderdale-Hollywood International Airport and North Perry Airport. As Chief Development Officer, I was responsible for leading the execution of the Airport Capital Improvement Program, FLL & HWO Master Plan, capital and operating budget, and Noise Mitigation Program, and the architectural or engineering-related initiatives, as well as managing the capital needs of both FLL and HWO.*

## RELEVANT EXPERIENCE

- Rehabilitation of North Runway Airfield Pavements, Fort Lauderdale/Hollywood International Airport (FLL), Fort Lauderdale, FL
- Runway 13-31 Rehabilitation, Fort Lauderdale/Hollywood International Airport (FLL), Fort Lauderdale, FL
- Rehabilitation of Runway 18L-36R, North Perry Airport (HWO), Pembroke Pines, FL
- Rehabilitation of Runway 10L-28R, North Perry Airport (HWO), Pembroke Pines, FL
- Runway 9L-27R and 18L-36R Rehabilitation Overlay, North Perry Airport (HWO), Pembroke Pines, FL

*"Having recently led a similar expedited runway rehabilitation at Blue Grass Airport, I am thrilled to be involved with another rehab that requires so much coordination/collaboration."*

**EDUCATION**
Bachelor of Engineering, Civil Engineering, University of Pittsburgh, 2005

**REGISTRATIONS**
Professional Engineer - Civil, KY, No. 35598

Professional Engineer - Civil, PA, No. PE078762

**INDUSTRY TENURE**
17 years

**HDR TENURE**
5 years

# Tim Ward, PE

**Quality Manager**

Tim has specialized in both managing the design on active airfields, as well as executing design continuously for the past 17 years. His experience at a wide range of airports has honed his ability to thoroughly evaluate available information and designs, determine if additional, specific information is required to meet the client's objectives, and quickly get to work. His experience in aviation engineering includes airport geometric designs, grading and drainage, pavement design, airfield lighting, airfield fueling, signage, marking, construction phasing, airport planning, construction plans and specifications, shop drawing and contractor submittal reviews, project bidding, cost estimates and budgeting, and field observation and inspection.

### HOW WILL YOU CONTRIBUTE TO THE SUCCESS OF THIS WORK?

*My recent experience as PM/CM for the 72-hour rehabilitation at Blue Grass Airport will provide a direct benefit to the FXE design team.*

### WHAT IS YOUR LEVEL OF INVOLVEMENT IN THIS WORK?

*My involvement will be as the gate keeper for all deliverables to FXE. If a submittal doesn't meet HDR's quality standards, FXE won't see it until it does.*

### WHAT QUALIFIES YOU TO BE IN THIS ROLE?

*During my 17 years of direct airfield rehabilitation experience, I have been involved with over 15 runway design projects.*

## RELEVANT EXPERIENCE

- Runway 5-23 Rehabilitation, Akron-Canton Regional Airport (CAK), North Canton, OH
- Runway 5 Extension, Akron-Canton Regional Airport (CAK), North Canton, OH
- Runway 1-19 Rehabilitation, Akron-Canton Regional Airport (CAK), North Canton, OH
- Runway 14-32 Rehabilitation, Pittsburgh International Airport (PIA), Pittsburgh, PA
- Runway 12-30 Rehabilitation, Offutt Air Force Base (OFF), Omaha, NE
- Runway 4-22, Blue Grass Airport (LEX), Lexington, KY

*"My experience with runway rehabilitation and reconstruction projects in Florida and across the country will allow me to proivide strong oversite for the design, project approach, and design team during the lifecycle of this project."*

**EDUCATION**
BS, Civil Engineering, Auburn University, 2008

**REGISTRATIONS**
Professional Engineer - Civil, FL, No. 77574

**INDUSTRY TENURE**
16 years

**HDR TENURE**
3 years

# Will Bowdoin, PE

**Civil Design**

William Bowdoin is an aviation engineer in Atkins' national aviation services division/Tampa, Florida office. He has 13 years of experience in airfield design pertaining to aprons, taxiways, and runways; stormwater and utility permitting; and construction observation services. His current general responsibilities with HDR include project management, planning, design, and supervision over production of engineering drawings. He also carries out specific assignments in preparing and assembling specifications. He performs engineering calculations, field observations of construction where appropriate, data acquisition and analysis, and prepares material for reports and permit applications. Additionally, he leads the AL-FL-MS Aviation Business Group that includes a total of 8 team members.

### HOW WILL YOU CONTRIBUTE TO THE SUCCESS OF THIS WORK?

*Based on my experience with runway rehabilitation and reconstruction projects in Florida and across the country, I will be able to give strong oversite for the design and project approach to allow that construction goes smoothly.*

### WHAT IS YOUR LEVEL OF INVOLVEMENT IN THIS WORK?

*As the lead civil designer, I will be highly involved during the life cycle of the project. I will provide close oversite of the design team to verify that all project criteria is accomplished.*

### WHAT QUALIFIES YOU TO BE IN THIS ROLE?

*I have been fortunate to have been designing airfield projects for approximately 15 years. Through my career I have garnered a strong technical foundation of FAA design criteria and construction that directly translate to successful projects from conception through completion of construction.*

## RELEVANT EXPERIENCE

- Runway 4-22 Rehabilitation, Blue Grass Airport (LEX), Lexington, KY
- Expansion of Runway 9R-27L, Fort Lauderdale-Hollywood International Airport (FLL), Fort Lauderdale, FL
- Rehabilitation and Strengthening of Runway 9-27, Lakeland Linder Regional Airport (LAL), Lakeland, FL
- Runway 27 Runway Protection Zone Clearing, Lakeland Linder Regional Airport (LAL), Lakeland, FL
- NVZR 12-0134 Repair Runway Clear Zone, MacDill Air Force Base, Tampa, FL
- Runway 9-24 Rehabilitation and Strengthening, Northeast Philadelphia Airport (PNE), Philadelphia, PA
- Civil On-Call Runway Rehabilitation Task, Palm Beach International Airport (PBI), Palm Beach, FL
- Central Airfield Design Improvements and Rehabilitation Program, Palm Beach International Airport (PBI), Palm Beach, FL
- Runway 14-32 and Taxiway A4 Rehabilitation, Sebring Regional Airport (SEF), Sebring, FL
- Runway 4-22 Rehabilitation, Winter Haven Municipal Airport (GIF), Winter Haven, FL

## Tom Bair, PE
Quality Reviewer - Civil Engineering

**FIRM:** HDR Engineering, Inc.
**EDUCATION:** BS, Civil Engineering, Youngstown State University, 2008
**REGISTRATION:** Professional Engineer, No. PE.85552 (OH)
**INDUSTRY EXPERIENCE:** 15 years

Tom has 15 years of aviation design experience on numerous airfield rehabilitation and development projects. He brings specialized design experience on numerous airfield projects including grading and drainage design, geometric analysis, and construction phasing for complex runway replacement programs. He has delivered airfield design for projects on medium and large hub airports, both domestic and international. Tom also brings multiple years of construction management experience overseeing large airfield rehabilitations.

**Industry Experience:**
- CAK, Rehabilitation of Taxiways D, E, K, and GA Apron, Canton, OH
- DFW, Southwest End-Around Taxiway, TX
- DUB, 10-28 Rehabilitation, Collinstown, Fingal, Ireland
- CMH, Runway 10L/28R Rehabilitation and Shoulder Improvements, Columbus, OH
- CMH, Runway 10R/28L Replacement, Columbus, OH
- ORD, Runway 10R-28L & Associated Taxiway, O'Hare Modernization Program, Chicago, IL
- PIT, 2010 Airfield Joint and Crack Seal, Pittsburgh, PA
- Port Authority of NY/NJ, LaGuardia Airport Rehabilitation of Taxiway B, AA, BB & Associated Taxiways
- RDU, Runway 5L/23R Replacement, Morrisville, NC

## Sagar Bethu, PE, PMP
Pavement Design

**FIRM:** HDR Engineering, Inc.
**EDUCATION:** BS, Civil Engineering, Osmania University College of Engineering, India, 2003; MS, Civil Engineering, Kansas State University, 2005
**REGISTRATION:** Professional Engineer, No. 0402050610 (VA); No. 24GE0513230 (NJ); No. 47018 (MD)
**INDUSTRY EXPERIENCE:** 19 years

Sagar Bethu, a licensed Professional Engineer and a certified Project Management Professional has over 14 years of professional experience in the field of infrastructure (airfields, roadways, bridge decks) evaluation, design, and project management. He has the unique experience of representing and managing projects both on behalf of the state agency (60+ projects for MDOTMaryland Aviation Administration) and consulting firms (50+ projects). Sagar's areas of expertise include project management, client relationships, forensic investigations, specification writing, pavement evaluation, pavement management, pavement design, and construction management.

**Industry Experience:**
- FLL Airport-Terminal 4 Remain Overnight (RON) Pavement and Drainage Study
- TMB, Runway Incursion Mitigation
- LEX, Runway 4-22 Rehabilitation and Runway Safety Area Determination
- City of Philadelphia, Department of Commerce, Division of Aviation-Pavement Management Program
- MDOT-Maryland Aviation Administration, Comprehensive On-Call Paving Contract, BWI Marshall and Martin State Airports

## Mike Beldowicz, PE
Resident Project Representative

**FIRM:** Quantum Electrical Engineering, Inc.
**EDUCATION:** BS, Civil Engineering, Embry Riddle Aeronautical University
**REGISTRATION:** Professional Engineer, No. 63849
**INDUSTRY EXPERIENCE:** 22 years

Michael Beldowicz brings 22 years of civil and electrical design, project management and construction administration experience on major air carrier and GA airport construction projects. This comprehensive knowledge applies to project coordination, constructability/plan reviews, value engineering and overall on-site project observation. His knowledge of civil and electrical design, project management and construction has delivered potential cost reductions from original estimates that has increased overall customer satisfaction. His experience with lighting systems, lighting control systems, emergency generation systems, FDOT roadway lighting systems, air carrier and general aviation airports terminal/concourse and airfield systems pays dividends for our clients.

**Industry Experience:**
- FXE, Signage Replacement Project, Fort Lauderdale, FL
- FXE, Runway Incursion Mitigation Project, Fort Lauderdale, FL
- FXE, Taxiway Foxtrot Relocation CA Services, Fort Lauderdale, FL
- FXE, Taxiway Foxtrot Relocation CA Services, Fort Lauderdale, FL
- FXE, Electrical Vault Improvements, Fort Lauderdale, FL
- FXE, Electrical Taxiway Foxtrot West Electrical Improvements, Fort Lauderdale, FL

## Amy Champagne-Baker, PE
NAVAIDS/Airside Lighting & Signage

**FIRM:** Quantum Electrical Engineering, Inc.
**EDUCATION:** BS, Electrical Engineering, Clarkson University, Potsdam, NY
**REGISTRATION:** Professional Engineer, No. 73735
**INDUSTRY EXPERIENCE:** 25 years

Amy Champagne-Baker is experienced in electrical design and construction management, with an extensive background completing various electrical engineering projects throughout the state of Florida. Amy has developed and implemented successful programs and projects that delivered cost reductions that lead to increased overall customer satisfaction. Her work in electrical design and construction management experience includes project management, installation observation, shop drawing submittal review, testing, startups and construction observation of high, medium and low voltage distribution systems. Amy's detailed experience extends into Solid Waste projects, FDOT roadways, air carrier and general aviation airports, parking and site lighting, interior and exterior lighting systems, fire alarm and security system infrastructure, camera systems, normal and stand by emergency generation systems and power.

**Industry Experience:**
- FXE, Runway Incursion Mitigation Holdbars, Fort Lauderdale, FL
- FXE, Signage Replacement, Fort Lauderdale, FL
- FXE, Taxiway G Rehabilitation, Fort Lauderdale, FL
- FXE, Taxiway H & Q Relocation, Fort Lauderdale, FL
- BCT, Taxiway Widening and Papi Replacement, Boca Raton, FL
- PMP, Runway 28 Extension and Related Work,Pompano, FL
- FLL, WP-304/305 Runway, Crossfield Taxiways & Holdpad Paving, Lighting and Signage, Fort Lauderdale, FL

## Morgan Chapman, EIT
Construction Scheduling

**FIRM:** HDR Engineering, Inc.
**EDUCATION:** BS, Civil Engineering, Mount Union College, 2018
**INDUSTRY EXPERIENCE:** 5 years

Morgan is an Engineer in Training who has worked on aviation projects for more than 4 years. Her work experience includes modeling and designing various airfield projects in AutoCAD Civil 3D, assisting in writing technical reports, and performing quantity take offs and cost-estimates.

**Industry Experience:**
- PIT, Explosive Detection System (EDS) Recap, Allegheny County Airport Authority, Pittsburgh, PA
- PIT, West Cargo Development Study, City of Philadelphia Aviation Division, Philadelphia, PA
- PIT, Terminal Modernization Program, Allegheny County Airport Authority, Pittsburgh, PA
- LCK, Runway 5R-23L Rehabilitation and MOS Improvements, Columbus Regional Airport Authority, Columbus, OH
- TUS, CMAR Design Services – Runway 12R-30L and Associated Taxiways, Tucson, AZ
- BOI Airport, Air Carrier Apron Joint Sealant and Spall Repair, Boise, ID
- CRAA, Taxiway C Relocation, Columbus, OH
- DCA, North Airfield Improvements and Airfield Geometric Improvements, Arlington, VA
- LEX, Runway 4-22 North EMAS, Lexington, KY

## Esther Chitsinde
NEPA Categorical Exclusion

**FIRM:** HDR Engineering, Inc.
**EDUCATION:** BS, Environmental Science, Texas Christian University; MS, Environmental Science, Texas Christian University (TCU)
**INDUSTRY EXPERIENCE:** 11 years

Esther Chitsinde is results-oriented planner and environmental scientist with more than 7 years of experience in project management, environmental planning and compliance, innovation, sustainability and digital transformation strategy development for transportation facilities and federal infrastructure projects. Esther led DFW's NEPA and Special Projects program responsible for securing federal approvals resulting in more than $450M in federal funding and more than $12M in direct cost savings over 5-years. Esther had prepared and secured federal approvals for more than 100 NEPA documents. She is an analytical thinker with strong decision-making, problem solving, communication and technical writing skills, as well as demonstrated proficiencies in business case development, research, Digital Transformation Strategy and Digital Twin development (both mobility and buildings). She is a team player with demonstrated success securing NEPA approvals and collaborating and fostering strong relationships with complex stakeholders and regulatory entities such as FAA, FHWA, FTA, USEPA, USACE, TxDOT, TCEQ, THC, TPWD, and NCTCOG.

**Industry Experience:**
- Environmental Impact Statement (EIS) for U.S 380, McKinney, TX
- EIS for I-35 Capital Express Central, TxDOT Austin, TX
- DART D2 Subway, NEPA Support
- DWF, Environmental Assessment (EA) for 19th Street Cargo Redevelopment Project, TX

## Wendy Cyriaks
Wildlife Mitigation

**FIRM:** Cyriacks Environmental Consulting, Inc.
**EDUCATION:** BS, Biology, University of Miami, 1983; MS, Marine Biology, Nova Southeastern University, 2004
**INDUSTRY EXPERIENCE:** 30+ years

Wendy Cyriacks has over 30 years' experience in environmental analysis and impact studies, permitting and NEPA documentation/Project Development & Environment studies. Wendy serves as Environmental Manager/Chief Scientist on large scale public sector environmental projects. She has coordinated extensively with permitting agencies and has been responsible for obtaining state, federal and local environmental permits on numerous public sector projects. She has managed and/or conducted natural resource studies including wetlands, marine benthic studies, threatened and endangered species, contamination assessments and environmental monitoring for construction projects. She has also developed mitigation and monitoring plans and conducted permit compliance reviews.

**Industry Experience:**
- Environmental Permitting, Wetland and Protected Species Evaluations & Mitigation, Design Services for SR 786/PGA Boulevard FDOT District 4, Palm Beach County, FL
- BRAA, Wildlife Surveys, Taxiway Widening and PAPI Replacement Project, Boca Raton, FL
- Wildlife and Wetland Assessments, Environmental Permitting, Palm Beach Airfield Design, PBC DOA, Palm Beach County, FL
- PBI, Florida Burrowing Owl Surveys, West Palm Beach, FL

## Chris Decker, PE
Paving Quality Assurance

**FIRM:** RDM International
**EDUCATION:** BS, Communications, Kaplan University
**REGISTRATION:** Professional Engineer, No. 70144
**INDUSTRY EXPERIENCE:** 38 years

Chris Decker has more than 29 years of experience in pavement design, materials testing, quality control/quality assurance, set-up, and operation of aggregate, concrete and asphalt plant sites, and construction management. Chris has supervised and provided airfield design and construction management services in accordance with the Unified Facilities Criteria (UFC) utilized by the United States Department of Defense; Federal Aviation Administration (FAA) Advisory Circular Criteria; and the International Civil Aviation Organization (ICAO) Aerodrome Design Manual Criteria. He serves as the Senior Vice President for RDM and a Senior Project Manager for airport and roadway projects. Over the past 10 years, he has successfully completed over 80 projects across the United States and abroad.

**Industry Experience:**
- CVG, Runway 9-27 Rehabilitation, Hebron, KY
- MHR, Runway 4L-22R and Runway 4R-22L Rehabilitation, Sacramento, CA
- DTW, Runway 3L-21R Reconstruction and New Centralized Deicing Facility (CDF) Construction, Detroit, MI
- LAX, Runway 6L-24R Surface Inspection, Los Angeles, CA

## Ian Denholm, PE
### Quality Reviewer - Civil Engineering

**FIRM:** HDR Engineering, Inc.
**EDUCATION:** BS, Electrical Engineering, Stevens Institute of Technology, 2006; MS, Systems Engineering, Stevens Institute of Technology, 2007
**REGISTRATION:** Professional Engineer, No. 39545 (MD); No. 44579 (LA); No. 018.0134791 (VT); No. 25844 (DE)
**INDUSTRY EXPERIENCE:** 16 years

Ian possesses 16 years of experience in electrical engineering, including inspection of tunnels and movable bridges. His electrical engineering experience includes power studies, loading studies, lighting design and photo metrics, cabling, conduit layouts and schedules, control panels, panel boards and Motor Control Center design, airport lighting for runways and approaches and taxiways, PLC programming and CAD, schematics, flow diagrams. Computer usage and programming include DOS, Qbasic, Visual Basic, AutoCAD, Microstation, Microsoft Office, PLC programming with custom graphic interfaces and various other engineering programs. NHI-certified Instructor for NHI 130110 Tunnel Safety Inspection Course. National Certified Tunnel Inspector (NCTI).

**Industry Experience:**
- BCAD, General Engineering Consultant, Broward County, FL
- CRAA, Runway 5R-23L Rehabilitation and Modifications of Standards Phase 2B, Columbus, OH
- PANYNJ, Airport On-Call, NY and NJ
- PHL, Division of Aviation, Civil On-Call Engineering Services, Philadelphia, PA

## Morgan Dickinson, PE, SI
### Construction Materials Testing

**FIRM:** Tierra South Florida, Inc. (TSFGeo)
**EDUCATION:** BS, Civil Engineering, University of Colorado, 1978; MS, Geotechnical Engineering, Northwestern University, 1980; PhD Candidate, Structural Engineering, Florida International University, studies ongoing
**REGISTRATION:** Professional Engineer, No. 37557
**INDUSTRY EXPERIENCE:** 44 years

Morgan Dickinson, PE, SI, has more than 44 years of experience and his background includes construction material testing, construction engineering and inspection, engineering management, geotechnical engineering, and threshold building inspection. He has provided construction engineering services for roadways, bridges, retaining walls, high-rise structures, earthen dams and impoundments, airports (both landside and airside), runways, and taxiways. Morgan provides QA/QC services on a variety of projects in both the private sector and in the public sector. He is responsible planning and management of field investigations, construction materials testing, and inspections.

**Industry Experience:**
- FXE, Installation and QC Testing Services for the New Traffic Control Tower, Fort Lauderdale, FL
- FLL, Quality Assurance Materials Testing, Broward County Aviation Department, Fort Lauderdale, FL
- PMP, Reconstruction of Taxiway Delta, Pompano Beach, FL
- BRAA, Reconstruction and Rehabilitation for Apron Construction, Boca Raton, FL

## Marc Fermanian, PE
### Resident Project Representative

**FIRM:** CRJ & Associates, Inc.
**EDUCATION:** BS, Civil Engineering, University of Massachusetts-Lowell; MS, Civil Engineering, University of South Florida
**REGISTRATION:** Professional Engineer, No. 52626
**INDUSTRY EXPERIENCE:** 29 years

Marc Fermanian has served as Program Manager for many transportation and land development projects. He is responsible for both large and small-scale designs and permitting for these projects. Marc is familiar with FAA and FDOT standard specifications for construction and has utilized these skills for his +29-year career as a licensed professional engineer. Marc has provided design and construction management efforts for: airports, ports/harbors, roadway projects, university campuses, and many miscellaneous civil site projects. Marc also has many years' experience serving as an Inspector and RPR, responsible for construction administration and overall project schedule control on multiple projects. In this position, Marc has coordinated and reviewed requests for further information and material invoices from the contractor, reviewed, prepared, and processed job estimates that included material and labor costs, recorded the progress of construction activities, verify Davis-Bacon employee wage rates, and participated in on-site inspections.

**Industry Experience:**
- FXE, Airfield Lighting Rehabilitation, Fort Lauderdale, FL
- MIA, Taxiway R, S, and T, Miami, FL
- MIA, Runway 9-27 Pavement Project, Miami, FL

## Jackie Hacker
### DBE/MBE Support

**FIRM:** HDR Engineering, Inc.
**EDUCATION:** BS, Communications, Kaplan University
**INDUSTRY EXPERIENCE:** 38 years

Jackie Hacker has more than 38 years of accomplished leadership experience in award-winning small business and supplier diversity programs, mentor-protégé programs, procurement, and contract administration. Jackie's industry experience includes small and diverse business advocacy and small and diverse business subcontracting program compliance on major architect and engineering, environmental, horizontal and vertical construction, design/build, superfund, and national emergency response operations contracts.

**Industry Experience:**
- Oversees $200M+ annual diverse supplier subcontracting
- Expertise in Federal, State, and local DBE/MBE/WBE/SBE Programs and Regulations
- Experience in Program compliance with 49 CFR Part 26, USDOT, FHWA, and State DBE Program Plans/guidance
- Developed the Part 26/DBE Program Plan for Jackson (MN) Municipal Airport in 2018 and continue to update/report on Program Plan on behalf of our Airport Client in FAA Civil Rights Connect System.
- Developed DBE Program Document FY19-21 for the City of Pella, Iowa Pella Municipal Airport
- Nationwide oversight of HDR's individual subcontracting plan compliance including lower-tier subcontractors plan compliance for state, local, federal funded, and federal contracts

## James Kappes, PE
NAVAIDS/Airside Lighting & Signage

**FIRM:** Quantum Electrical Engineering, Inc.
**EDUCATION:** BS, Electrical Engineering, Florida Atlantic University
**REGISTRATIONS:** Professional Engineer, No. 71499
**INDUSTRY EXPERIENCE:** 16 years

James Kappes is a Professional Engineer in electrical design and construction management, with an extensive background completing various electrical engineering projects throughout the State of Florida. James strives to be an innovator who excels in finding the elegant solution for difficult problems in the design and implementation of electrical systems. His work in electrical design and construction management experience includes project management, utility coordination, shop drawing submittal review, testing, startups and construction observation of medium and low voltage distribution systems. James's experience extends into electrical system studies, lighting systems, lighting control systems, fire alarm systems, emergency generation systems, FDOT roadway lighting systems, air carrier and general aviation airports terminal/concourse and airfield systems.

**Industry Experience:**
- FXE, Runway 31 Taxiway Bypass, Fort Lauderdale, FL
- FXE, Taxiway Foxtrot Relocation, Fort Lauderdale, FL
- FXE, Electrical Vault Improvements, Fort Lauderdale, FL
- BCT, Widen Taxiway F And P4 Connectors And Relocate Taxiway B & C, Boca Raton, FL
- BCT, Taxiway Widening And Papi Replacement, Boca Raton, FL

## Michael McMahon, ENV SP
Weather Forecasting

**FIRM:** HDR Engineering, Inc.
**EDUCATION:** BS, Meteorology, San Jose State University, 1985
**INDUSTRY EXPERIENCE:** 37 years

Mike McMahon has extensive experience, focusing on understanding and communicating the interactions of the land-water-atmosphere nexus. His projects and research include climate change impact analysis, quantification, adaptation, flood warning, monitoring, response and outreach, hydrologic and hydraulic (H&H), and GIS mapping for water system adaptation strategies. He has specific expertise in the communication of risk as it pertains to the social, environmental, and economic aspects of our ecosystems. He has an active role in the climate science community as part of the AWWA M71 panel for water infrastructure resilience, the Florida Climate Institute, the National Institute of Standards, and Technology Water Infrastructure Resilience Panel.

**Industry Experience:**
- Monroe County, FL Roads Vulnerability Analysis and Capital Plan, Monroe County, FL
- Ocean Reef, FL Community Climate Resilience and Adaptation Plan, Monroe County, FL
- City of Sarasota, Climate Vulnerability Assessment and Adaptation Plan, Sarasota, FL
- FDOT District 5, Resilience Primer, Central FL

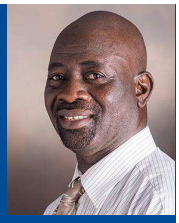
## Michael Mossey, PSM
Survey/SUE

**FIRM:** KEITH
**EDUCATION:** Maryville College, 1977
**REGISTRATION:** Professional Surveyor & Mapper, No. LS5660
**INDUSTRY EXPERIENCE:** 42 years

Michael Mossey has more than 40 years of surveying and mapping experience in South Florida. For the last 20 years, he has served as Project Manager for various government agencies, including the City of Fort Lauderdale Aviation Department and Broward County Aviation Department. The aviation projects Michael has managed range from airside construction to ALP/Airspace Analysis surveys. His knowledge of the FAA circulars and airport/airfield protocol is a valuable asset to the KEITH team.

**Industry Experience:**
- FXE-SEW-FLL, R4/2020110, Fort Lauderdale, FL
- FXE, Miscellaneous Survey Services, Fort Lauderdale, FL
- HWO, Runway 10R Safety Enhancements, Fort Lauderdale, FL
- FLL, T4 Apron Phase A-1 Taxiway Tango T8 Temporary Repairs, Fort Lauderdale, FL
- FLL, 2014 Obstruction Analysis/Survey 10R-28L, Fort Lauderdale, FL
- OPF, Bombardier Aircraft Service Center, Opa Locka, FL

## Simbo Odunaiya, PhD
NAVAID Siting and Modeling



**FIRM:** Ohio University Avionics Engineering Center
**EDUCATION:** BS, Electrical Engineering, Ohio University; MS, Electrical Engineering, Ohio University; Ph.D., Electrical and Computer Engineering Concentration on Electromagnetics, Communications, and Avionics; Ohio University
**INDUSTRY EXPERIENCE:** 30 years

Simbo Odunaiya holds a PhD in electrical engineering earned at Ohio University in 1995. He earned a B.S.E.E. with honors in 1984 and an M.S. in electrical engineering in 1986. Simbo is currently involved with the Avionics Engineering Center, Ohio University, in the development of performance prediction models for Instrument Landing System (ILS), VHF Omni-Range (VOR), and Radar. He is also presently involved in the investigation of the impact of Wind-Turbine Farms on the performance of Air Traffic Control Radar and VOR. His past work includes the development of a mathematical model for predicting the effects of buildings and other structures on the VOR and Air Traffic Control Radar. Before coming to Ohio University, Simbo was a senior engineer responsible for Radar development and maintenance at the Federal Civil Aviation Authority in Lagos, Nigeria. Simbo has consulted at many airports in the United States and also internationally. He has also taught many training classes in ILS/VOR Modeling and analysis. He is a member of the Institute of Electrical and Electronics Engineers and Tau Beta Pi professional society with over 100 Technical publications to his credit.

## Paul O'Rourke
### Stakeholder Outreach

**FIRM:** HDR Engineering, Inc.
**EDUCATION:** BA, Point Park University
**INDUSTRY EXPERIENCE:** 33 years

In addition to planning, executing, and evaluating brand, marketing and communications programs and campaigns for the Transportation industry, including HDR's Aviation Sector, Paul O'Rourke's decades of progressive strategic communications experience includes a body of award-winning work for clients, employers and partners around the globe. They include Home Depot, AIG, American General, and most recently Allegheny County Airport Authority as Vice President of Marketing for Pittsburgh International and Allegheny County Airports. Whether supporting general aviation airports through highlighting the resurgence of private air travel during the pandemic or helping airport teams in their efforts to discover, define and deliver on large, international airports' brand promises', HDR's global aviation sector's strategic communications practice helps its clients set their sights higher.

**Industry Experience:**
- PIT, Pittsburgh, PA
- AGC, West Mifflin, PA

## Bart Rohrer, PE, CFM
### Stormwater Management & Permitting

**FIRM:** HDR Engineering, Inc.
**EDUCATION:** BS, Civil and Environmental Engineering, Michigan State University (MSU), 1995
**REGISTRATION:** Professional Engineer, No. 59623
**INDUSTRY EXPERIENCE:** 27 years

Bart Rohrer has experience in the areas of project management, drainage design and stormwater management. He is currently responsible for project delivery, business development, and growth of the transportation drainage group. He has an extensive background consisting of leading and completing drainage activities including stormwater design and permitting, scope preparation, budgets and schedules, construction documents preparation, project reviews, quality control/assurance reviews, peer reviews, and site investigation. Bart is also is experienced with a variety of work types involving stormwater master plans, flood assessment, bridge hydraulics and scour evaluations, hydrologic and hydraulic studies.

**Industry Experience:**
- PIE, Stormwater Management Plan, Pinellas County, FL
- FDOT District 7, Stormwater Program Management Services, Various Counties, FL
- Florida Department of Community Affairs (DCA), C-4 Basin Study, Miami-Dade County, FL
- FDOT District 7, US 19 from North of County Road 95 to South of Pine Ridge Way South, Pinellas County, FL

## Megan Tatara, PE
### NAVAIDs

**FIRM:** HDR Engineering, Inc.
**EDUCATION:** BS, Electrical Engineering, Stevens Institute of Technology, 2010
**REGISTRATION:** Professional Engineer, No. 55182 (WA); No. 91536PE (OR); No. 24GE05216700 (NJ); No. 097679 (NY)
**INDUSTRY EXPERIENCE:** 15 years

Megan has experience in the design, inspection, and construction of electrical systems. This experience includes highway and railway systems in the forms of movable bridges and transfer bridges. Megan's experience also includes work for hydropower and water management systems in the form of locks and spillway gates, airport lighting design for runways and taxiways, and highway tunnels

**Industry Experience:**
- Joint Base Andrews, Rehabilitation of Taxiway Sierra, Prince George's County, MD
- Joint Base McGuire-Dix-Lakehurst, Airfield Survey of Maxfield Field, Lakehurst, Ocean County, NJ
- PANYNJ, Newark Liberty International Airport AOA Light Circuit Replacement, Newark, Essex County, NJ
- Port of Portland, Troutdale Airport Environmental Assessment, Troutdale, Multnomah County, OR
- United States Army Corps of Engineers-Mobile District, Correct Airfield Lighting Deficiencies, Soto Cano Air Base, Honduras
- United States Army Corps of Engineers-Savannah District, Fort Bragg Pope Field Airfield Electrical System Replacement, Fayetteville, Cumberland County, NC

## Kumar Vedula, PE
### Geotechnical Engineering

**FIRM:** Tierra South Florida, Inc. (TSFGeo)
**EDUCATION:** BE, Civil Engineering, Andhra University, 1992; MS, Geotechnical Engineering, University of Memphis, 1995
**REGISTRATION:** Professional Engineer, No. 54873
**INDUSTRY EXPERIENCE:** 26 years

Kumar Vedula, a Florida-Registered Professional Engineer, has more than 26 years of experience providing engineering services for a wide variety of geotechnical projects involving foundation design, slope stability analysis, WEAP analysis and interpreting PDA reports, excavation support, and construction inspection. His extensive experience includes foundation inspections (shallow and deep foundations), soil modification (dynamic compaction, stone columns), preloading, excavations, backfilling, and post-construction monitoring. Kumar has served as a principal inspector on numerous surcharging and settlement evaluations of organic-laden soil assignments. His project experience includes 300+ geotechnical engineering studies for various project types including parks, piers, shoreline stabilization, dredging, bridges, roadways, utilities, high-rise buildings, schools, and government facilities. Kumar has authored, and co-authored papers published in national and international publications.

**Industry Experience:**
- FXE, Airport Design Services for Maintenance Run-Up Area Expansion, Broward County, FL
- FXE, Taxiway Intersection Improvements, Broward County, FL
- FXE, Taxiway Charlie West Rehabilitation Project, Broward County, FL
- FXE, Taxiway Hotel and Quebec Modifications, Broward County, FL
- FXE, Taxiway Sierra Rehab, Broward County, FL

## Beida Xie, PE
### Pavement Testing & Evaluation

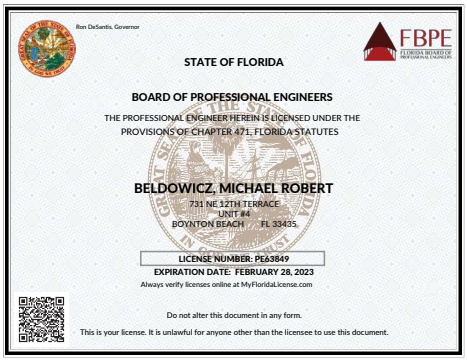
**FIRM:** RDM International
**EDUCATION:** MS, Civil Engineering, 2002, University of Illinois at Urbana-Champaign
**REGISTRATION:** Professional Engineer, No. 0402041987 (VA)
**INDUSTRY EXPERIENCE:** 33 years

Beida Xie has more than 30 years of experience in civil engineering and has specialized in all forms of pavement engineering. His engineering specialties include the design, evaluation, and maintenance of airport and roadway pavements. He has in-depth knowledge and experience applying current pavement design standards from the FAA, DoD, AASHTO, and related industries with proficient use of corresponding software packages. He has been involved and performed key roles for numerous pavement design and rehabilitation projects related to civil and military airports while employed with RDM. Beida's roles have included pavement design and evaluation, Non-Destructive Testing (NDT) data analysis, Pavement Classification Number (PCN) evaluation, pavement design traffic analysis, and geotechnical data evaluation.

**Industry Experience:**

- COU, Runway 2-20 Extension Pavement Design, Columbia, MO
- CVG, Runway 9-27 and Taxiways Rehabilitation, Hebron, KY
- RDU, Runway 5L-23R Preservation Pavement Design, Raleigh/Durham, NC
- DTW, Runway 3L-21R and Associated Taxiways Pavement Design, Detroit, MI
- SMF, Runway 17R-35L Rehabilitation, Sacramento, CA
- PIT, Runway 10C-28C Pavement Structural Evaluation, Pittsburgh, PA
- RSW, Airfield Pavement Rehabilitation, Fort Myers, FL

## Licenses


Ron DeSantis, Governor
STATE OF FLORIDA
FBPE
BOARD OF PROFESSIONAL ENGINEERS
THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES
BELDOWICZ, MICHAEL ROBERT
731 NE 12TH TERRACE
UNIT #4
BOYNTON BEACH FL 33435
LICENSE NUMBER: PE63849
EXPIRATION DATE: FEBRUARY 28, 2023
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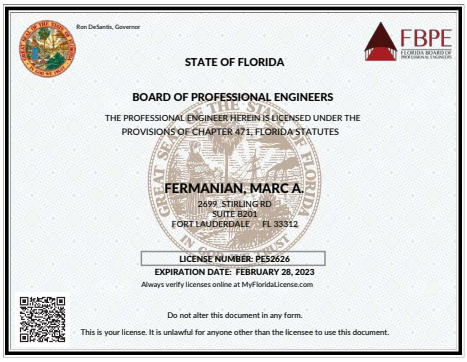
Ron DeSantis, Governor
STATE OF FLORIDA
FBPE
BOARD OF PROFESSIONAL ENGINEERS
THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES
FERMANIAN, MARC A.
2699 STIRLING RD
SUITE B201
FORT LAUDERDALE FL 33312
LICENSE NUMBER: PE52626
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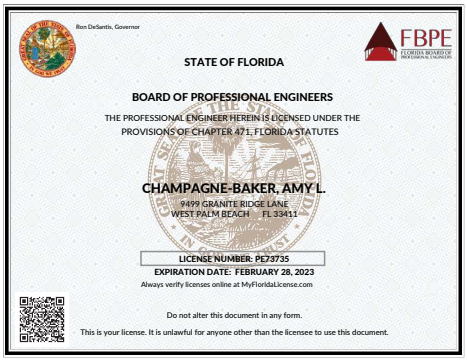
Ron DeSantis, Governor
STATE OF FLORIDA
FBPE
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THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES
CHAMPAGNE-BAKER, AMY L.
9499 GRANITE RIDGE LANE
WEST PALM BEACH FL 33411
LICENSE NUMBER: PE73735
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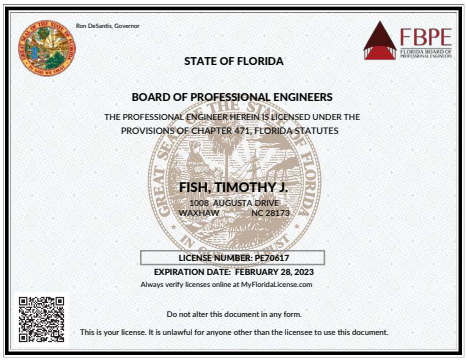
Ron DeSantis, Governor
STATE OF FLORIDA
FBPE
BOARD OF PROFESSIONAL ENGINEERS
THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES
FISH, TIMOTHY J.
1008 AUGUSTA DRIVE
WAXHAW NC 28173
LICENSE NUMBER: PE70617
EXPIRATION DATE: FEBRUARY 28, 2023
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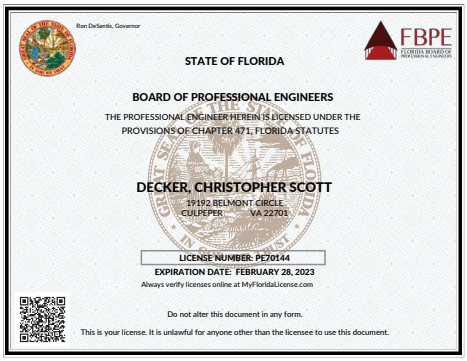
Ron DeSantis, Governor
STATE OF FLORIDA
FBPE
BOARD OF PROFESSIONAL ENGINEERS
THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES
DECKER, CHRISTOPHER SCOTT
19192 BELMONT CIRCLE
CULPEPER VA 22701
LICENSE NUMBER: PE70144
EXPIRATION DATE: FEBRUARY 28, 2023
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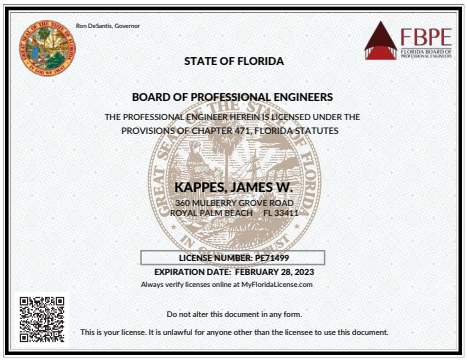
Ron DeSantis, Governor
STATE OF FLORIDA
FBPE
BOARD OF PROFESSIONAL ENGINEERS
THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES
KAPPES, JAMES W.
360 MULBERRY GROVE ROAD
ROYAL PALM BEACH FL 33411
LICENSE NUMBER: PE71499
EXPIRATION DATE: FEBRUARY 28, 2023
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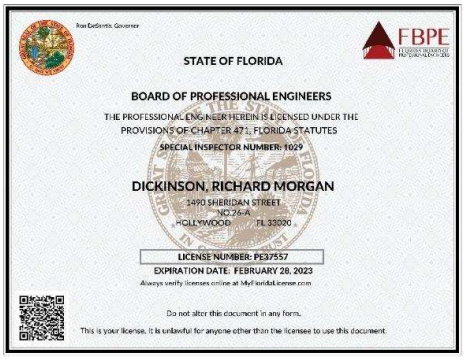
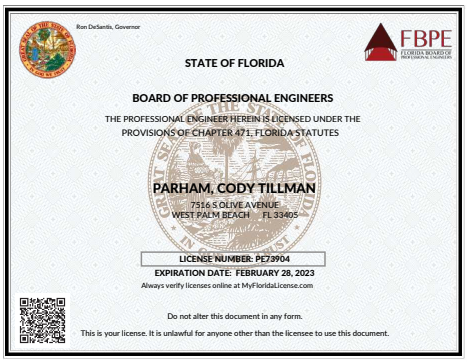
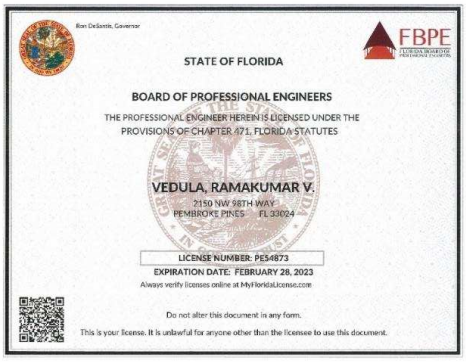
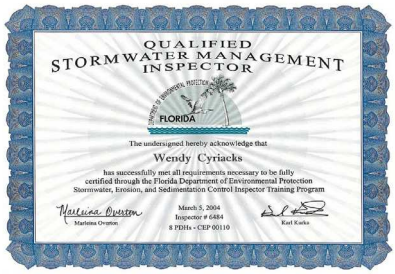
## Licenses (continued)



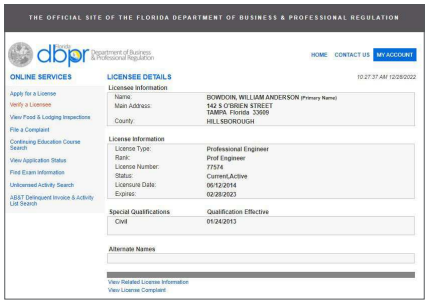



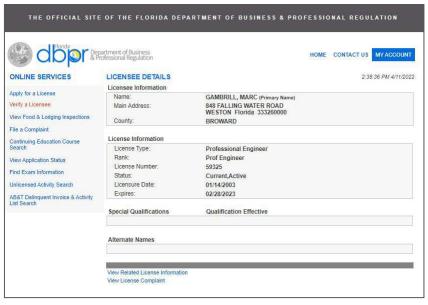



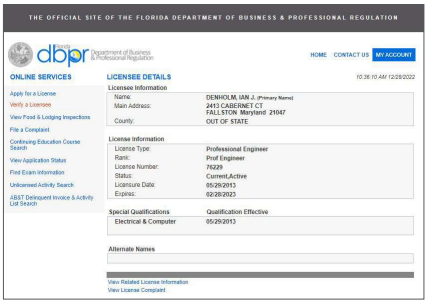


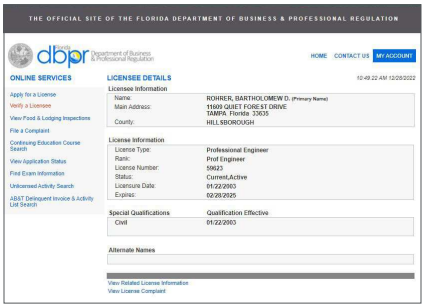



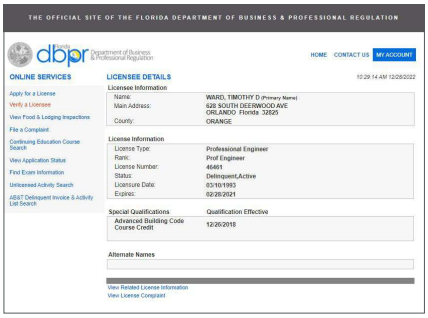


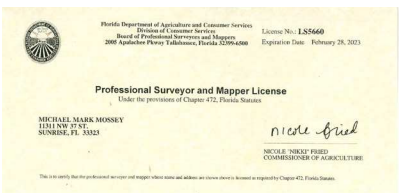


# 7 M/WBE PARTICIPATION


HDR's record of successful collaboration with D/MBE partners at FXE promotes seamless designs. Shown above: Runway Incursion Mitigation with Quantum Electrical Engineering and Tierra SF.

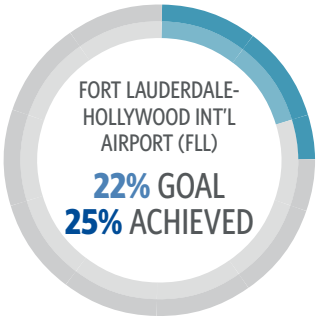
# M/WBE Participation

Effectively engaging and utilizing the local talent available in our community is crucial to the project's success. We have assembled a diverse group of subconsultants to add to our talented team, including M/W/D/SBE firms. Our team is focused on providing **21% participation from M/W/D/SBE accredited partners**, with special consideration for businesses based in the City of Fort Lauderdale, exceeding the historic average of 12% for the City.

## Previous Effort to Meet M/WBE Procurement Goals

**INNOVATIVE APPROACHES TO ENCOURAGING PARTICIPATION IN DESIGN PROCESS**

- Provide mentoring from HDR's National Small Business Program
  - Business planning
  - Federal and State required reporting
  - Invoicing and payment expediting




**Amy Champagne-Baker, President**
**Quantum Electrical Engineering**

*"I have worked as a subconsultant to HDR since 2014. HDR has been an invaluable partner when I established Quantum Electrical Engineering as a sole woman-owned, DBE, small business providing airfield electrical and construction administration services throughout Florida. HDR has treated Quantum as a true partner and is responsive to the needs of a small business and has supported our desire for growth in the aviation community. I'm proud to be a part of HDR's team to serve FXE."*

## Planned Effort to Meet M/WBE Procurement Goals

| Firm | Scope | M/WBE | DBE | % of Contract |
|---|---|---|---|---|
| Cyriaks Environmental Consulting Service, Inc. | Wildlife Mitigation | Yes | Yes | 3% |
| CRJ & Associates, Inc. | Construction Inspection | Yes | Yes | 4% |
| Quantum Electrical Engineering, Inc. | Electrical Engineering | Yes | Yes | 8% |
| Tierra South Florida, Inc. | Geotechnical and CEI | Yes | Yes | 6% |
| **SUM** | | | | **21%** |

We share your goal of creating opportunities for these companies. **By working together**, we bring the **right talent** to your project to develop the **right solution**.

**RECOGNITION FOR DIVERSITY OUTREACH PROGRAMS**

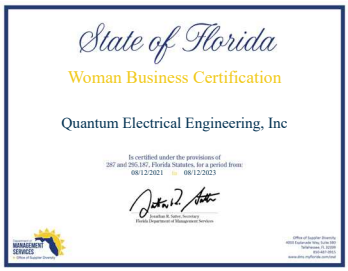
- *2018 National Large Business Award for "Outstanding Small & Socioeconomic Business Utilization & Mentoring"*
- *2015 "Outstanding" Rating for HDR's Subcontracting Program from the Small Business Administration (SBA)*

## Certifications


State of Florida
Minority Business Certification
CRJ & Associates, Inc.


State of Florida
Woman Business Certification
Cyriacks Environmental Consulting Services


State of Florida
Minority Business Certification
Tierra South Florida, Inc.


State of Florida
Woman Business Certification
Quantum Electrical Engineering, Inc


BROWARD COUNTY FLORIDA
OFFICE OF ECONOMIC AND SMALL BUSINESS DEVELOPMENT
Governmental Center Annex
115 S. Andrews Avenue, Room A680 • Fort Lauderdale, Florida 33301 • 954-357-6400

June 14, 2022

Mr. Marc A. Fernandez
**CRJ & ASSOCIATES, INC.**
2699 Stirling Road, Suite B-201
Fort Lauderdale, Florida 33312

Dear Mr. Fernandez:

The Broward County Office of Economic and Small Business Development (OESBD) is pleased to announce that your firm's **County Business Enterprise (CBE)** and **Small Business Enterprise (SBE)** certifications have been renewed.

Your firm's certifications are continuing from your anniversary date but are contingent upon the firm verifying its eligibility annually through this office. You will be notified in advance of your obligation to continue eligibility in a timely fashion. However, the responsibility to ensure continued certification is yours. Failure to document your firm's continued eligibility for the CBE and SBE programs within **thirty (30) days** from your anniversary may result in the expiration of your firm's certifications. Should you continue to be interested in certification after it has expired, you will need to submit a new application, and all required supporting documentation for review.

To review current Broward County Government bid opportunities, visit: www.broward.org/Purchasing and click on "Current Solicitations and Results." Also, from this website, you can log into your firm's profile in BidSync to ensure you have added all appropriate classification codes. Bid opportunities over $3,500 will be advertised to vendors via e-mail and according to classification codes, so please ensure that both the Purchasing Division and OESBD are apprised of your current e-mail address.

Your primary certification group is: **Architecture/Engineering Services.** This is also how your listing in our directory will read. You may access your firm's listing by visiting the Office of Economic and Small Business Development Directory, located on the internet at: www.broward.org/EconDev and click on "Certified Firm Directories."

Your firm may compete for, and perform work on Broward County projects in the following areas:

**NAICS CODE: 541330, 541620**

We look forward to working with you to achieve greater opportunities for your business through county procurement.

Sincerely,

Sandy-Michael McDonald, Director
Office of Economic and Small Business Development

**Cert Agency: BC-CBE SBE**
**ANNIVERSARY DATE: May 25th**


BROWARD COUNTY FLORIDA
OFFICE OF ECONOMIC AND SMALL BUSINESS DEVELOPMENT
Governmental Center Annex
115 S. Andrews Avenue, Room A680 • Fort Lauderdale, Florida 33301 • 954-357-6400

November 16, 2022

Ms. Amy L. Champagne-Baker
**QUANTUM ELECTRICAL ENGINEERING, INC.**
8571 N. University Drive, Suite 101
Coral Springs, Florida 33067

Dear Ms. Champagne-Baker:

The Broward County Office of Economic and Small Business Development (OESBD) is pleased to announce that your firm's **County Business Enterprise (CBE)** and **Small Business Enterprise (SBE)** certifications have been renewed.

Your firm's certifications are continuing from your anniversary date but are contingent upon the firm verifying its eligibility annually through this office. You will be notified in advance of your obligation to continue eligibility in a timely fashion. However, the responsibility to ensure continued certification is yours. Failure to document your firm's continued eligibility for the CBE and SBE programs within **thirty (30) days** from your anniversary may result in the expiration of your firm's certifications. Should you continue to be interested in certification after it has expired, you will need to submit a new application, and all required supporting documentation for review.

To review current Broward County Government bid opportunities, visit: www.broward.org/Purchasing and click on "Current Solicitations and Results." Also, from this website, you can log into your firm's profile in BidSync to ensure you have added all appropriate classification codes. Bid opportunities over $3,500 will be advertised to vendors via e-mail and according to classification codes, so please ensure that both the Purchasing Division and OESBD are apprised of your current e-mail address.

Your primary certification group is: **Architecture and Engineering Services.** This is also how your listing in our directory will read. You may access your firm's listing by visiting the Office of Economic and Small Business Development Directory, located on the internet at: www.broward.org/EconDev and click on "Certified Firm Directories."

Your firm may compete for, and perform work on Broward County projects in the following area:

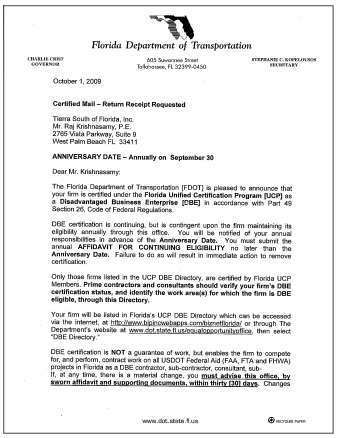
**NAICS CODE:** 541330

We look forward to working with you to achieve greater opportunities for your business through county procurement.

Sincerely,

Sandy-Michael McDonald, Director
Office of Economic and Small Business Development

**Cert Agency: BC-CBE SBE**
**ANNIVERSARY DATE: NOVEMBER 27TH**


Florida Department of Transportation
CHARLIE CRIST GOVERNOR
605 Suwannee Street Tallahassee, FL 32399-0450
STEPHANIE C. KOPELOUSOS SECRETARY

October 1, 2009

**Certified Mail – Return Receipt Requested**

Tierra South of Florida, Inc.
Mr. Raj Krishnasamy, P.E.
2795 Vista Parkway, Suite 9
West Palm Beach FL 33411

**ANNIVERSARY DATE – Annually on September 30**

Dear Mr. Krishnasamy:

The Florida Department of Transportation [FDOT] is pleased to announce that your firm is certified under the **Florida Unified Certification Program [UCP]** as a **Disadvantaged Business Enterprise [DBE]** in accordance with Part 49 Section 26, Code of Federal Regulations.

DBE certification is continuing, but is contingent upon the firm maintaining its eligibility annually through this office. You will be notified of your annual responsibilities in advance of the **Anniversary Date.** You must submit the annual **AFFIDAVIT FOR CONTINUING ELIGIBILITY** no later than the **Anniversary Date.** Failure to do so will result in immediate action to remove certification.

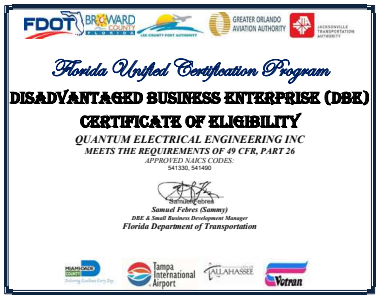
Only those firms listed in the UCP DBE Directory, are certified by Florida UCP Members. **Prime contractors and consultants should verify your firm's DBE certification status, and identify the work area(s) for which the firm is DBE eligible, through this Directory.**

Your firm will be listed in Florida's UCP DBE Directory which can be accessed via the Internet, at http://www.bipincnowebapps.com/bisnetflorida/ or through The Department's website at www.dot.state.fl.us/equalopportunityoffice, then select "DBE Directory."

DBE certification is **NOT** a guarantee of work, but enables the firm to compete for, and perform, contract work on all USDOT Federal Aid (FAA, FTA and FHWA) projects in Florida as a DBE contractor, sub-contractor, consultant, sub-. If, at any time, there is a material change, you **must advise this office, by sworn affidavit and supporting documents, within thirty (30) days.** Changes

www.dot.state.fl.us


Disadvantaged Business Enterprise
Certificate of Eligibility
Granted to
CRJ & Associates Inc
It has been determined that the firm listed above has met the federal requirements in accordance with the Code of Federal Regulations (49 CFR Part 26) and is thereby eligible to participate in the Disadvantaged Business Enterprise Program in the State of Florida.
NAICS CODES:
541330 541340
Issue Date: October 16, 2013
VICTORIA F. SMITH
Disadvantaged Business Enterprise Certification Manager
Florida Department of Transportation


FDOT BROWARD COUNTY GREATER ORLANDO AVIATION AUTHORITY
Florida Unified Certification Program
DISADVANTAGED BUSINESS ENTERPRISE (DBE)
CERTIFICATE OF ELIGIBILITY
QUANTUM ELECTRICAL ENGINEERING INC
MEETS THE REQUIREMENTS OF 49 CFR, PART 26
APPROVED NAICS CODES:
541330, 541480
Samuel Febres (Sammy)
DBE & Small Business Development Manager
Florida Department of Transportation
MIAMI-DADE COUNTY Tampa International Airport TALLAHASSEE Veteran

# 8 SUBCONSULTANTS

# Sub-consultants

## Our Teaming Partners Bring Relevant Experience to the Program

For the Rehabilitation of Runway 9-27, we've built a team to provide local service backed by national expertise. Bringing decades of local knowledge and experience, our team offers the depth of resources necessary to accomplish your goals for this important project. HDR is fully committed to supporting the City and delivering services in a way that benefits the local economy through locally retained revenue, while also engaging the necessary expertise for success. As you will see, we have endeavored to maximize local M/W/DBE participation throughout the contract. By enhancing our teams through these partnerships, we can help strengthen the local engineering community, increase capacity and foster strong professional relationships with other local firms.

### CRJ & Associates, Inc.

**Team Role:**

- Construction inspection

**Value Add:**

- Provides vehicles with radios and proper airfield driving insurance
- Staff can drive airside and communicate with Air Traffic Control
- Unmatched airfield construction inspection experience in South Florida

**Teaming History with HDR:**

- MDAD Civil GEC
- FXE GEC

CRJ & Associates, Inc. provides professional consulting services such as: project coordination and planning, civil engineering design, environmental engineering/permitting, water and sewer design, roadway engineering, stormwater design/modeling, and construction inspection services for projects. CRJ believes that a good design team must remain in communication with the client focusing towards the common goal of achieving design solutions that are functional, efficient, and cost effective. Repeat customers have always been a goal for CRJ; remaining punctual, creative, and disciplined are common factors with the team from CRJ.

Civil Engineering Design and Construction Engineering Inspection services have been our core professional skill-set since the Company's inception. CRJ's Construction Management style has been complemented by several of our Clients; our approach is simply not to observe the contractors' work – but to assist when questions/issues arise in the field and provide concise and reasonable solutions that assist all stakeholders.

### Cyriacks Environmental Consulting Service, Inc.

**Team Role:**

- Wildlife inspection and mitigation

**Value Add:**

- Understands rapidly changing regulatory landscape for gopher tortoises and burrowing owls
- Understands airfield construction impacts on protected species

**Teaming History with HDR:**

- FXE GEC

Cyriacks Environmental Consulting Service, Inc. (CECOS) was formed in 2003 to provide public and private sector clients a wide range of environmental and ecological consulting services including environmental permitting, environmental monitoring and permit compliance, the investigation and analysis of impacts to terrestrial, wetland and coastal marine resources in tropical and subtropical environments, threatened and endangered species surveys, and NEPA documentation. We specialize in providing these services to public sector clients and have obtained numerous environmental permits and prepared NEPA documentation associated with infrastructure projects (i.e., airports, roads, bridges, developments). We have provided wildlife surveys, permitting and wetland delineation for airport construction projects and assisted in planning future airport projects (runway expansions, taxiway improvements, for example) through preparation of documentation such as Biological and Environmental Assessments. We have also been involved in several Design-Build projects and understand the importance of obtaining permits in an expeditious manner and performing planning studies that facilitate future improvements' design.

## KEITH

**Team Role:**

- Survey and subsurface utility engineering

**Value Add:**

- Provides vehicles with radios and proper airfield driving insurance
- Staff can drive airside and communicate with Air Traffic Control
- Unmatched survey database and experience at FXE

**Teaming History with HDR:**

- FXE GEC

For more than six decades, KEITH has been providing design solutions throughout the State of Florida, the Caribbean, and beyond. Our firm was built on the basic principle of serving as an advocate for the communities in which we build, we live, and we give back to. As a trans-disciplinary firm, KEITH provides creative solutions to each project and the communities in which they serve. The firm provides resilient and sustainable design solutions for municipal agencies, private clients, and the Florida Department of Transportation.

Our team's aviation experience extends across Florida and beyond. The KEITH team has tremendous experience working at the most prestigious airport facilities and we bring those skills and experience to this all-important project.

KEITH has the luxury of providing a multi-disciplinary team that offers civil engineering, geospatial services, planning, transportation, traffic, landscape architecture, construction administration, project management, and will provide these services to you, completely in-house. As a mid-size close-knit firm of over 180 professionals, KEITH has offices in Pompano Beach (HQ), Fort Lauderdale, Miami, West Palm Beach, and Orlando. Through our work, we create the stage for everyday moments; expected and unexpected. Our holistic development solutions carefully blend technical expertise with creative problem-solving; a right-and left-brained approach, or what we call Engineering Inspired Design.

## Ohio University Airport

**Team Role:**

- NAVAID Siting and Modeling

**Value Add:**

- National thought leaders in NAVAIDs

The Ohio University Avionics Engineering Center specializes in the research, development, and evaluation of electronic navigational, communication, and surveillance systems. Established in 1963 by the late Richard McFarland, the center was created to support a unique combination of theoreticians, subject matter experts and technical specialists who could address navigational issues encountered in air transportation and supply immediate, practical solutions. The Center has 11 full time employees, 3 part time employees, 7 Faculty Associates and 26 student interns.

Because of our unique services and impressive track record, the Avionics Engineering Center has been awarded contracts totaling more than $135 million from sponsors like the Federal Aviation Administration (FAA), the National Aeronautics and Space Administration (NASA), and the U.S. Department of Defense, as well as from state and foreign governments and private industry.

Our mission at the Avionics Engineering Center is to improve the safety and reliability of air transportation by developing technology for navigation, guidance, communication, control, and surveillance. We also provide a premier education and training opportunities to future avionics professionals who will advance the frontiers of aviation electronics. Through our affiliation with the School of Electrical Engineering and Computer Science in the Fritz J. and Dolores H. Russ College of Engineering and Technology, both undergraduate and graduate students have the opportunity to see their coursework come to life outside the classroom under the guidance of our expert faculty, research engineers and technologists.

## Quantum Electrical Engineering, Inc.

**Team Role:**

- Electrical engineering

**Value Add:**

- Staff have over a decade of experience designing and administering construction of electrical improvements at FXE
- Provides continuous design and construction services

**Teaming History with HDR:**

- PBCDOA Civil GEC
- FXE GEC

Quantum Electrical Engineering, Inc. is a full-service, women-owned professional engineering consulting firm located in West Palm Beach and Coral Springs, Florida. At Quantum Electrical Engineering, we value our clients' needs for safe, reliable, and operationally efficient designs by creating cost-effective engineering solutions delivered in a responsive, dynamic, and efficient way. Since our firm is built on this understanding, we have developed trusted, long-lasting relationships by conducting business with integrity, honesty, hard work, and accountability in a collaborative, solution-oriented environment.

We provide full-spectrum electrical design services along with construction services to our clients and specialize in the design of electrical systems for Airports including passenger terminals, airfield lighting, and FAA approach systems and have worked extensively throughout the state of Florida. In addition to aviation, Quantum also provides industrial design services for municipalities, utilities and the transportation sectors. Including interior and exterior lighting systems, fire alarm and security systems, camera systems, normal and stand by emergency generation systems and power, roadway, parking and site lighting.

Quantum staff has extensive experience in electrical design and construction management experience including project management, shop drawing submittal review, testing, startups and construction observation of high, medium and low voltage distribution systems.

## RDM International, Inc.

**Team Role:**

- Pavement evaluation and testing/pavement construction quality assurance inspection

**Value Add:**

- Provides vehicles with radios and proper airfield driving insurance
- Staff can drive airside and communicate with Air Traffic Control
- Led training for pavement quality assurance for industry org, Airport Consultants Council

**Teaming History with HDR:**

- LEX Runway 4-22 Rehabilitation

RDM International, Inc. (RDM) is a Small Disadvantaged Business (SBE) Civil Engineering with the U.S. Small Business Administration and certified as a minority-owned business enterprise (MBE) specializes in airfield engineering for civilian and military airports, roadways, military installations, and seaports. Included within RDM's offering of professional services: civil engineering, pavement evaluation and design, pavement management systems, airfield design, aviation planning, forensic testing and analysis, construction management (Certified Project Management Professional employees on staff), UAS/Drone photo documentation, GIS/IT services and much more. Since 1987, RDM has successfully completed over 700 projects in 44 states and other locations including the Caribbean, Asia, South America, and the Middle East.

To supplement our airfield evaluation and design processes, RDM possesses test equipment to measure various airfield pavement design input parameters. This equipment includes Heavy Falling Weight Deflectometers (HWDs), MK2 GripTester for Continuous Friction Measuring Inspection (CFMI), Simco Core drill, GPS/GIS mobile devices to inspect pavement condition, and Ground Penetrating Radar (GPR) with up to 2.7GHz Horn Antenna for high-speed and localized subsurface Investigation.

## Tierra South Florida, Inc. (TSFGeo)

**Team Role:**

- Geotechnical investigation/construction materials quality assurance testing

**Value Add:**

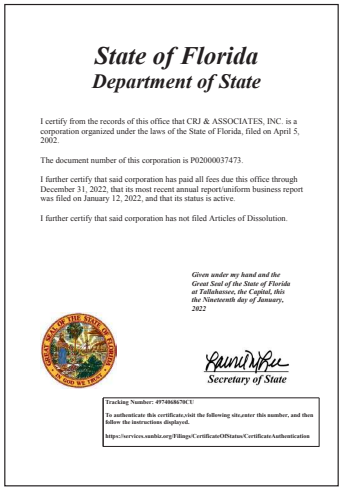
- Provides vehicles with radios and proper airfield driving insurance
- Field staff with airfield operations experience
- Unmatched airfield geotechnical experience in South Florida

**Teaming History with HDR:**

- PBCDOA Civil GEC
- FXE GEC

Tierra South Florida, Inc. (TSFGeo) is a full-service consulting Geotechnical Engineering, Construction Materials Testing, and Inspections firm with capabilities to provide test borings, engineering analyses and reports, AutoCAD and MicroStation plan sheets, laboratory soils testing, and construction engineering inspection services. TSFGeo's professional team has been working together since 2000 and is committed to providing quality, responsive service, establishing a reputation for sound approaches and professional competence in a wide range of technically demanding areas. TSFGeo's services also include Threshold/Special Inspection and roofing inspection services. TSFGeo is a certified Disadvantaged Business Enterprise (DBE) with the Florida Department of Transportation and a certified Minority Business Enterprise (MBE) with the State of Florida's Office of Supplier Diversity. Additionally, TSFGeo is a certified Small Business Enterprise (SBE) with the WPB, SFWMD, and Pinellas County. TSFGeo's main office is in West Palm Beach, Florida with branch offices in Miami Lakes, Tampa, and Orlando, Florida.

# Licenses



State of Florida
Department of State

I certify from the records of this office that CRJ & ASSOCIATES, INC. is a corporation organized under the laws of the State of Florida, filed on April 5, 2002.

The document number of this corporation is P02000037473.

I further certify that said corporation has paid all fees due this office through December 31, 2022, that its most recent annual report/uniform business report was filed on January 12, 2022, and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

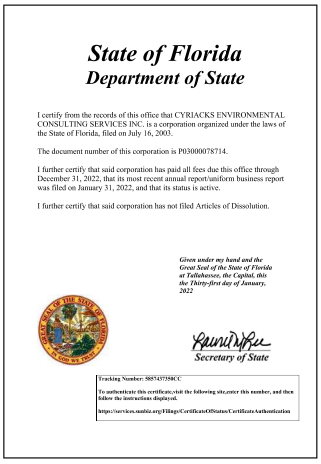
Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Nineteenth day of January, 2022

Secretary of State

Tracking Number: 4974868678CU

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

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



State of Florida
Department of State

I certify from the records of this office that CYRIACKS ENVIRONMENTAL CONSULTING SERVICES INC. is a corporation organized under the laws of the State of Florida, filed on July 16, 2003.

The document number of this corporation is P03000078714.

I further certify that said corporation has paid all fees due this office through December 31, 2022, that its most recent annual report/uniform business report was filed on January 31, 2022, and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

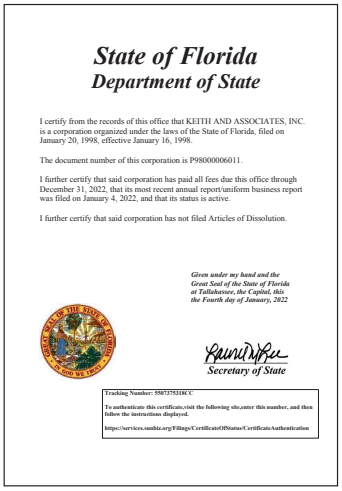
Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Thirty-first day of January, 2022

Secretary of State

Tracking Number: 5057437598CC

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

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



State of Florida
Department of State

I certify from the records of this office that KEITH AND ASSOCIATES, INC. is a corporation organized under the laws of the State of Florida, filed on January 20, 1998, effective January 16, 1998.

The document number of this corporation is P98000006011.

I further certify that said corporation has paid all fees due this office through December 31, 2022, that its most recent annual report/uniform business report was filed on January 4, 2022, and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Fourth day of January, 2022

Secretary of State

Tracking Number: 5507375318CC

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

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

State of Florida
Department of State

I certify from the records of this office that QUANTUM ELECTRICAL ENGINEERING, INC. is a corporation organized under the laws of the State of Florida, filed on May 6, 2014.

The document number of this corporation is P14000040467.

I further certify that said corporation has paid all fees due this office through December 31, 2022, that its most recent annual report/uniform business report was filed on January 14, 2022, and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

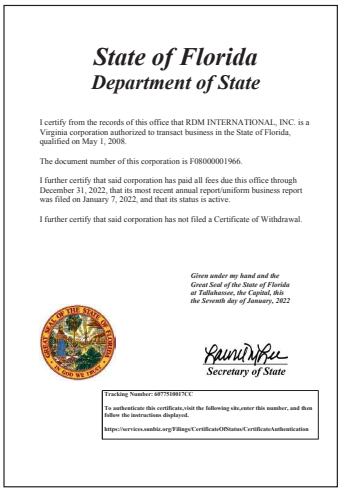
Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Fourteenth day of January, 2022

Secretary of State

Tracking Number: 6588568029CC

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

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



State of Florida
Department of State

I certify from the records of this office that RDM INTERNATIONAL, INC. is a Virginia corporation authorized to transact business in the State of Florida, qualified on May 1, 2008.

The document number of this corporation is F08000001966.

I further certify that said corporation has paid all fees due this office through December 31, 2022, that its most recent annual report/uniform business report was filed on January 7, 2022, and that its status is active.

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

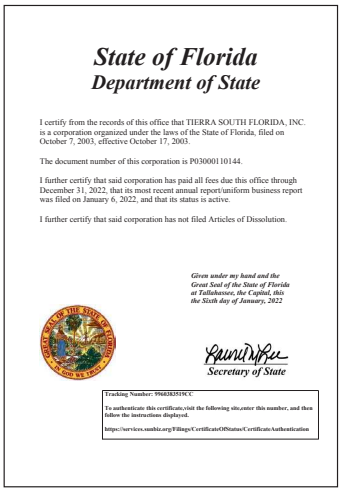
Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Seventh day of January, 2022

Secretary of State

Tracking Number: 6077510017CC

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

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



State of Florida
Department of State

I certify from the records of this office that TIERRA SOUTH FLORIDA, INC. is a corporation organized under the laws of the State of Florida, filed on October 7, 2003, effective October 17, 2003.

The document number of this corporation is P03000110144.

I further certify that said corporation has paid all fees due this office through December 31, 2022, that its most recent annual report/uniform business report was filed on January 6, 2022, and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

Given under my hand and the Great Seal of the State of Florida at Tallahassee, the Capital, this the Sixth day of January, 2022

Secretary of State

Tracking Number: 9960382059CC

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

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

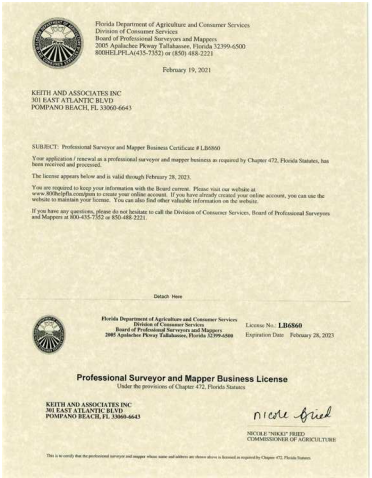
RICK SCOTT, GOVERNOR
JONATHAN ZACHEM, SECRETARY
dbpr

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF PROFESSIONAL ENGINEERS
THE ENGINEERING BUSINESS HEREIN IS AUTHORIZED UNDER THE PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

CRJ & ASSOCIATES, INC.
2699 STIRLING ROAD
SUITE B201
FT. LAUDERDALE FL 33312

LICENSE NUMBER: CA8245
EXPIRATION DATE: FEBRUARY 28, 2021
Always verify licenses online at MyFloridaLicense.com

Do not alter this document in any form.
This is your license. It is unlawful for anyone other than the licensee to use this document.



Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkwy Tallahassee, Florida 32399-6500
REBELPFLA(435-7352) or (850) 488-2221

February 19, 2021

KEITH AND ASSOCIATES INC
301 EAST ATLANTIC BLVD
POMPANO BEACH, FL 33060-6643

SUBJECT: Professional Surveyor and Mapper Business Certificate # LB6860

Your application / renewal as a professional surveyor and mapper business as required by Chapter 472, Florida Statutes, has been received and processed.

The license appears below and is valid through February 28, 2023.

You are required to keep your information with the Board current. Please visit our website at www.800myfpla.com/pros to create your online account. If you have already created your online account, you can use the website to maintain your license. You can also find other valuable information on the website.

If you have any questions, please do not hesitate to call the Division of Consumer Services, Board of Professional Surveyors and Mappers at 800-435-7352 or 850 488 2221.

Detach Here

Florida Department of Agriculture and Consumer Services
Division of Consumer Services
Board of Professional Surveyors and Mappers
2005 Apalachee Pkwy Tallahassee, Florida 32399-6500

License No.: LB6860
Expiration Date: February 28, 2023

Professional Surveyor and Mapper Business License
Under the provisions of Chapter 472, Florida Statutes

KEITH AND ASSOCIATES INC
301 EAST ATLANTIC BLVD
POMPANO BEACH, FL 33060-6643

NICOLE "NIKKI" FRIED
COMMISSIONER OF AGRICULTURE

This is to certify that the professional surveyor and mapper whose name and address are shown above is licensed as required by Chapter 472, Florida Statutes

State of Florida
Board of Professional Engineers

Tierra South Florida, Inc.

dbpr Department of Business & Professional Regulation
DBPR ONLINE SERVICES

Registry #30086

License Menu
Select the function you wish to perform.
Press "Back" to return to the main menu.

License Issued To: RDM INTERNATIONAL, INC.
License Status: Current
Original License On: 11/20/2012 (mm/dd/yyyy)
Expires On:

Functions
Address Change
Retrieve This License From My Account

Back

# 9 REQUIRED FORMS

# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 06/02/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

**PRODUCER**
Willis Towers Watson Midwest, Inc.
c/o 26 Century Blvd
P.O. Box 305191
Nashville, TN 372305191 USA

CONTACT NAME: Willis Towers Watson Certificate Center
PHONE (A/C, No, Ext): 1-877-945-7378 FAX (A/C, No): 1-888-467-2378
E-MAIL ADDRESS: certificates@willis.com

| INSURER(S) AFFORDING COVERAGE | NAIC # |
|---|---|
| INSURER A : Liberty Mutual Fire Insurance Company | 23035 |
| INSURER B : Ohio Casualty Insurance Company | 24074 |
| INSURER C : Liberty Insurance Corporation | 42404 |
| INSURER D : | |
| INSURER E : | |
| INSURER F : | |

**INSURED**
HDR Engineering, Inc.
1917 South 67th Street
Omaha, NE 68106

**COVERAGES** **CERTIFICATE NUMBER:** W24977699 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | ADDL INSD | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS | |
|---|---|---|---|---|---|---|---|---|
| A | X COMMERCIAL GENERAL LIABILITY<br>CLAIMS-MADE X OCCUR<br>X Contractual Liability<br>GEN'L AGGREGATE LIMIT APPLIES PER:<br>POLICY X PRO-JECT X LOC<br>OTHER: | | | TB2-641-444950-032 | 06/01/2022 | 06/01/2023 | EACH OCCURRENCE<br>DAMAGE TO RENTED PREMISES (Ea occurrence)<br>MED EXP (Any one person)<br>PERSONAL & ADV INJURY<br>GENERAL AGGREGATE<br>PRODUCTS - COMP/OP AGG | $ 2,000,000<br>$ 1,000,000<br>$ 10,000<br>$ 2,000,000<br>$ 4,000,000<br>$ 4,000,000 |
| A | AUTOMOBILE LIABILITY<br>X ANY AUTO<br>OWNED AUTOS ONLY<br>HIRED AUTOS ONLY<br>SCHEDULED AUTOS<br>NON-OWNED AUTOS ONLY | | | AS2-641-444950-042 | 06/01/2022 | 06/01/2023 | COMBINED SINGLE LIMIT (Ea accident)<br>BODILY INJURY (Per person)<br>BODILY INJURY (Per accident)<br>PROPERTY DAMAGE (Per accident) | $ 2,000,000<br>$<br>$<br>$ |
| B | UMBRELLA LIAB X OCCUR<br>X EXCESS LIAB CLAIMS-MADE<br>DED X RETENTION $ 0 | | | EUO (23) 57919363 | 06/01/2022 | 06/01/2023 | EACH OCCURRENCE<br>AGGREGATE | $ 5,000,000<br>$ 5,000,000 |
| C | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY<br>ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N: No<br>If yes, describe under DESCRIPTION OF OPERATIONS below | N/A | | WA7-64D-444950-012 | 06/01/2022 | 06/01/2023 | X PER STATUTE OTH-ER<br>E.L. EACH ACCIDENT<br>E.L. DISEASE - EA EMPLOYEE<br>E.L. DISEASE - POLICY LIMIT | $ 1,000,000<br>$ 1,000,000<br>$ 1,000,000 |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

**CERTIFICATE HOLDER**
Sample

**CANCELLATION**
SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE



ACORD 25 (2016/03) The ACORD name and logo are registered marks of ACORD

SR ID: 22658058 BATCH: 2547319

**NON-COLLUSION STATEMENT:**

By signing this offer, the vendor/contractor certifies that this offer is made independently and *free* from collusion. Vendor shall disclose below any City of Fort Lauderdale, FL officer or employee, or any relative of any such officer or employee who is an officer or director of, or has a material interest in, the vendor's business, who is in a position to influence this procurement.

Any City of Fort Lauderdale, FL officer or employee who has any input into the writing of specifications or requirements, solicitation of offers, decision to award, evaluation of offers, or any other activity pertinent to this procurement is presumed, for purposes hereof, to be in a position to influence this procurement.

For purposes hereof, a person has a material interest if they directly or indirectly own more than 5 percent of the total assets or capital stock of any business entity, or if they otherwise stand to personally gain if the contract is awarded to this vendor.

In accordance with City of Fort Lauderdale, FL Policy and Standards Manual, 6.10.8.3,

> 3.3. City employees may not contract with the City through any corporation or business entity in which they or their immediate family members hold a controlling financial interest (e.g. ownership of five (5) percent or more).
>
> 3.4. Immediate family members (spouse, parents and children) are also prohibited from contracting with the City subject to the same general rules.

**Failure of a vendor to disclose any relationship described herein shall be reason for debarment in accordance with the provisions of the City Procurement Code.**

| NAME | RELATIONSHIPS |
|---|---|
| N/A | |

**In the event the vendor does not indicate any names, the City shall interpret this to mean that the vendor has indicated that no such relationships exist.**

Authorized Signature

Vice President, HDR Engineering, Inc.
Title

Katie E. Duty, PE, ENV SP
Name (Printed)

December 19, 2022
Date

## CONTRACTOR'S CERTIFICATE OF COMPLIANCE WITH NON-DISCRIMINATION PROVISIONS OF THE CONTRACT

The completed and signed form should be returned with the Contractor's submittal. If not provided with submittal, the Contractor must submit within three business days of City's request. Contractor may be deemed non-responsive for failure to fully comply within stated timeframes.

Pursuant to the City Ordinance Sec. 2-187(c), bidders must certify compliance with the Non-Discrimination provision of the ordinance.

The Contractor shall not, in any of his/her/its activities, including employment, discriminate against any individual on the basis of race, color, national origin, religion, creed, sex, disability, sexual orientation, gender, gender identity, gender expression, or marital status.

1. The Contractor certifies and represents that he/she/it will comply with Section 2-187, Code of Ordinances of the City of Fort Lauderdale, Florida, as amended by Ordinance C-18-33 (collectively, "Section 2-187").
2. The failure of the Contractor to comply with Section 2-187 shall be deemed to be a material breach of this Agreement, entitling the City to pursue any remedy stated below or any remedy provided under applicable law.
3. The City may terminate this Agreement if the Contractor fails to comply with Section 2-187.
4. The City may retain all monies due or to become due until the Contractor complies with Section 2-187.
5. The Contractor may be subject to debarment or suspension proceedings. Such proceedings will be consistent with the procedures in section 2-183 of the Code of Ordinances of the City of Fort Lauderdale, Florida.

Katie E. Duty

Katie E. Duty, PE, ENV SP, Vice President, HDR Engineering, Inc.
Print Name and Title

Authorized Signature

December 19, 2022
Date

## E-VERIFY AFFIRMATION STATEMENT

RFP/Bid /Contract No: 12740-636

Project Description: Consultant Services for FXE Airport Runway 9-27 Pavement Rehabilitation

Contractor/Proposer/Bidder acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of,

(a) all persons employed by Contractor/Proposer/Bidder to perform employment duties within Florida during the term of the Contract, and,
(b) all persons (including subcontractors/vendors) assigned by Contractor/Proposer/Bidder to perform work pursuant to the Contract.

The Contractor/Proposer/Bidder acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the Contract is a condition of the Contract.

Contractor/Proposer/ Bidder Company Name: HDR Engineering, Inc.

Authorized Company Person's Signature: 

Authorized Company Person's Title: Katie E. Duty, PE, ENV SP, Vice President

Date: December 19, 2022

## BID/PROPOSAL CERTIFICATION

**Please Note:** It is the sole responsibility of the bidder to ensure that his bid is submitted electronically through www.BidSync.com prior to the bid opening date and time listed. Paper bid submittals will not be accepted. All fields below must be completed. If the field does not apply to you, please note N/A in that field.

If you are a foreign corporation, you may be required to obtain a certificate of authority from the department of state, in accordance with Florida Statute §607.1501 (visit http://www.dos.state.fl.us/).

Company: (Legal Registration) HDR Engineering, Inc. EIN (Optional): 47-0680568

Address: 3250 West Commercial Blvd., Suite 100

City: Fort Lauderdale, FL State: FL Zip: 33309-3459

Telephone No.: (954) 233-4914 FAX No.: (954) 233-4953 Email: katie.duty@hdrinc.com

Delivery: Calendar days after receipt of Purchase Order **(section 1.02 of General Conditions)**:

Total Bid Discount **(section 1.05 of General Conditions)**:

Check box if your firm qualifies for MBE / SBE / WBE **(section 1.09 of General Conditions)**:

ADDENDUM ACKNOWLEDGEMENT - Proposer acknowledges that the following addenda have been received and are included in the proposal:

| Addendum No. | Date Issued | Addendum No. | Date Issued | Addendum No. | Date Issued |
|---|---|---|---|---|---|
| 1 | 1/4/2023 | | | | |
| 2 | 1/20/2023 | | | | |

VARIANCES: If you take exception or have variances to any term, condition, specification, scope of service, or requirement in this competitive solicitation you must specify such exception or variance in the space provided below or reference in the space provided below all variances contained on other pages within your response. Additional pages may be attached if necessary. No exceptions or variances will be deemed to be part of the response submitted unless such is listed and contained in the space provided below. The City does not, by virtue of submitting a variance, necessarily accept any variances. If no statement is contained in the below space, it is hereby implied that your response is in full compliance with this competitive solicitation. If you do not have variances, simply mark N/A. **You must also click the "Take Exception" button.**

See attached

The below signatory hereby agrees to furnish the following article(s) or services at the price(s) and terms stated subject to all instructions, conditions, specifications addenda, legal advertisement, and conditions contained in the bid/proposal.

I have read all attachments including the specifications and fully understand what is required. By submitting this signed proposal, I will accept a contract if approved by the City and such acceptance covers all terms, conditions, and specifications of this bid/proposal. The below signatory also hereby agrees, by virtue of submitting or attempting to submit a response, that in no event shall the City's liability for respondent's direct, indirect, incidental, consequential, special or exemplary damages,

expenses, or lost profits arising out of this competitive solicitation process, including but not limited to public advertisement, bid conferences, site visits, evaluations, oral presentations, or award proceedings exceed the amount of Five Hundred Dollars ($500.00). This limitation shall not apply to claims arising under any provision of indemnification or the City's protest ordinance contained in this competitive solicitation.

Submitted by:

| | |
|---|---|
| Katie E. Duty, PE, ENV SP |  |
| Name (printed) | Signature |
| 12/19/2022 | Vice President |
| Date | Title |

Revised 4/28/2020

expenses, or lost profits arising out of this competitive solicitation process, including but not limited to public advertisement, bid conferences, site visits, evaluations, oral presentations, or award proceedings exceed the amount of Five Hundred Dollars ($500.00). This limitation shall not apply to claims arising under any provision of indemnification or the City's protest ordinance contained in this competitive solicitation.

Submitted by:

| | |
|---|---|
| Katie E. Duty, PE, ENV SP |  |
| Name (printed) | Signature |
| 12/19/2022 | Vice President |
| Date | Title |

Revised 4/28/2020

HDR Engineering, Inc. takes exception to Section 10.3 of the draft PSA provided for RFQ 12740-636 Consultant Services for FXE Airport Runway 9-27 and we wish to reserve our right to negotiate the at the time of award.

10.3 In the event that the lowest "best value" bid, as such term is used in the City of Fort Lauderdale Procurement Code, excluding any alternate bid items ("base bid"), exceeds the Estimated Construction Cost for a project by more than ten percent (10%), CONSULTANT shall explain, in writing, the reasons why the bids or proposals exceeded the ten percent (10%) factor following the analysis of all base bids. In such a circumstance, the CITY may at its sole discretion, exercise any one or more of the following options:

- CONSULTANT shall be required to amend ~~at the sole cost and expense of CONSULTANT~~, the Construction Drawings, Technical Specifications and Supplemental Conditions to enable the project to conform to a maximum of ten (10%) above the Estimated Construction Costs of the project, such amendments to be subject to the written final acceptance and approval of same by the CITY. To the extent any such redesign or corrections are made necessary due to causes within the Consultant's reasonable control such redesign or reduction shall be provided at no additional cost otherwise such redesigns or reductions shall be provided as an additional service;

- CONSULTANT shall be required to provide at the cost and expense of CONSULTANT re-bidding services and related items (including costs associated with regulatory review and approval of revised documents) as many times as requested by the CITY until the base bid of at least one "best value" bid falls within the factor of ten (10%) of the Estimated Construction Cost of the project. To the extent any such redesign or corrections are made necessary due to causes within the Consultant's reasonable control such redesign or reduction shall be provided at no additional cost otherwise such redesigns or reductions shall be provided as an additional service;

  - The CITY may approve an increase in the Estimated Construction Cost of the Project;
  - The CITY may reject all bids or proposals and may authorize re-bidding;
  - The CITY may if permitted, approve a renegotiation of the Project within a reasonable time;
  - The CITY may abandon the project and terminate CONSULTANT's work authorization and Services for the Project; or
  - The CITY may select as many deductive alternatives as may be necessary to bring the award within ten percent (10%) of the Estimated Construction Costs of the Project.

It is expressly understood and agreed that the redesigning services required to keep the Project within 10% of the Estimated Construction Cost shall not be considered additional services and CONSULTANT agrees that it shall not seek compensation from the CITY for such Services if such services are due to causes within the CONSULTANT's reasonable control.

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**CITY OF FORT LAUDERDALE GENERAL CONDITIONS**

These instructions and conditions are standard for all contracts for commodities or services issued through the City of Fort Lauderdale Procurement Services Division. The City may delete, supersede, or modify any of these standard instructions for a particular contract by indicating such change in the Invitation to Bid (ITB) Special Conditions, Technical Specifications, Instructions, Proposal Pages, Addenda, and Legal Advertisement. In this General Conditions document, Invitation to Bid (ITB), Request for Qualifications (RFQ), and Request for Proposal (RFP) are interchangeable.

**PART I BIDDER PROPOSAL PAGE(S) CONDITIONS:**

**1.01 BIDDER ADDRESS**: The City maintains automated vendor address lists that have been generated for each specific Commodity Class item through our bid issuing service, BidSync. Notices of Invitations to Bid (ITB'S) are sent by e-mail to the selection of bidders who have fully registered with BidSync or faxed (if applicable) to every vendor on those lists, who may then view the bid documents online. Bidders who have been informed of a bid's availability in any other manner are responsible for registering with BidSync in order to view the bid documents. There is no fee for doing so. If you wish bid notifications be provided to another e-mail address or fax, please contact BidSync. If you wish purchase orders sent to a different address, please so indicate in your bid response. If you wish payments sent to a different address, please so indicate on your invoice.

**1.02 DELIVERY:** Time will be of the essence for any orders placed as a result of this ITB. The City reserves the right to cancel any orders, or part thereof, without obligation if delivery is not made in accordance with the schedule specified by the Bidder and accepted by the City.

**1.03 PACKING SLIPS:** It will be the responsibility of the awarded Contractor, to attach all packing slips to the OUTSIDE of each shipment. Packing slips must provide a detailed description of what is to be received and reference the City of Fort Lauderdale purchase order number that is associated with the shipment. Failure to provide a detailed packing slip attached to the outside of shipment may result in refusal of shipment at Contractor's expense.

**1.04 PAYMENT TERMS AND CASH DISCOUNTS:** Payment terms, unless otherwise stated in this ITB, will be considered to be net 45 days after the date of satisfactory delivery at the place of acceptance and receipt of correct invoice at the office specified, whichever occurs last. Bidder may offer cash discounts for prompt payment but they will not be considered in determination of award. If a Bidder offers a discount, it is understood that the discount time will be computed from the date of satisfactory delivery, at the place of acceptance, and receipt of correct invoice, at the office specified, whichever occurs last**.**

**1.05 TOTAL BID DISCOUNT:** If Bidder offers a discount for award of all items listed in the bid, such discount shall be deducted from the total of the firm net unit prices bid and shall be considered in tabulation and award of bid**.**

**1.06 BIDS FIRM FOR ACCEPTANCE:** Bidder warrants, by virtue of bidding, that the bid and the prices quoted in the bid will be firm for acceptance by the City for a period of one hundred twenty (120) days from the date of bid opening unless otherwise stated in the ITB**.**

**1.07 VARIANCES:** For purposes of bid evaluation, Bidders must indicate any variances, no matter how slight, from ITB General Conditions, Special Conditions, Specifications or Addenda in the space provided in the ITB. No variations or exceptions by a Bidder will be considered or deemed a part of the bid submitted unless such variances or exceptions are listed in the bid and referenced in the space provided on the bidder proposal pages. If variances are not stated, or referenced as required, it will be assumed that the product or service fully complies with the City's terms, conditions, and specifications**.**

By receiving a bid, City does not necessarily accept any variances contained in the bid. All variances submitted are subject to review and approval by the City. If any bid contains material variances that, in the City's sole opinion, make that bid conditional in nature, the City reserves the right to reject the bid or part of the bid that is declared by the City as conditional.

**1.08 NO BIDS:** If you do not intend to bid please indicate the reason, such as insufficient time to respond, do not offer product or service, unable to meet specifications, schedule would not permit, or any other reason, in the space provided in this ITB. Failure to bid or return no bid comments prior to the bid due and opening date and time, indicated in this ITB, may result in your firm being deleted from our Bidder's registration list for the Commodity Class Item requested in this ITB.

**1.09 MINORITY AND WOMEN BUSINESS ENTERPRISE PARTICIPATION AND BUSINESS DEFINITIONS:** The City of Fort Lauderdale wants to increase the participation of Minority Business Enterprises (MBE), Women Business Enterprises (WBE), and Small Business Enterprises (SBE) in its procurement activities. If your firm qualifies in accordance with the below definitions, please indicate in the space provided in this ITB.

Minority Business Enterprise (MBE) "A Minority Business" is a business enterprise that is owned or controlled by one or more socially or economically disadvantaged persons. Such disadvantage may arise from cultural, racial, chronic economic circumstances or background or other similar cause. Such persons include, but are not limited to: Blacks, Hispanics, Asian Americans, and Native Americans.

The term "Minority Business Enterprise" means a business at least 51 percent of which is owned by minority group members or, in the case of a publicly owned business, at least 51 percent of the stock of which is owned by minority group members. For the purpose of the preceding sentence,

minority group members are citizens of the United States who include, but are not limited to: Blacks, Hispanics, Asian Americans, and Native Americans.

Women Business Enterprise (WBE) a "Women Owned or Controlled Business" is a business enterprise at least 51 percent of which is owned by females or, in the case of a publicly owned business, at least 51 percent of the stock of which is owned by females.

Small Business Enterprise (SBE) "Small Business" means a corporation, partnership, sole proprietorship, or other legal entity formed for the purpose of making a profit, which is independently owned and operated, has either fewer than 100 employees or less than $1,000,000 in annual gross receipts.

BLACK, which includes persons having origins in any of the Black racial groups of Africa.
WHITE, which includes persons whose origins are Anglo-Saxon and Europeans and persons of Indo-European decent including Pakistani and East Indian.
HISPANIC, which includes persons of Mexican, Puerto Rican, Cuban, Central and South American, or other Spanish culture or origin, regardless of race.
NATIVE AMERICAN, which includes persons whose origins are American Indians, Eskimos, Aleuts, or Native Hawaiians.
ASIAN AMERICAN, which includes persons having origin in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.

**1.10 MINORITY-WOMEN BUSINESS ENTERPRISE PARTICIPATION**

It is the desire of the City of Fort Lauderdale to increase the participation of minority (MBE) and women-owned (WBE) businesses in its contracting and procurement programs. While the City does not have any preference or set aside programs in place, it is committed to a policy of equitable participation for these firms. Proposers are requested to include in their proposals a narrative describing their past accomplishments and intended actions in this area. If proposers are considering minority or women owned enterprise participation in their proposal, those firms, and their specific duties have to be identified in the proposal. If a proposer is considered for award, he or she will be asked to meet with City staff so that the intended MBE/WBE participation can be formalized and included in the subsequent contract.

**1.11 SCRUTINIZED COMPANIES**

Subject to *Odebrecht Construction, Inc., v. Prasad*, 876 F.Supp.2d 1305 (S.D. Fla. 2012), *affirmed*, *Odebrecht Construction, Inc., v. Secretary, Florida Department of Transportation*, 715 F.3d 1268 (11th Cir. 2013), with regard to the "Cuba Amendment," the Contractor certifies that it is not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, and that it does not have business operations in Cuba or Syria, as provided in Section 287.135, Florida Statutes (2021), as may be amended or revised. The Contractor certifies that it is not on the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2021), as may be amended or revised, and that it is not engaged in a boycott of Israel. The City may terminate this Agreement at the City's option if the Contractor is found to have submitted a false certification as provided under subsection (5) of Section 287.135, Florida Statutes (2021), as may be amended or revised, or been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2021), as may be amended or revised, or is engaged in a boycott of Israel or has been engaged in business operations in Cuba or Syria, as defined in Section 287.135, Florida Statutes (2021), as may be amended or revised.

By submitting a proposal or response, the company, principals, or owners certify that it is not listed on the Scrutinized Companies with Activities in Sudan List or listed on the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or is engaged in business operations in Cuba or Syria.

**1.12 DEBARRED OR SUSPENDED BIDDERS OR PROPOSERS**

The bidder or proposer certifies, by submission of a response to this solicitation, that neither it nor its principals and subcontractors are presently debarred or suspended by any Federal department or agency.

**Part II DEFINITIONS/ORDER OF PRECEDENCE:**

**2.01 BIDDING DEFINITIONS** The City will use the following definitions in its general conditions, special conditions, technical specifications, instructions to bidders, addenda and any other document used in the bidding process:

INVITATION TO BID (ITB) The solicitation document used for soliciting competitive sealed bids for goods or services.
INVITATION TO NEGOTIATE (ITN) All solicitation documents, regardless of medium, whether attached to or incorporated by reference in solicitations for responses from firms that invite proposals from interested and qualified firms so the city may enter into negotiations with the firm(s) determined most capable of providing the required goods or services.
REQUEST FOR PROPOSALS (RFP) A solicitation method used for soliciting competitive sealed proposals to determine the best value among proposals for goods or services for which price may not be the prevailing factor in award of the contract, or the scope of work, specifications or contract terms and conditions may be difficult to define. Such solicitation will consider the qualifications of the proposers along with evaluation of each proposal using identified and generally weighted evaluation criteria. RFPs may include price criteria whenever feasible, at the discretion of the city.
REQUEST FOR QUALIFICATIONS (RFQ) A solicitation method used for requesting statements of qualifications in order to determine the most qualified proposer for professional services.
BID – a price and terms quote received in response to an ITB.
PROPOSAL – a proposal received in response to an RFP.
BIDDER – Person or firm submitting a Bid.
PROPOSER – Person or firm submitting a Proposal.
RESPONSIVE BIDDER – A firm who has submitted a bid, offer, quote, or response which conforms in all material respects to the competitive solicitation document and all of its requirements.
RESPONSIBLE BIDDER – A firm who is fully capable of meeting all requirements of the solicitation and subsequent contract. The respondent must possess the full capability, including financial and technical, ability, business judgment, experience, qualifications, facilities, equipment, integrity, capability, and reliability, in all respects to perform fully the contract requirements and assure good faith performance as determined by the city.
FIRST RANKED PROPOSER – That Proposer, responding to a City RFP, whose Proposal is deemed by the City, the most advantageous to the City after applying the evaluation criteria contained in the RFP.
SELLER – Successful Bidder or Proposer who is awarded a Purchase Order or Contract to provide goods or services to the City.
CONTRACTOR – Any firm having a contract with the city. Also referred to as a "Vendor".
CONTRACT – All types of agreements, including purchase orders, for procurement of supplies, services, and construction, regardless of what these agreements may be called.
CONSULTANT – A firm providing professional services for the city.

**2.02 SPECIAL CONDITIONS:** Any and all Special Conditions contained in this ITB that may be in variance or conflict with these General Conditions shall have precedence over these General Conditions. If no changes or deletions to General Conditions are made in the Special Conditions, then the General Conditions shall prevail in their entirety,

**PART III BIDDING AND AWARD PROCEDURES:**

**3.01 SUBMISSION AND RECEIPT OF BIDS:** To receive consideration, bids must be received prior to the bid opening date and time. Unless otherwise specified, Bidders should use the proposal forms provided by the City. These forms may be duplicated, but failure to use the forms may cause the bid to be rejected. Any erasures or corrections on the bid must be made in ink and initialed by Bidder in ink. All information submitted by the Bidder shall be printed, typewritten or filled in with pen and ink. Bids shall be signed in ink. Separate bids must be submitted for each ITB

issued by the City. Only send bids via facsimile transmission (FAX) if the ITB specifically states that bids sent via FAX will be considered. If such a statement is not included in the ITB, bids sent via FAX will be rejected. Bids will be publicly opened in the Procurement Office, or other designated area, in the presence of Bidders, the public, and City staff. Bidders and the public are invited and encouraged to attend bid openings. Bids will be tabulated and made available for review by Bidders and the public in accordance with applicable regulations.

**3.02 MODEL NUMBER CORRECTIONS:** If the model number for the make specified in this ITB is incorrect, or no longer available and replaced with an updated model with new specifications, the Bidder shall enter the correct model number on the bidder proposal page. In the case of an updated model with new specifications, Bidder shall provide adequate information to allow the City to determine if the model bid meets the City's requirements.



**3.03 PRICES QUOTED:** Deduct trade discounts, and quote firm net prices. Give both unit price and extended total. In the case of a discrepancy in computing the amount of the bid, the unit price quoted will govern. All prices quoted shall be F.O.B. destination, freight prepaid (Bidder pays and bears freight charges, Bidder owns goods in transit and files any claims), unless otherwise stated in Special Conditions. Each item must be bid separately. No attempt shall be made to tie any item or items contained in the ITB with any other business with the City.

**3.04 TAXES:** The City of Fort Lauderdale is exempt from Federal Excise and Florida Sales taxes on direct purchase of tangible property. Exemption **number for EIN is 59-6000319, and State Sales tax exemption number is 85-8013875578C-1.**

**3.05 WARRANTIES OF USAGE:** Any quantities listed in this ITB as estimated or projected are provided for tabulation and information purposes only. No warranty or guarantee of quantities is given or implied. It is understood that the Contractor will furnish the City's needs as they arise.

**3.06 APPROVED EQUAL:** When the technical specifications call for a brand name, manufacturer, make, model, or vendor catalog number with acceptance of APPROVED EQUAL, it shall be for the purpose of establishing a level of quality and features desired and acceptable to the City. In such cases, the City will be receptive to any unit that would be considered by qualified City personnel as an approved equal. In that the specified make and model represent a level of quality and features desired by the City, the Bidder must state clearly in the bid any variance from those specifications. It is the Bidder's responsibility to provide adequate information, in the bid, to enable the City to ensure that the bid meets the required criteria. If adequate information is not submitted with the bid, it may be rejected. The City will be the sole judge in determining if the item bid qualifies as an approved equal.

**3.07 MINIMUM AND MANDATORY TECHNICAL SPECIFICATIONS:** The technical specifications may include items that are considered minimum, mandatory, or required. If any Bidder is unable to meet or exceed these items, and feels that the technical specifications are overly restrictive, the bidder must notify the Procurement Services Division immediately. Such notification must be received by the Procurement Services Division prior to the deadline contained in the ITB, for questions of a material nature, or prior to five (5) days before bid due and open date, whichever occurs first. If no such notification is received prior to that deadline, the City will consider the technical specifications to be acceptable to all bidders.

**3.08 MISTAKES:** Bidders are cautioned to examine all terms, conditions, specifications, drawings, exhibits, addenda, delivery instructions and special conditions pertaining to the ITB. Failure of the Bidder to examine all pertinent documents shall not entitle the bidder to any relief from the conditions imposed in the contract.

**3.09 SAMPLES AND DEMONSTRATIONS:** Samples or inspection of product may be requested to determine suitability. Unless otherwise specified in Special Conditions, samples shall be requested after the date of bid opening, and if requested, should be received by the City within seven (7) working days of request. Samples, when requested, must be furnished free of expense to the City and if not used in testing or destroyed, will upon request of the Bidder, be returned within thirty (30) days of bid award at Bidder's expense. When required, the City may request full demonstrations of units prior to award. When such demonstrations are requested, the Bidder shall respond promptly and arrange a demonstration at a convenient location. Failure to provide samples or demonstrations as specified by the City may result in rejection of a bid.

**3.10 LIFE CYCLE COSTING**: If so specified in the ITB, the City may elect to evaluate equipment proposed on the basis of total cost of ownership. In using Life Cycle Costing, factors such as the following may be considered: estimated useful life, maintenance costs, cost of supplies, labor intensity, energy usage, environmental impact, and residual value. The City reserves the right to use those or other applicable criteria, in its sole opinion that will most accurately estimate total cost of use and ownership.

**3.11 BIDDING ITEMS WITH RECYCLED CONTENT:** In addressing environmental concerns, the City of Fort Lauderdale encourages Bidders to submit bids or alternate bids containing items with recycled content. When submitting bids containing items with recycled content, Bidder shall provide documentation adequate for the City to verify the recycled content. The City prefers packaging consisting of materials that are degradable or able to be recycled. When specifically stated in the ITB, the City may give preference to bids containing items manufactured with recycled material or packaging that is able to be recycled.

**3.12 USE OF OTHER GOVERNMENTAL CONTRACTS:** The City reserves the right to reject any part or all of any bids received and utilize other available governmental contracts, if such action is in its best interest**.**

**3.13 QUALIFICATIONS/INSPECTION:** Bids will only be considered from firms normally engaged in providing the types of commodities/services specified herein. The City reserves the right to inspect the Bidder's facilities, equipment, personnel, and organization at any time, or to take any other action necessary to determine Bidder's ability to perform. The Chief Procurement Officer reserves the right to reject bids where evidence or evaluation is determined to indicate inability to perform**.**

**3.14 BID SURETY:** If Special Conditions require a bid security, it shall be submitted in the amount stated. A bid security can be in the form of a bid bond or cashier's check. Bid security will be returned to the unsuccessful bidders as soon as practicable after opening of bids. Bid security will be returned to the successful bidder after acceptance of the performance bond, if required; acceptance of insurance coverage, if required; and full execution of contract documents, if required; or conditions as stated in Special Conditions**.**

**3.15 PUBLIC RECORDS/TRADE SECRETS/COPYRIGHT:** The Proposer's response to the RFP is a public record pursuant to Florida law, which is subject to disclosure by the City under the State of Florida Public Records Law, Florida Statutes Chapter 119.07 ("Public Records Law"). The City shall permit public access to all documents, papers, letters or other material submitted in connection with this RFP and the Contract to be executed for this RFP, subject to the provisions of Chapter 119.07 of the Florida Statutes.

Any language contained in the Proposer's response to the RFP purporting to require confidentiality of any portion of the Proposer's response to the RFP, except to the extent that certain information is in the City's opinion a Trade Secret pursuant to Florida law, shall be void. If a Proposer submits any documents or other information to the City which the Proposer claims is Trade Secret information and exempt from Florida Statutes Chapter 119.07 ("Public Records Laws"), the Proposer shall clearly designate that it is a Trade Secret and that it is asserting that the document or information is exempt. The Proposer must specifically identify the exemption being claimed under Florida Statutes 119.07. The City shall be the final arbiter of whether any information contained in the Proposer's response to the RFP constitutes a Trade Secret. The city's determination of whether an exemption applies shall be final, and the proposer agrees to defend, indemnify, and hold harmless the City and the City's officers, employees, and agents, against any loss or damages incurred by any person or entity as a result of the City's treatment of records as public records. In addition, the proposer agrees to defend, indemnify, and hold harmless the City and the City's officers, employees, and agents, against any loss or damages incurred by any person or entity as a result of the City's treatment of records as exempt from disclosure or confidential. Proposals bearing copyright symbols or otherwise purporting to be subject to copyright protection in full or in part may be rejected. The proposer authorizes the City to publish, copy, and reproduce any and all documents submitted to the City bearing copyright symbols or otherwise purporting to be subject to copyright protection.

EXCEPT FOR CLEARLY MARKED PORTIONS THAT ARE BONA FIDE TRADE SECRETS PURSUANT TO FLORIDA LAW, DO NOT MARK YOUR RESPONSE TO THE RFP AS PROPRIETARY OR CONFIDENTIAL. DO NOT MARK YOUR RESPONSE TO THE RFP OR ANY PART THEREOF AS COPYRIGHTED.



**3.16 PROHIBITION OF INTEREST:** No contract will be awarded to a bidding firm which has City elected officials, officers or employees affiliated with it, unless the bidding firm has fully complied with current Florida State Statutes and City Ordinances relating to this issue. Bidders must disclose any such affiliation. Failure to disclose any such affiliation will result in disqualification of the Bidder and removal of the Bidder from the City's bidder lists and prohibition from engaging in any business with the City**.**

**3.17 RESERVATIONS FOR AWARD AND REJECTION OF BIDS:** The City reserves the right to accept or reject any or all bids, part of bids, and to waive minor irregularities or variations to specifications contained in bids, and minor irregularities in the bidding process. The City also reserves the right to award the contract on a split order basis, lump sum basis, individual item basis, or such combination as shall best serve the interest of the City. The City reserves the right to make an award to the responsive and responsible bidder whose product or service meets the terms, conditions, and specifications of the ITB and whose bid is considered to best serve the City's interest. In determining the responsiveness of the offer and the responsibility of the Bidder, the following shall be considered when applicable: the ability, capacity and skill of the Bidder to perform as required; whether the Bidder can perform promptly, or within the time specified, without delay or interference; the character, integrity, reputation, judgment, experience and efficiency of the Bidder; the quality of past performance by the Bidder; the previous and existing compliance by the Bidder with related laws and ordinances; the sufficiency of the Bidder's financial resources; the availability, quality and adaptability of the Bidder's supplies or services to the required use; the ability of the Bidder to provide future maintenance, service or parts; the number and scope of conditions attached to the bid**.**

If the ITB provides for a contract trial period, the City reserves the right, in the event the selected bidder does not perform satisfactorily, to award a trial period to the next ranked bidder or to award a contract to the next ranked bidder, if that bidder has successfully provided services to the City in the past. This procedure to continue until a bidder is selected or the contract is re-bid, is at the sole option of the City.

**3.18 LEGAL REQUIREMENTS:** Applicable provisions of all federal, state, county laws, and local ordinances, rules and regulations, shall govern development, submittal and evaluation of all bids received in response hereto and shall govern any and all claims and disputes which may arise between person(s) submitting a bid response hereto and the City by and through its officers, employees and authorized representatives, or any other person, natural or otherwise; and lack of knowledge by any bidder shall not constitute a cognizable defense against the legal effect thereof**.**

**3.19 BID PROTEST PROCEDURE:** Any proposer or bidder who is not recommended for award of a contract and who alleges a failure by the City to follow the City's Procurement Ordinance or any applicable law may protest to the Procurement Division – Deputy Director of Finance, by

delivering a letter of protest within five (5) days after a Notice of Intent to award is posted on the City's website at the following link: https://www.fortlauderdale.gov/government/departments-a-h/finance/procurement-services/notices-of-intent-to-award

The complete protest ordinance may be found on the City's web site at the following: link: https://library.municode.com/fl/fort_lauderdale/codes/code_of_ordinances?nodeId=COOR_CH2AD_ARTVFI_DIV2PR_S2-182DIREPRAWINAW

**PART IV BONDS AND INSURANCE**

**4.01 PERFORMANCE BOND:** If a performance bond is required in Special Conditions, the Contractor shall, within fifteen (15) working days after notification of award, furnish to the City a Performance Bond, payable to the City of Fort Lauderdale, Florida, in the face amount specified in Special Conditions as surety for faithful performance under the terms and conditions of the contract. If the bond is on an annual coverage basis, renewal for each succeeding year shall be submitted to the City thirty (30) days prior to the termination date of the existing Performance Bond. The Performance Bond must be executed by a surety company of recognized standing, authorized to do business in the State of Florida and having a resident agent.

Acknowledgement and agreement is given by both parties that the amount herein set for the Performance Bond is not intended to be nor shall be deemed to be in the nature of liquidated damages nor is it intended to limit the liability of the Contractor to the City in the event of a material breach of this Agreement by the Contractor**.**

**4.02 INSURANCE:** The Contractor shall assume full responsibility and expense to obtain all necessary insurance as required by City or specified in Special Conditions**.**

The Contractor shall provide to the Procurement Services Division original certificates of coverage and receive notification of approval of those certificates by the City's Risk Manager prior to engaging in any activities under this contract. The Contractor's insurance is subject to the approval of the City's Risk Manager. The certificates must list the City as an ADDITIONAL INSURED for General Liability Insurance and shall have no less than thirty (30) days written notice of cancellation or material change. Further modification of the insurance requirements may be made at the sole discretion of the City's Risk Manager if circumstances change or adequate protection of the City is not presented. Bidder, by submitting the bid, agrees to abide by such modifications**.**

**PART V PURCHASE ORDER AND CONTRACT TERMS:**

**5.01 COMPLIANCE WITH SPECIFICATIONS, LATE DELIVERIES/PENALTIES:** Items offered may be tested for compliance with bid specifications. Items delivered which do not conform to bid specifications may be rejected and returned at Contractor's expense. Any violation resulting in contract termination for cause or delivery of items not conforming to specifications, or late delivery may also result in:

- Bidder's name being removed from the City's bidder's mailing list for a specified period and Bidder will not be recommended for any award during that period.
- All City Departments being advised to refrain from doing business with the Bidder.
- All other remedies in law or equity.

**5.02 ACCEPTANCE, CONDITION, AND PACKAGING:** The material delivered in response to ITB award shall remain the property of the Seller until a physical inspection is made and the material accepted to the satisfaction of the City. The material must comply fully with the terms of the ITB, be of the required quality, new, and the latest model. All containers shall be suitable for storage and shipment by common carrier, and all prices shall include standard commercial packaging. The City will not accept substitutes of any kind. Any substitutes or material not meeting specifications will be returned at the Bidder's expense. Payment will be made only after City receipt and acceptance of materials or services.

**5.03 SAFETY STANDARDS:** All manufactured items and fabricated assemblies shall comply with applicable requirements of the Occupation Safety and Health Act of 1970 as amended.

**5.04 ASBESTOS STATEMENT:** All material supplied must be 100% asbestos free. Bidder, by virtue of bidding, certifies that if awarded any portion of the ITB the bidder will supply only material or equipment that is 100% asbestos free.

**5.05 OTHER GOVERNMENTAL ENTITIES:** If the Bidder is awarded a contract as a result of this ITB, the bidder may, if the bidder has sufficient capacity or quantities available, provide to other governmental agencies, so requesting, the products or services awarded in accordance with the terms and conditions of the ITB and resulting contract. Prices shall be F.O.B. delivered to the requesting agency.



**5.06 VERBAL INSTRUCTIONS PROCEDURE:** No negotiations, decisions, or actions shall be initiated or executed by the Contractor as a result of any discussions with any City employee. Only those communications which are in writing from an authorized City representative may be considered. Only written communications from Contractors, which are assigned by a person designated as authorized to bind the Contractor, will be recognized by the City as duly authorized expressions on behalf of Contractors.

**5.07 INDEPENDENT CONTRACTOR:** The Contractor is an independent contractor under this Agreement. Personal services provided by the Proposer shall be by employees of the Contractor and subject to supervision by the Contractor, and not as officers, employees, or agents of the City. Personnel policies, tax responsibilities, social security, health insurance, employee benefits, procurement policies unless otherwise stated in this ITB, and other similar administrative procedures applicable to services rendered under this contract shall be those of the Contractor.

**5.08 INDEMNITY/HOLD HARMLESS AGREEMENT:** Contractor shall protect and defend at Contractor's expense, counsel being subject to the City's approval, and indemnify and hold harmless the City and the City's officers, employees, volunteers, and agents from and against any and all losses, penalties, fines, damages, settlements, judgments, claims, costs, charges, expenses, or liabilities, including any award of attorney fees and any award of costs, in connection with or arising directly or indirectly out of any act or omission by the Contractor or by any officer, employee, agent, invitee, subcontractor, or sublicensee of the Contractor. Without limiting the foregoing, any and all such claims, suits, or other actions relating to personal injury, death, damage to property, defects in materials or workmanship, actual or alleged violations of any applicable statute, ordinance, administrative order, rule or regulation, or decree of any court shall be included in the indemnity hereunder.

**5.09 TERMINATION FOR CAUSE:** If, through any cause, the Contractor shall fail to fulfill in a timely and proper manner its obligations under this Agreement, or if the Contractor shall violate any of the provisions of this Agreement, the City may upon written notice to the Contractor terminate the right of the Contractor to proceed under this Agreement, or with such part or parts of the Agreement as to which there has been default, and may hold the Contractor liable for any damages caused to the City by reason of such default and termination. In the event of such termination, any completed services performed by the Contractor under this Agreement shall, at the option of the City, become the City's property and the Contractor shall be entitled to receive equitable compensation for any work completed to the satisfaction of the City. The Contractor, however, shall not be relieved of liability to the City for damages sustained by the City by reason of any breach of the Agreement by the Contractor, and the City may withhold any payments to the Contractor for the purpose of setoff until such time as the amount of damages due to the City from the Contractor can be determined.

**5.10 TERMINATION FOR CONVENIENCE:** The City reserves the right, in the City's best interest as determined by the City, to cancel any contract by giving written notice to the Contractor thirty (30) days prior to the effective date of such cancellation.

**5.11 CANCELLATION FOR UNAPPROPRIATED FUNDS:** The obligation of the City for payment to a Contractor is limited to the availability of funds appropriated in a current fiscal period, and continuation of the contract into a subsequent fiscal period is subject to appropriation of funds, unless otherwise authorized by law.

**5.12 RECORDS/AUDIT:** The Contractor shall maintain during the term of the contract all books of account, reports and records in accordance with generally accepted accounting practices and standards for records directly related to this contract. The Contractor agrees to make available to the City Auditor or the City Auditor's designee, during normal business hours and in Broward, Miami-Dade or Palm Beach Counties, all books of account, reports, and records relating to this contract. The Contractor shall retain all books of account, reports, and records relating to this contract for the duration of the contract and for three years after the final payment under this Agreement, until all pending audits, investigations or litigation matters relating to the contract are closed, or until expiration of the records retention period prescribed by Florida law or the records retention schedules adopted by the Division of Library and Information Services of the Florida Department of State, whichever is later.

**5.13 PERMITS, TAXES, LICENSES:** The successful Contractor shall, at his/her/its own expense, obtain all necessary permits, pay all licenses, fees and taxes, required to comply with all local ordinances, state and federal laws, rules and regulations applicable to business to be carried out under this contract.

**5.14 LAWS/ORDINANCES:** The Contractor shall observe and comply with all Federal, state, local and municipal laws, ordinances rules and regulations that would apply to this contract.

NON-DISCRIMINATION: The Contractor shall not, in any of its activities, including employment, discriminate against any individual on the basis of race, color, national origin, age, religion, creed, sex, disability, sexual orientation, gender, gender identity, gender expression, marital status, or any other protected classification as defined by applicable law.

1. The Contractor certifies and represents that the Contractor will comply with Section 2-187, Code of Ordinances of the City of Fort Lauderdale, Florida, (2019), as may be amended or revised, ("Section 2-187"), during the entire term of this Agreement.
2. The failure of the Contractor to comply with Section 2-187 shall be deemed to be a material breach of this Agreement, entitling the City to pursue any remedy stated below or any remedy provided under applicable law.
3. The City may terminate this Agreement if the Contractor fails to comply with Section 2-187.
4. The City may retain all monies due or to become due until the Contractor complies with Section 2-187.
5. The Contractor may be subject to debarment or suspension proceedings. Such proceedings will be consistent with the procedures in section 2-183 of the Code of Ordinances of the City of Fort Lauderdale, Florida.

**5.15 UNUSUAL CIRCUMSTANCES:** If during a contract term where costs to the City are to remain firm or adjustments are restricted by a percentage or CPI cap, unusual circumstances that could not have been foreseen by either party of the contract occur, and those circumstances significantly affect the Contractor's cost in providing the required prior items or services, then the Contractor may request adjustments to the costs to the City to

reflect the changed circumstances. The circumstances must be beyond the control of the Contractor, and the requested adjustments must be fully documented. The City may, after examination, refuse to accept the adjusted costs if they are not properly documented, increases are considered to be excessive, or decreases are considered to be insufficient. In the event the City does not wish to accept the adjusted costs and the matter cannot be resolved to the satisfaction of the City, the City will reserve the following options:

1. The contract can be canceled by the City upon giving thirty (30) days written notice to the Contractor with no penalty to the City or Contractor. The Contractor shall fill all City requirements submitted to the Contractor until the termination date contained in the notice.

2. The City requires the Contractor to continue to provide the items and services at the firm fixed (non-adjusted) cost until the termination of the contract term then in effect.

3. If the City, in its interest and in its sole opinion, determines that the Contractor in a capricious manner attempted to use this section of the contract to relieve Contractor of a legitimate obligation under the contract, and no unusual circumstances had occurred, the City reserves the right to take any and all action under law or equity. Such action shall include, but not be limited to, declaring the Contractor in default and disqualifying Contractor from receiving any business from the City for a stated period of time.

If the City does agree to adjusted costs, these adjusted costs shall not be invoiced to the City until the Contractor receives notice in writing signed by a person authorized to bind the City in such matters.



**5.16 ELIGIBILITY:** If applicable, the Contractor must first register with the Florida Department of State in accordance with Florida Statutes, prior to entering into a contract with the City.

**5.17 PATENTS AND ROYALTIES:** The Contractor, without exception, shall defend, indemnify, and hold harmless the City and the City's employees, officers, employees, volunteers, and agents from and against liability of any nature and kind, including cost and expenses for or on account of any copyrighted, patented or un-patented invention, process, or article manufactured or used in the performance of the contract, including their use by the City. If the Contractor uses any design, device, or materials covered by letters, patent or copyright, it is mutually agreed and understood without exception that the bid prices shall include any and all royalties or costs arising from the use of such design, device, or materials in any way involved in the work.

**5.18 ASSIGNMENT:** Contractor shall not transfer or assign the performance required by this ITB without the prior written consent of the City. Any award issued pursuant to this ITB, and the monies, which may become due hereunder, are not assignable except with the prior written approval of the City Commission or the City Manager or City Manager's designee, depending on original award approval.

**5.19 GOVERNING LAW; VENUE:** The Contract shall be governed by and construed in accordance with the laws of the State of Florida. Venue for any lawsuit by either party against the other party or otherwise arising out of the Contract, and for any other legal proceeding, shall be in the courts in and for Broward County, Florida, or in the event of federal jurisdiction, in the Southern District of Florida.

**5.20 PUBLIC RECORDS:**

**IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT PRRCONTRACT@FORTLAUDERDALE.GOV, 954-828-5002, CITY CLERK'S OFFICE, 100 N. ANDREWS AVENUE, FORT LAUDERDALE, FLORIDA 33301.**

Contractor shall comply with public records laws, and Contractor shall:

1. Keep and maintain public records required by the City in order to perform the service.

2. Upon request from the City's custodian of public records, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes (2021), as may be amended or revised, or as otherwise provided by law.

3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of this Agreement if the Contractor does not transfer the

records to the City.

4. Upon completion of the Agreement, transfer, at no cost, to the City all public records in possession of the Contractor or keep and maintain public records required by the City to perform the service. If the Contractor transfers all public records to the City upon completion of this Agreement, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of this Agreement, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City's custodian of public records, in a format that is compatible with the information technology systems of the City.

**NON-COLLUSION STATEMENT:**

By signing this offer, the vendor/contractor certifies that this offer is made independently and *free* from collusion. Vendor shall disclose below any City of Fort Lauderdale, FL officer or employee, or any relative of any such officer or employee who is an officer or director of, or has a material interest in, the vendor's business, who is in a position to influence this procurement.

Any Cityof LauderdaleFL officeror intowriting of specifications or requirements, solicitation of offers, decision to award, evaluation of offers, or any other activity pertinent to this procurement is presumed, for purposes hereof, to be in a position to influence this procurement.

For purposes hereof, a person has a material interest if they directly or indirectly own more than 5 percent of the total assets or capital stock of any business entity, or if they otherwise stand to personally gain if the contract is awarded to this vendor.

Text Box: 3.3. City employees may not contract with the City through any corporation or business entity in which they or their immediate family members hold a controlling financial interest (e.g. ownership of five (5) percent or more). 3.4. Immediate family members (spouse, parents and children) are also prohibited from contracting with the City subject to the same general rules.

In accordance with City of Fort Lauderdale, FL Policy and Standards Manual, 6.10.8.3,

**Failure of a vendor to disclose any relationship described herein shall be reason for debarment in accordance with the provisions of the City Procurement Code.**

| **Name** | **Relationships** |
|---|---|

**In the event the vendor does not indicate any names, the City shall interpret this to mean that the vendor has indicated that no such relationships exist.**

| | |
|---|---|
| **Authorized Signature** | **Title** |
| **Name (Printed)** | **Date** |

**CONTRACTOR'S CERTIFICATE OF COMPLIANCE WITH NON-DISCRIMINATION PROVISIONS OF THE CONTRACT**

The completed and signed form should be returned with the Contractor's submittal. If not provided with submittal, the Contractor must submit within three business days of City's request. Contractor may be deemed non-responsive for failure to fully comply within stated timeframes.

Pursuant to the City Ordinance Sec. 2-187(c), bidders must certify compliance with the Non-Discrimination provision of the ordinance.

The Contractor shall not, in any of his/her/its activities, including employment, discriminate against any individual on the basis of race, color, national origin, religion, creed, sex, disability, sexual orientation, gender, gender identity, gender expression, or marital status.

1. The Contractor certifies and represents that he/she/it will comply with Section 2-187, Code of Ordinances of the City of Fort Lauderdale, Florida, as amended by Ordinance C-18-33 (collectively, "Section 2-187").

2. The failure of the Contractor to comply with Section 2-187 shall be deemed to be a material breach of this Agreement, entitling the City to pursue any remedy stated below or any remedy provided under applicable law.

3. The City may terminate this Agreement if the Contractor fails to comply with Section 2-187.

4. The City may retain all monies due or to become due until the Contractor complies with Section 2-187.

5. The Contractor may be subject to debarment or suspension proceedings. Such proceedings will be consistent with the procedures in section 2-183 of the Code of Ordinances of the City of Fort Lauderdale, Florida.

Authorized Signature Print Name and Title

Date

# E-VERIFY AFFIRMATION STATEMENT

RFP/Bid /Contract No:

Project Description:

Contractor/Proposer/Bidder acknowledges and agrees to utilize the U.S. Department of Homeland Security's E-Verify System to verify the employment eligibility of,

(a) all persons employed by Contractor/Proposer/Bidder to perform employment duties within Florida during the term of the Contract, and,
(b) all persons (including subcontractors/vendors) assigned by Contractor/Proposer/Bidder to perform work pursuant to the Contract.

The Contractor/Proposer/Bidder acknowledges and agrees that use of the U.S. Department of Homeland Security's E-Verify System during the term of the Contract is a condition of the Contract.

Contractor/Proposer/ Bidder Company Name:

Authorized Company Person's Signature:

Authorized Company Person's Title:

Date:

## BID/PROPOSAL CERTIFICATION

**Please Note:** It is the sole responsibility of the bidder to ensure that his bid is submitted electronically through www.BidSync.com prior to the bid opening date and time listed. Paper bid submittals will not be accepted. All fields below must be completed. If the field does not apply to you, please note N/A in that field.

If you are a foreign corporation, you may be required to obtain a certificate of authority from the department of state, in accordance with Florida Statute §607.1501 (visit http://www.dos.state.fl.us/).

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Company: (Legal Registration) **HDR Engineering, Inc.**EIN (Optional): **47-0680568**

Address: **3250 West Commercial Blvd., Suite 100**

City: **Fort Lauderdale**State: **FL**Zip: **33309**

Telephone No.: **954.535.1876**FAX No.: **954.233.4953**Email: **wendy.fardanesh@hdrinc.com**

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Delivery: Calendar days after receipt of Purchase Order **(section 1.02 of General Conditions)**:

Total Bid Discount **(section 1.05 of General Conditions)**:

Check box if your firm qualifies for MBE / SBE / WBE **(section 1.09 of General Conditions)**: ☐

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ADDENDUM ACKNOWLEDGEMENT - Proposer acknowledges that the following addenda have been received and are included in the proposal:

| Addendum No. | Date Issued | Addendum No. | Date Issued | Addendum No. | Date Issued |
|---|---|---|---|---|---|
| **1** | **4/4/2022** | | | | |

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VARIANCES: If you take exception or have variances to any term, condition, specification, scope of service, or requirement in this competitive solicitation you must specify such exception or variance in the space provided below or reference in the space provided below all variances contained on other pages within your response. Additional pages may be attached if necessary. No exceptions or variances will be deemed to be part of the response submitted unless such is listed and contained in the space provided below. The City does not, by virtue of submitting a variance, necessarily accept any variances. If no statement is contained in the below space, it is hereby implied that your response is in full compliance with this competitive solicitation. If you do not have variances, simply mark N/A. **You must also click the "Take Exception" button.**

**See attached**

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The below signatory hereby agrees to furnish the following article(s) or services at the price(s) and terms stated subject to all instructions, conditions, specifications addenda, legal advertisement, and conditions contained in the bid/proposal.

I have read all attachments including the specifications and fully understand what is required. By submitting this signed proposal, I will accept a contract if approved by the City and such acceptance covers all terms, conditions, and specifications of this bid/proposal. The below signatory also hereby agrees, by virtue of submitting or attempting to submit a response, that in no event shall the City's liability for respondent's direct, indirect, incidental, consequential, special or exemplary damages, expenses, or lost profits arising out of this competitive solicitation process, including but not limited to public advertisement, bid conferences, site visits, evaluations, oral presentations, or award proceedings exceed the amount of Five Hundred Dollars ($500.00). This limitation shall not apply to claims arising under any provision of indemnification or the City's protest ordinance contained in this competitive solicitation.

Submitted by:

| | |
|---|---|
| **Wendy Fardanesh**<br>Name (printed) | **Wendy Fardanesh**<br>Signature |
| **4/14/2022**<br>Date | **Marketing Coordinator**<br>Title |

Revised 4/28/2020