



City of Hollywood
Public Utilities
Vincent Morello, Director
2600 Hollywood Boulevard, Hollywood, FL 33020

[HAZEN AND SAWYER] RESPONSE DOCUMENT REPORT

RFQ (CCNA Proj) No. RFQ-238-24-JJ

Design, Construction Management and Inspection Services for the Influent Pump Station Upgrade

RESPONSE DEADLINE: December 12, 2024 at 3:00 pm

Report Generated: Wednesday, September 3, 2025

Hazen and Sawyer Response

CONTACT INFORMATION

Company:

Hazen and Sawyer

Email:

jforgione@hazenandsawyer.com

Contact:

Julie Forgione

Address:

4000 Hollywood Blvd., Suite 750N
Hollywood, FL 33021

Phone:

N/A

Website:

<https://www.hazenandsawyer.com/>

Submission Date:

Dec 12, 2024 11:26 AM (Eastern Time)

ADDENDA CONFIRMATION

Addendum #1

Confirmed Dec 2, 2024 2:55 PM by Julie Forgione

Addendum #2

Confirmed Dec 2, 2024 2:55 PM by Julie Forgione

QUESTIONNAIRE

1. Upload Statement of Qualification*

Please upload your COMPLETE response, including any and all required forms listed in the solicitation and the corresponding attachments. Please exclude uploading any CONFIDENTIAL / PROPRIETARY information here.

- A. Table of Contents
- B. Executive Summary
- C. Firm's Qualification & Experience
- D. Organizational Profile and Project Team Qualifications
- E. Approach to Scope of Work
- F. References/Past Performances

Please refer to [#SUBMITTAL REQUIREMENTS](#) section, for details regarding the requirement of each section of the Statement of Qualification.

Submittal_Hazen_RFQ-238-24-JJ.pdf

2. Please upload any CONFIDENTIAL / PROPRIETARY information here (as applicable).

Hazen_does_not_have_any_confidential.pdf

3. Required Forms and Acknowledgements

VENDOR REFERENCE FORM*

Please download the below documents, complete, and upload.

- [Vendor Reference Form \(1\).pdf](#)

1021-690-14a_G-References_-_Vendor_Reference_Forms_Completed_.pdf

HOLD HARMLESS AND INDEMNITY CLAUSE *

I, an authorized representative, the contractor, shall indemnify, defend and hold harmless the City of Hollywood, its elected and appointed officials, employees and agents for any and all suits, actions, legal or administrative proceedings, claims, damage, liabilities, interest, attorney' s fees, costs of any kind whether arising prior to the start of activities or following the completion or acceptance and in any manner directly or indirectly caused, occasioned or contributed to in whole or in part by reason of any act, error or omission, fault or negligence whether active or passive by the contractor, or anyone acting under its direction, control, or on its behalf in connection with or incident to its performance of the contract.

Confirmed

NON-COLLUSION STATEMENT*

I, being first duly sworn, depose that:

- A. He/she is an authorized representative of the Company, the Proposer that has submitted the attached Proposal.
- B. He/she has been fully informed regarding the preparation and contents of the attached Proposal and of all pertinent circumstances regarding such Proposal;
- C. Such Proposal is genuine and is not a collusion or sham Proposal;
- D. Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Proposer, firm or person to submit a collusive or sham Proposal in connection with the contractor for which the attached Proposal has been submitted or to refrain from bidding in connection with such contract, or has in any manner, directly or indirectly, sought

by agreement or collusion or communication or conference with any other Proposer, firm or person to fix the price or prices, profit or cost element of the Proposal price or the Proposal price of any other Proposer, or to secure an advantage against the City of Hollywood or any person interested in the proposed Contract; and

- E. The price or prices quoted in the attached Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Proposer or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

Confirmed

CERTIFICATIONS REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS*

The applicant certifies that it and its principals:

Are not presently debarred, suspended, proposed for debarment, declared ineligible, sentenced to a denial of Federal benefits by a State or Federal court, or voluntarily excluded from covered transactions by any Federal department or agency;

Have not within a three-year period preceding this application been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction, violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and

Have not within a three-year period preceding this application had one or more public transactions (Federal, State, or local) terminated for cause or default.

Confirmed

DRUG-FREE WORKPLACE PROGRAM*

- A. IDENTICAL TIE PROPOSALS - Preference shall be given to businesses with drug-free workplace programs. Whenever two or more bids which are equal with respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented

a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie proposals will be followed if none of the tied vendors have a drug-free workplace program. In order to have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).
4. In the statement specified in subsection (1), notify the employee that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program (if such is available in the employee's community) by, any employee who is so convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of these requirements.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.

Confirmed

SOLICITATION, GIVING, AND ACCEPTANCE OF GIFTS POLICY*

Florida Statute 112.313 prohibits the solicitation or acceptance of Gifts. "No Public officer, employee of an agency, local government attorney, or candidate for nomination or election shall solicit or accept anything of value to the recipient, including a gift, loan, reward, promise of future employment, favor, or service, based upon any understanding that the vote, official action, or judgment of

the public officer, employee, local government attorney, or candidate would be influenced thereby.” The term “public officer” includes “any person elected or appointed to hold office in any agency, including any person serving on an advisory body.”

The City of Hollywood/Hollywood CRA policy prohibits all public officers, elected or appointed, all employees, and their families from accepting any gifts of any value, either directly or indirectly, from any contractor, vendor, consultant, or business with whom the City/CRA does business.

The State of Florida definition of “gifts” includes the following:

- Real property or its use,
- Tangible or intangible personal property, or its use,
- A preferential rate or terms on a debt, loan, goods, or services,
- Forgiveness of indebtedness,
- Transportation, lodging, or parking,
- Food or beverage,
- Membership dues,
- Entrance fees, admission fees, or tickets to events, performances, or facilities,
- Plants, flowers or floral arrangements
- Services provided by persons pursuant to a professional license or certificate.
- Other personal services for which a fee is normally charged by the person providing the services.
- Any other similar service or thing having an attributable value not already provided for in this section.

Any contractor, vendor, consultant, or business found to have given a gift to a public officer or employee, or his/her family, will be subject to dismissal or revocation of contract.

As the person authorized to sign the statement, I certify that this firm will comply fully with this policy.

Confirmed

LIST OF SUBCONTRACTORS*

Please download the below documents, complete, and upload.

- [Form 14 - List of Subcontra...](#)

Form_14_-_List_of_Subcontractors_.pdf

CERTIFICATE OF INSURANCE*

See requirements in the [#SPECIAL TERMS AND CONDITIONS](#) section.

City_of_Hollywood_COI_10.3.24.pdf

PROOF OF SUNBIZ REGISTRATION*

Enter company FEIN to be verified in Sunbiz

13-2904652

[Click to Verify](#) *Value will be copied to clipboard*

PROOF OF LICENSE - DEPARTMENT OF BUSINESS & PROFESSIONAL REGULATION

Enter license number to be verified in Department of Business & Professional Regulation

2771

[Click to Verify](#) *Value will be copied to clipboard*

4. ACKNOWLEDGMENT AND SIGNATURE PAGE

IF CORPORATION - DATE INCORPORATED/ORGANIZED:*

June 16, 1977

STATE INCORPORATED/ORGANIZED:*

New York / January 1, 1951

REMITTANCE ADDRESS*

4000 Hollywood Boulevard, Suite 750 North

Hollywood, FL 33021

(954) 987-0066

BIDDER/PROPOSER'S AUTHORIZED REPRESENTATIVE'S TYPED FULL NAME*

J. Philip Cooke, PE, Vice President

IT IS HEREBY CERTIFIED AND AFFIRMED THAT THE BIDDER/PROPOSER CERTIFIES ACCEPTANCE OF THE TERMS, CONDITIONS, SPECIFICATIONS, ATTACHMENTS AND ANY ADDENDA. THE BIDDER/PROPOSER SHALL ACCEPT ANY AWARDS MADE AS A RESULT OF THIS SOLICITATION. BIDDER/PROPOSER FURTHER AGREES THAT PRICES QUOTED WILL REMAIN FIXED FOR THE PERIOD OF TIME STATED IN THE SOLICITATION.*

Confirmed

THE EXECUTION OF THIS FORM CONSTITUTES THE UNEQUIVOCAL OFFER OF BIDDER/PROPOSER TO BE BOUND BY THE TERMS OF ITS PROPOSAL. FAILURE TO SIGN THIS SOLICITATION WHERE INDICATED BY AN AUTHORIZED REPRESENTATIVE SHALL RENDER THE BID/PROPOSAL NON-RESPONSIVE. THE CITY MAY, HOWEVER, IN ITS SOLE DISCRETION, ACCEPT ANY BID/PROPOSAL THAT INCLUDES AN EXECUTED DOCUMENT WHICH UNEQUIVOCALLY BINDS THE BIDDER/PROPOSER TO THE TERMS OF ITS OFFER.*

Confirmed

PROPOSAL FORM*

Please download the below documents, complete, and upload.

- [Proposal Form.docx](#)

Proposal_Form.pdf

5. SWORN STATEMENT PURSUANT TO SECTION 287.133 (3) (a) FLORIDA STATUTES ON PUBLIC ENTITY CRIMES

THIS FORM STATEMENT IS SUBMITTED TO THE CITY OF HOLLYWOOD BY:*

(Print individual's name and title) (Print name of entity submitting sworn statement)

J. Philip Cooke, Vice President

SWORN STATEMENT CONTINUATION:*

Enter business address:

4000 Hollywood Boulevard, Suite 750 North, Hollywood, FL 33021

SWORN STATEMENT CONTINUATION:*

Enter Federal Employer Identification Number (FEIN) is:

If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement.

13-2904652

SWORN STATEMENT CONTINUATION:*

I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in an federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

I understand

SWORN STATEMENT CONTINUATION:*

I understand that "Affiliate," as defined in paragraph 287.133(1)(a), Florida Statutes, means:

1. A predecessor or successor of a person convicted of a public entity crime, or

2. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term “affiliate” includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm’s length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

Confirmed

SWORN STATEMENT CONTINUATION:*

I understand that “person,” as defined in Paragraph 287.133(1)(e), Florida Statutes, means any natural person or any entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts let by a public entity, or which otherwise transacts or applies to transact business with a public entity.

The term “person” includes those officers, executives, partners, shareholders, employees, members, and agents who are active in management of an entity

Confirmed

SWORN STATEMENT CONTINUATION:*

Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies.)

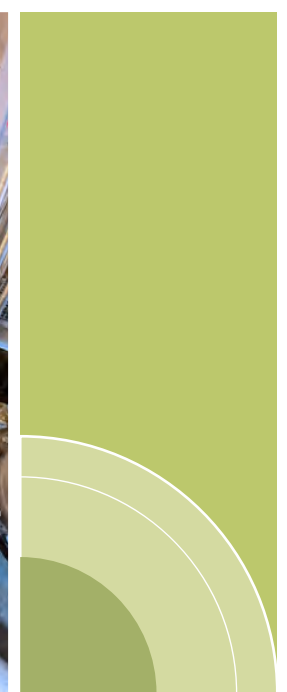
Division of Administrative Hearings, determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. (attach a copy of the Final Order).

Neither the entity submitting sworn statement, nor any of its officers, director, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

SWORN STATEMENT CONFIRMATION*

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THAT PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017 FLORIDA STATUTES FOR A CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

Confirmed



Design, Construction Management and Inspection Services for the Influent Pump Station Upgrade

RFQ-238-24-JJ | December 12, 2024

December 12, 2024

City of Hollywood
Office of Procurement Services
2600 Hollywood Boulevard
Hollywood, FL 33020

Subject: RFQ-238-24-JJ; Design, Construction Management, and Inspection Services for the Influent Pump Station Upgrade

Dear Evaluation Committee Members:

The City of Hollywood (City) is recognized for its cost-effective and environmentally sound utility planning that prioritizes fiscal responsibility. Hazen and Sawyer (Hazen) understands the City's need to fully rehabilitate the aging Influent Pump Station and associated electrical building at the Southern Regional Wastewater Treatment Plant to enhance long-term operational reliability and efficiency. Hazen is well-equipped to support the City with the technical expertise and comprehensive approach needed to develop the most cost effective and operator-friendly design for this project. We led the previous upgrade of this pump station in 1999, recently completed the City's Wastewater Master Plan, and have a deep understanding of the pump station, treatment plant, and overall system. Our recent design for the City's wastewater treatment plant's emergency bar screen bypass is just one example of our ongoing work with the City's facilities.

Hazen possesses the following key attributes to benefit the City with implementation of this important project:



Hollywood-headquartered firm with a longstanding partnership with the City since the 1980s.

Hazen has been a trusted partner to the City of Hollywood since the 1980s and has been part of the community since establishing our Southeast regional headquarters here in 1968. Our longstanding presence means we understand the City's unique needs, priorities, and culture, allowing us to provide solutions that align with your goals for a cost-effective plan and design. Our team's past and ongoing projects, including the emergency bar screen bypass, emergency response projects, and existing general consulting services contract, demonstrate our commitment to Hollywood's continued success.



Unmatched Historical knowledge of the SRWWTP.

Hazen's extensive experience with the Southern Regional Wastewater Treatment Plant (SRWWTP) uniquely positions us to address the City's needs. Our involvement dates back to 1984, giving us valuable insights into existing maintenance issues and the history of plant issues. This familiarity with your wastewater system, combined with our understanding of the City's capital planning, enables us to quickly identify risks, gaps, and needs. Additionally, key members of our team bring a wealth of experience in planning, wastewater treatment, and pump station operations specifically for the City of Hollywood, further enhancing our capability to deliver effective solutions. This experience includes the previous rehabilitation of the Influent Pump Station 25 years ago, which has served the City well.



Proven pump station experience. Hazen has extensive technical expertise in influent pump station and WWTP upgrades, having designed over 10.9 billion gallons per day (bgd) firmwide and more than 2 bgd in Florida. Our projects for clients, including Broward County Water and Wastewater Services; Miami-Dade Water and Sewer Department; the Cities of Fort Lauderdale, Miramar, Cooper City, Plantation, and North Miami; the Town of Jupiter; and JEA, encompass over 200 pump station and booster station designs, ranging from new regional installations to rehabilitations of existing facilities. Our team's familiarity with a wide array of pump technologies and manufacturers enables us to select the best solutions for each application. Hazen's South Florida-specific design experience is critical, as it provides us with a thorough understanding of the regulatory environment and sensitivities that influence project implementation.

Our team is led by our Project Manager, **J. Philip Cooke, PE**, with **Patrick Davis, PE**, serving as Project Director. Mr. Davis has been directly involved in and/or in charge of the majority of Hazen projects for the City over the last several decades. He has the authority to ensure that all the necessary resources of our firm are available to Mr. Cooke to meet the City's needs and objectives, and to ensure that the City assignments continue to remain top priority for Hazen. Mr. Cooke possesses extensive City of Hollywood planning, wastewater treatment plant, pump station, and force main design and evaluation experience.

As requested in the RFQ, proof of signing authority is provided to the right. Hazen also declares that the only person(s), company or parties interested in the proposal as principals are named herein; our proposal is made without collusion with any other person(s), company or parties submitting a proposal; that it is in all respects fair and in good faith, without collusion or fraud; and that the signers of the proposal have full authority to bind the principal proposer.



As an integral part of the community, Hazen is deeply vested in the success of the City of Hollywood's projects. We greatly value our relationship and hope to continue our partnership through this contract. As you review our qualifications, we hope you will agree that Hazen is the ideal choice for this important project.

As a Hazen Vice President, I, as well as Mr. Cooke, are authorized to make representations for the firm. I can be reached at (954) 987-0066 or pdavis@hazenandsawyer.com. If you require any additional information, Mr. Cooke can be reached at pcooke@hazenandsawyer.com.

Very truly yours,

Hazen and Sawyer

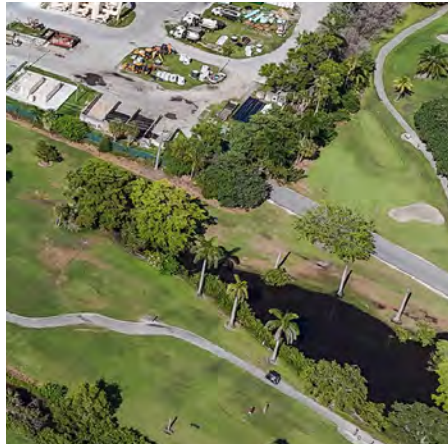
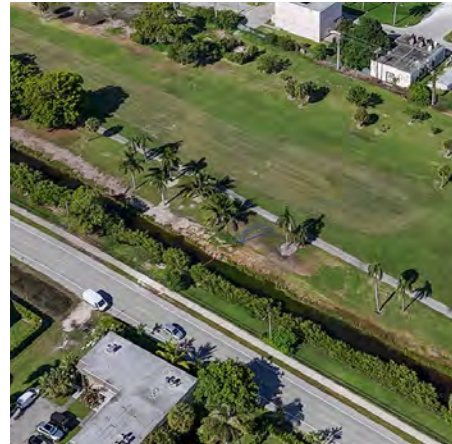
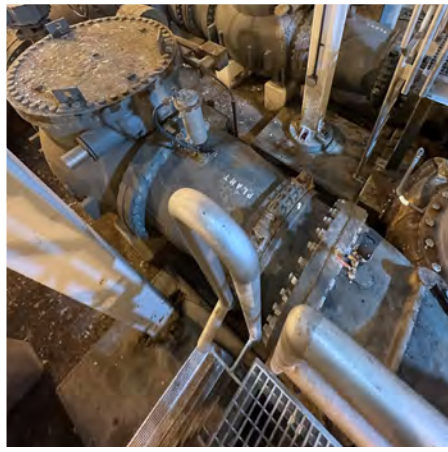
Patrick Davis, PE
Vice President; Proposed Project Director

J. Philip Cooke, PE
Vice President; Proposed Project Manager

TAB

A

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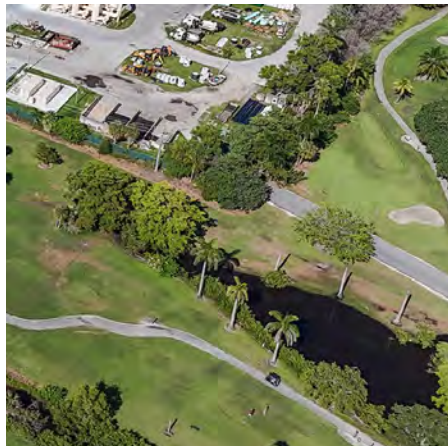
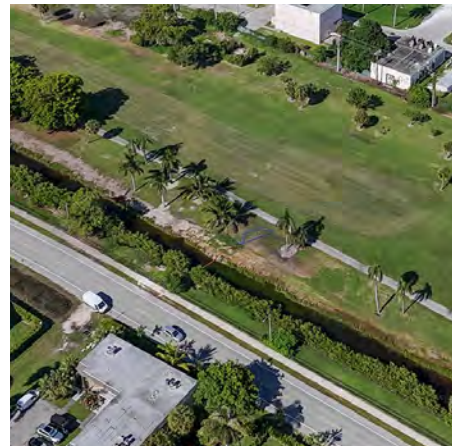
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B

Executive Summary



B Executive Summary

The Hazen team brings national best practices coupled with unmatched local discipline experts and experience to the City of Hollywood’s Design, Construction Management and Inspection Services for the Influent Pump Station Upgrade, ensuring that our team will continue the City standard of providing reliable and cost-effective utility services to all its customers.

As requested in the RFQ, the following information is included in our Executive Summary:

- Business entity, background, main office and office location that will service this contractPage 1
- Officers, principals, supervisory staff, and key individuals who will be directly involved with the work and their office locationsPage 2
- Summary of the key elements of the proposalPage 3

Business Entity, Background, Main Office, and Office Location

Business Entity and Background

Established in 1951, Hazen has provided complete in-house engineering services in Florida since 1968. Our staff members have extensive expertise in wastewater treatment and disposal, wastewater collection and transmission, water supply and treatment, water distribution, reclaimed water, inflow/infiltration (I/I) reduction, regulatory compliance, hydraulic modeling, condition assessment, asset management, construction management, deep injection wells, stormwater, grant funding, value engineering, and related practices and disciplines.

Our Florida staff have been involved in the implementation of more than \$8 billion in public works infrastructure projects in Florida over the past 10 years alone. These Florida projects include, but are not limited to, evaluation, design, permitting, construction management and administration, startup and operational assistance, and field services for wastewater treatment plant process improvements, wastewater treatment upgrades, wastewater lift stations, stormwater pump stations and structures, pipelines associated with water, reclaimed water, stormwater and sewer networks; as well as water treatment plant process improvements, water treatment plant upgrades, raw water supply systems, elevated storage tanks, and booster pump stations.

Company Name

Hazen and Sawyer

Office Location that will Service this Contract

SE Regional Headquarters
4000 Hollywood Boulevard,
Suite 750 North
Hollywood, FL 33021
(954) 987-0066
Fax Number: (800) 304-8791

Business Entity

Hazen and Sawyer is a corporation authorized to transact business in the State of Florida.

Corporate Headquarters

New York, NY

Primary Contact

J. Philip Cooke, PE

Email Address

pcooke@hazenandsawyer.com

Main Office and Office Location That Will Service This Contract

An international enterprise with corporate headquarters in New York City and 70+ offices, Hazen operates a full-service regional headquarters office in Hollywood, Florida, and branch offices in eight other locations in Florida. To best respond to the City, Hazen’s Hollywood office (**4000 Hollywood Blvd., Suite 750 North, Hollywood, FL**), will service this contract. Additionally, we can also draw upon our firmwide resources of 2,000+ employees to provide as-needed support or subject matter expertise. Our team’s structure allows us to seamlessly utilize our national resources and expertise to meet the City’s needs.

Officers, Principals, Supervisory Staff and Key Individuals (and Office Locations)

A list of officers, principals, supervisory staff, and key individuals who will be directly involved with the work and their office locations is listed below.

<p>Officer/Principals:</p> <p>HOLLYWOOD, FL</p> <ul style="list-style-type: none"> Patrick Davis, PE <i>VP, Project Director</i> J. Philip Cooke, PE <i>VP, Project Manager</i> 	<p>Supervisory Staff and Key Individuals (including office locations):</p> <p>HOLLYWOOD, FL</p> <ul style="list-style-type: none"> Jennifer McMahon, PE <i>Mechanical/Pumping Upgrades Lead</i> John Burke, PE <i>Electrical Lead</i> Shajan Joykutty, PE <i>Structural/Architectural Lead</i> 	<ul style="list-style-type: none"> Monique Durand, PE <i>Permitting Lead</i> John Hoffman, PE <i>Construction Management/Inspections</i> <p>BOCA RATON, FL</p> <ul style="list-style-type: none"> Evan Curtis, PE <i>Instrumentation Lead</i> <p>CORAL GABLES, FL</p> <ul style="list-style-type: none"> Christopher Kish, PE, ENV SP QA/QC 	<p>SEATTLE, WA</p> <ul style="list-style-type: none"> Charles Allaben, PE <i>Technical Advisor</i> <p>CORPUS CHRISTI, TX</p> <ul style="list-style-type: none"> Eric Frieze <i>Technical Advisor</i>
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Most of our team members are located in our Hollywood office, which allows our team to provide timely and efficient services.

Hazen’s office is located less than 5 miles from the City’s facilities.



We are a phone call away ...



Hazen’s Hollywood office is centrally located to the City’s WTP and WWTP and a **10-minute drive** to City Hall.

Our team’s local resources consist of 80 employees in Broward County, with many of our proposed key team members having a history of working together and with the City. This will ensure efficient delivery of your projects.

Key Elements of the Proposal

The following provides an overview of the key sections of our proposal. Additional detail relative to all items summarized here can be found throughout the various sections of the proposal.

Tab C Firm Qualifications and Experience

The following items are provided in this section of the proposal:

- Confirmation that all Minimum Qualifications required of responding firms are met by the Hazen team (including copies of the firm's professional licenses)
- Documentation of Similar Project Experience, including a number of similar example projects

Select **Similar Project Experience**

 = Reference project



City of Homestead Influent Pump Station and Gravity Interceptor

- New influent pump station (21 mgd) with centrifugal pumps, equipped with variable frequency drives.
- Provided improvements that enabled the City to overcome development restrictions.
- Managed entirely by Hazen, from design to construction oversight, ensuring compliance with permits and regulatory agencies.



Broward County North Regional WWTP Improvements

- Pump station upgrades, including VFDs for five 800 hp pumps and associated electrical gear.
- Much of the same team as proposed for Hollywood, including mechanical, structural, electrical, instrumentation and subs for HVAC and survey.
- Major facility upgrades while maintaining plant in service.



City of Fort Lauderdale Stormwater Improvements - River Oaks Pump Stations

- An inlet pump station (13 mgd) and outfall pump station (82 mgd) with new electrical building.
- Incorporates resilient design to address climate change and sea-level rise.
- Includes same mechanical, electrical, instrumentation, structural, survey, and geotechnical engineers proposed for Hollywood project.



Miami-Dade County North District WWTP Electrical Distribution Building No. 3

- Provides design and engineering services for the construction.
- Proposed design replaced an existing electrical building while maintaining service
- Designed the new electrical building to operate the WWTP during hurricanes.



City of Miramar Wastewater Reclamation Facility Reuse Phase I Expansion to 7.5 mgd

- Pump station upgrades, including VFDs and other electrical gear.
- Much of the same team as proposed for Hollywood, including mechanical, structural, electrical, instrumentation, and survey.
- Major facility upgrades while maintaining plant in service.

Hazen has the experience for pumping station and electrical building design that is required for this important project.


Tab C Firm Qualifications and Experience, continued

Our key attributes will help deliver a timely and cost-effective project.




Hollywood regional headquarters (since 1968) with a proven 40-year partnership with the City

BENEFIT Cost-effective and timely design for successful project completion; local and responsive project manager and team members, ensuring project quality.



Unmatched knowledge of the City's SRWWTP

BENEFIT No learning curve with planning and design. Hazen led the last upgrade of the City's influent pump station in 1999, recently completed the City's Wastewater Master Plan, and has a deep understanding of the City's pump station, treatment plant, and overall system.



Proven pump station experience

BENEFIT We have extensive technical expertise in influent pump station and WWTP upgrades, having designed over 10.9 bgd firmwide and 2 bgd in Florida. Our Florida projects encompass over 200 pump station and booster station designs, from new regional installations to rehabilitations of existing facilities.

We offer accrued value to the City, ensuring project success —

Hazen's in-depth experience and knowledge of the City's infrastructure bolster our starting position, meaning efficient project management and no learning curve.



Tab D Organizational Profile and Project Team Qualifications

Hazen Team Leaders

Our team brings unparalleled institutional knowledge of the City’s infrastructure and a longstanding partnership with the City since 1984.

			
working with Hollywood since 1990	working with Hollywood since 1984	working with Hollywood since 2004	working with Hollywood since 1985
Project Manager	Project Director	Mechanical/Pumping Upgrades Lead	Structural/Architectural Lead
J. Philip Cooke, PE	Patrick Davis, PE	Jennifer McMahon, PE	Shajan Joykutty, PE

With our extensive knowledge of your wastewater system, we can rapidly pinpoint risks, gaps, and needs—**eliminating the learning curve and delivering significant time and cost savings to the City.**

Our proposed Project Manager provides extensive City of Hollywood planning, treatment plant, and pump station experience. Mr. Cooke provided field inspections for the City’s 1999 influent pump station upgrades.



J. Philip Cooke, PE
Project Manager

Mr. Cooke has managed general consulting projects for the City of Hollywood since 2006, with over \$27 million worth of wastewater projects over the last 7 years. His experience includes design, permitting, and construction administration for a range of water, wastewater, water quality, and reclaimed water projects for municipal and industrial clients.

For additional details on our Project Team Qualifications, see Tab D.

Tab E Approach to Scope of Work

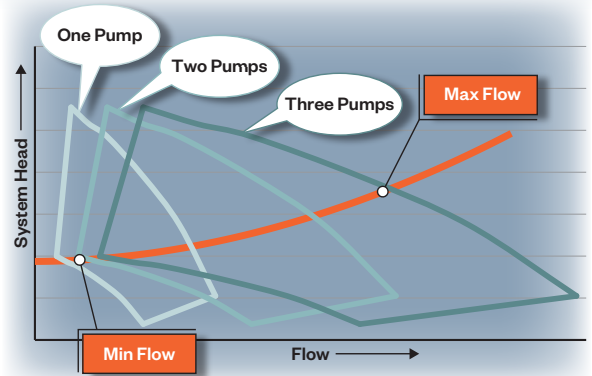
Hazen has a complete understanding of the project's key technical challenges including pump selection, upgrading the electrical system and instrumentation system, bypass pumping needs to ensure continuity of service (if required), building modifications, and rehabilitation of the diversion box between the grit system and influent pump station.

Hazen designed the 1999 influent pump station upgrades and recently completed design of the emergency bar screen bypass and grit removal projects which provide key insights to a cost-effective and timely approach.

Hazen's basis of design will include resiliency initiatives to best ensure the influent pump station upgrade design is adapted for conservative sea level rise and storm events. In addition, the design will address dynamic analysis of the proposed pump upgrades, minimizing the potential for operational issues related to vibration.

Hazen's step-by-step approach provides the most cost effective method for upgrading this station.

For additional details on our Approach, see Tab E.



Hazen will work closely with the City to help ensure all schedules and budgets are met.

Tab F Knowledge of Site and Local Conditions

Hazen delivers complex projects in compliance with State, County, and City codes. Our expertise in low-elevation and hurricane-prone areas, strong local subcontractor partnerships, and knowledge of permitting and safety protocols ensure resilient and high-quality results, even in challenging environments.

Additional details are provided in Tab F.

Tab G References

As requested, we have included a minimum of three client references (along with the Vendor Reference Form) for projects of similar size, scope, and complexity within the last 5 years. A summary of our client references are provided below. **Additional details are provided in Tab G.**

City of Homestead - Influent Pump Station and Gravity Interceptor

Eduardo Gonzalez, Assistant Director of Operations / (305) 224-4789 / egonzalez@homesteadfl.gov

Broward County – North Regional Wastewater Treatment Plant (NRWWTP) Facility Improvements

Mark Darmanin, Director, Water and Wastewater Operations Division / (954) 831-0960 / mdarmanin@broward.org

City of Fort Lauderdale – Stormwater Improvements - River Oaks Pump Stations

Rares Petrica, PE, Senior Project Manager / (954) 828-7150 / RPetrica@fortlauderdale.gov

Miami-Dade Water and Sewer Department - North District Wastewater Treatment Plant Electrical Distribution Building No. 3

Nelson Perez-Jacome, PE, Assistant Director, Utility Engineering / (786) 552-8398 / nelson.perez-jacome@miamidade.gov

City of Miramar - Wastewater Reclamation Facility Reuse Phase I Expansion to 7.5 mgd

Francois Domond, PE, Director of Utilities Department / (954) 883-6813 / fdomond@miramarfl.gov

Tab H Subconsultants Information

Hazen has formed a dedicated team of subconsultants with whom we have built strong working relationships. Our team includes Craven Thompson & Associates, Inc. (Topographic Survey, if required); WIRX Engineering, LLC (Geotechnical Services, if required); Metco Southeast, LLC (HVAC Design); and Gallagher Bassett Technical Services Lead Paint & Asbestos Survey [required for permitting]).

Additional details are provided in Tab H.



Tab I Financial Resources

Hazen has maintained a relationship with Chase since 1952 (our account has been handled in a fully satisfactory manner). Balances during the past 12 months have averaged in the low eight figures. We have a company line of credit in the low eight figures.

Additional details are provided in Tab I.

Tab J Legal Proceedings and Performance

- Hazen has not paid liquidated damages nor been terminated for default.
- A list of legal proceedings against Hazen in the last 5 years is included in this tab.
- Hazen has not filed any arbitrations nor have any arbitrations been filed against the firm in the last 5 years.
- Details on construction-related lawsuits filed by or against Hazen in the last 5 years are included in this tab.
- Lawsuits, administrative proceedings, or hearings initiated by the National Labor Relations Board or similar state agency concerning any labor practices by our firm, as well as any lawsuits, administrative proceedings, or hearings initiated by the Occupational Safety and Health Administration concerning the project safety practices of Hazen in the last 5 years are included in this tab, as applicable.
- Hazen has never had a bankruptcy petition.
- Hazen has not had any contracts in which it has been terminated by the other party.
- Hazen has never used bonded money to complete a project or to pay a subcontractor or supplier.

Additional details are provided in Tab J.

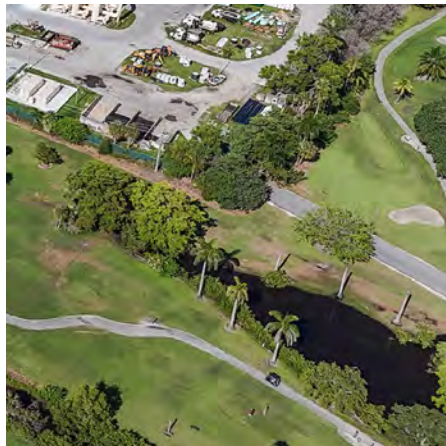
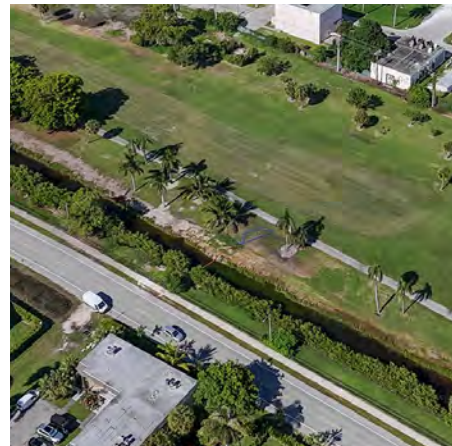
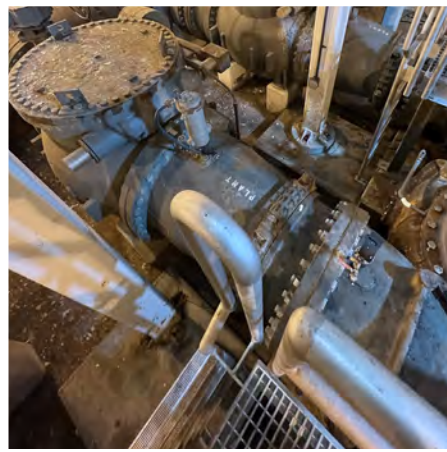
Tab K Required Forms

All required forms, as requested in the RFQ, are included in this tab.

TAB



Firm Qualifications and Experience



C Firm Qualifications and Experience

Hazen successfully led the last upgrade of this pump station for the City of Hollywood in 1999, implementing a cost-effective design that maximized use of existing infrastructure and enabled continued operation of the station throughout construction. We will build on our in-depth expertise in pump station design and construction and our institutional knowledge of the City’s facilities to deliver the high quality services needed for this project.

Firm Profile

Hazen and Sawyer’s roots go back over 100 years to the accomplishments of Allen Hazen, one of the pioneers of modern water supply engineering and co-developer of the Hazen-Williams formula for fluid flow in pipes in 1902. Hazen was established by Hazen’s son Richard and Alfred W. Sawyer in 1951. Together they created a company culture focused on the profession—not just the business—of engineering. Their legacy is a firm with a reputation for high-quality work and customer service.

Hazen has provided complete in-house engineering services in Florida since 1968 from our regional headquarters/design center in Hollywood, Florida, to serve utilities. Hazen’s exclusive focus is water resources engineering. We provide comprehensive capabilities in areas including, but not limited to, water, wastewater, stormwater, and reuse. Our staff members have extensive expertise in mechanical/pumping upgrades, instrumentation, electrical, structural/architectural, permitting and regulatory compliance, hydraulic modeling, construction management, civil/stormwater, grant funding and State Revolving Fund coordination, and related practices and disciplines. Our Florida staff have been involved in the implementation of more than \$8 billion in public works infrastructure projects in Florida over the past 10 years alone.

DESIGNED OVER 10.9 BILLION GPD	in PUMPING CAPACITY firmwide	#1	LARGEST WATER AND WASTEWATER DESIGN CENTER in South Florida	\$8 BILLION	IN FLORIDA PUBLIC WORKS INFRASTRUCTURE over the past 10 years
100 PERCENT	of work devoted to THE WATER ENVIRONMENT	MORE THAN 1 BILLION GPD	OF PLANT UPGRADES designed over the last 10 years in Florida	40 YEARS	working with the City of Hollywood




We bring **the right experience.**

Hazen

SOUTHEAST REGIONAL HEADQUARTERS in Hollywood	SINCE 1968	9 OFFICES	in Florida and more than 75 OFFICES IN U.S. AND ABROAD	MORE THAN 2,000	STAFF FIRMWIDE, with 200 staff in Florida
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Satisfaction of Minimum Requirements

Hazen meets all of the RFQ’s minimum qualifications...

-  Hazen possesses relevant design, permit application, construction administration, grant management or state resource fund, and inspection services for pump station projects in Florida for over 56 years. Hazen has successfully completed services as specified in the Scope of Work/Services section of the RFQ, and are normally and routinely engaged in performing such services.
-  Neither Hazen nor any of our principals, officers, or stockholders are 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. Hazen does not have any conflict of interest with regard to any other work performed by Hazen for the City.
-  Hazen and key members of our proposed team possess a valid Engineering License in the State of Florida and are registered with the Florida Department of Business and Professional Regulation (DBPR) as an Engineer, as applicable.

Hazen is authorized to provide engineering services in the State of Florida, per the Florida DBPR.


Print

Licensee

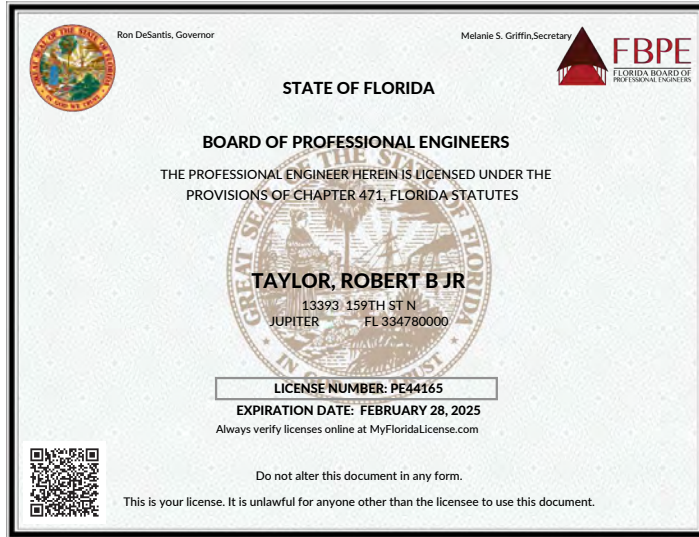
Name:	HAZEN AND SAWYER, P.C.	License Number:	2771
Rank:	Registry	License Expiration Date:	
Primary Status:	Current	Original License Date:	11/08/1978

Related License Information

License Number	Status	Related Party	Relationship Type	Relation Effective Date	Rank	Expiration Date
44165	Current, Active	TAYLOR, ROBERT B JR	Registry	04/27/2017	Professional Engineer	02/28/2025

<p>Business Structure</p> <p>Hazen and Sawyer is a corporation and is authorized to transact business in the State of Florida. We have operated under our current firm name since 1951.</p> <p>Years of Experience Providing Services as it Relates to the Scope of Work</p> <p>73 years</p> <p>Relative Size of the Firm (including management, technical, and support staff)</p> <p>2,000+ staff firmwide</p>	<p>Address</p> <p>4000 Hollywood Boulevard Suite 750 North Hollywood, FL 33021</p> <p style="text-align: center;"> Hazen’s Hollywood office is located 4 miles from the City’s Utilities Department.</p>	<p>Contact Person</p> <p>J. Philip Cooke, PE (954) 987-0066 Fax: (800) 304-8791 (Corporate Central Fax Number) pcooke@hazenandsawyer.com</p> <p>Website</p> <p>hazenandsawyer.com</p>
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A copy of Hazen’s qualifier for the firm’s registry to provide engineering services is provided below.



Hazen’s Certificate of Status (Sunbiz) is shown on the right.



Value of Past Contract Awards by the City of Hollywood

Hazen’s volume of work previously awarded to the firm by the City of Hollywood in the last five years appear in the table below. We are happy to provide additional information upon request.

Project Name	Project Fee
General Consulting Contract	\$4,592,632
Public Utilities Project Package 1	\$2,249,705
General Consulting Contract	\$854,334
Engineering Consulting For Infiltration and Inflow Program	\$480,000

As an integral part of the community, **Hazen is deeply vested in the success of the City of Hollywood’s projects.** We greatly value our relationship and hope to continue our partnership through this contract.

Hazen is **genuinely committed to the success of the City of Hollywood's community.**

Hazen is an integral part of the economic and social fabric of Hollywood. Our Southeastern Regional Headquarters has been located here since 1968. Many of our employees live in Hollywood, pay taxes in Hollywood, patronize Hollywood businesses, and send their children to school here. Hazen patronizes a number of local Hollywood businesses through hosting corporate and office events on a yearly basis. As corporate citizens, we have consistently supported civic functions.

Select community involvement activities, past and present:

- Hollywood YMCA Annual Scholarship Campaign
- Hollywood Boys and Girls Club
- Art and Culture Center of Hollywood
- Hollywood YMCA Family Center
- Career days at local Hollywood schools
- Halloween Masquerade Ball
- Hollywood Elementary Schools Water Conservation Program
- Hollywood Fun Day in the Park
- Department of Utilities Career Day for Students
- Neighborhood Olympics
- Hollywood Public Service Recognition Week
- Broward Outreach Homeless Shelter, through Christmas in July
- Cystic Fibrosis-Great Strides Hollywood Beach
- Hollywood Firefighters Benevolent Fund
- Joe DiMaggio Children's Hospital



We have an outstanding record of giving back
to the communities in which we live.


Hazen has assembled a team of professionals with distinct attributes to best complement the services required for this contract. Our team’s qualifications and similar experience are highlighted in this section.

Our key attributes will help deliver a timely and cost-effective project.




Hollywood regional headquarters (since 1968) with a proven 40-year partnership with the City

BENEFIT Cost-effective and timely design for successful project completion; local and responsive project manager and team members, ensuring project quality.



Unmatched knowledge of the City’s SRWWTP

BENEFIT No learning curve with planning and design. Hazen led the last upgrade of the City’s influent pump station in 1999, recently completed the City’s Wastewater Master Plan, and has a deep understanding of the City’s pump station, treatment plant, and overall system.



Proven pump station experience

BENEFIT We have extensive technical expertise in influent pump station and WWTP upgrades, having designed over 10.9 bgd firmwide and 2 bgd in Florida. Our Florida projects encompass over 200 pump station and booster station designs, from new regional installations to rehabilitations of existing facilities.

We offer accrued value to the City, ensuring project success —

Hazen’s in-depth experience and knowledge of the City’s infrastructure bolster our starting position, meaning efficient project management and no learning curve.



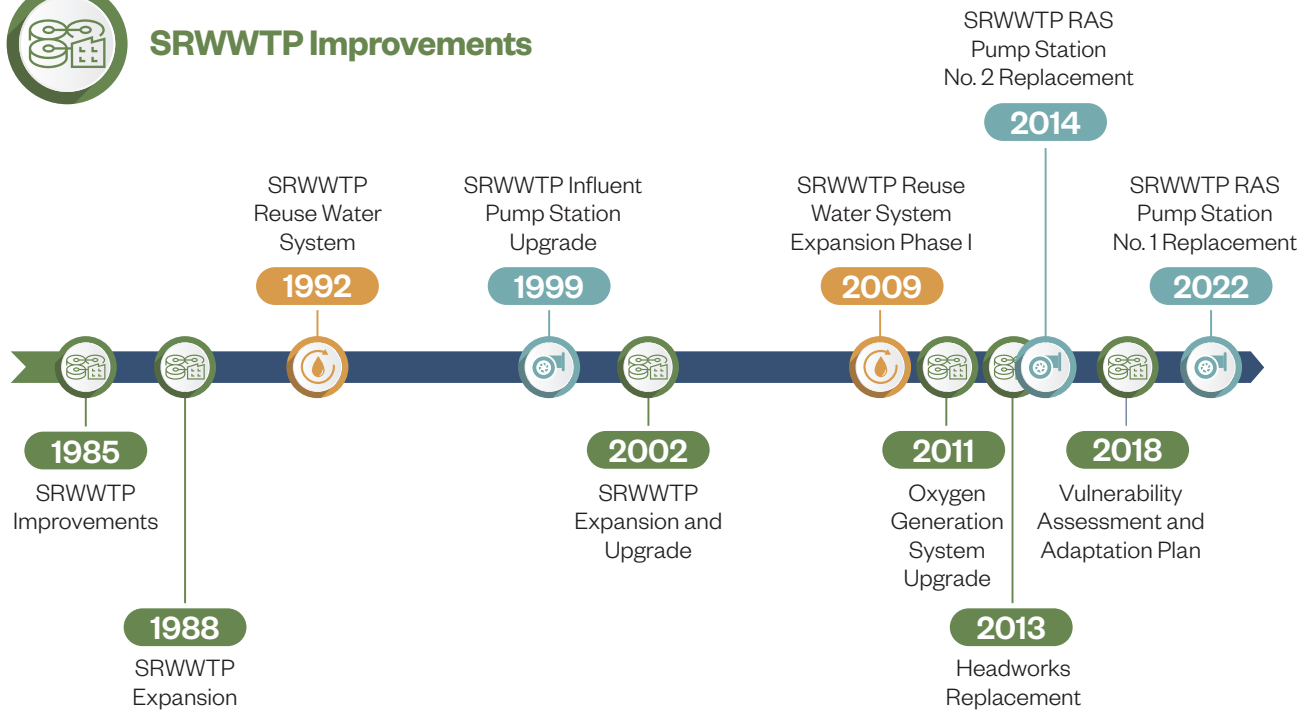


Hazen is a Hollywood-headquartered firm with a longstanding partnership with the City since 1984.

With our deep knowledge of your Influent Pump Station and wastewater system, we can rapidly pinpoint risks, gaps, and needs—ensuring there’s no learning curve.



SRWWTP Improvements



Pump Station/Force Main



Reuse

Hazen has been a trusted partner to the City of Hollywood since the 1980s and has been part of the community since establishing our Southeast regional headquarters here in 1968. Our longstanding presence means we understand the City’s unique needs, priorities, and culture, allowing us to provide solutions that align with your goals. With in-depth institutional knowledge of the City’s utilities and facilities, we are well-positioned to develop a cost-effective plan and design that meet your timeline and budget. Our team’s past and ongoing projects, including the emergency bar screen bypass, emergency response projects, and existing general consulting services contract, demonstrate our commitment to Hollywood’s continued success.



We provide unmatched historical knowledge of the City's SRWWTP.

Hazen led the last upgrade of the City's influent pump station in 1999, recently completed the City's Wastewater Master Plan, and has a thorough understanding of the City's pump station, treatment plant, and overall system.



Highlighted areas in yellow signify where Hazen has previously completed work.

Influent Pump Station and Electrical Control Building

are facilities that Hazen has previously worked on, providing familiarity with the site and efficiencies on this project.

For the 1999 Upgrade, Hazen implemented a robust design that accommodated all range of flows and provided operational flexibility with reduced risk.

The Influent Pump Station was upgraded under the 1999 WWTP Upgrade Contract. The upgrades included five new pumps with variable frequency drives, improvements for wet well isolation, rehabilitation of the wet wells, expansion of the existing electrical/control building, and lighting and ventilation modifications. **These upgrades were designed and permitted by Hazen and included a complex phased sequence of construction to minimize disruption of plant operations and maximize use of existing infrastructure, ensuring continuous, cost-effective treatment capacity.**

In 2022, a condition assessment of the Influent Pump Station was completed by Hazen personnel. Assessment methodology included a review with plant operations personnel to identify areas of deficiency and specific equipment that was approaching the end of its useful life. This was followed by a field inspection conducted by Hazen engineers representing the mechanical, civil, structural and electrical/I&C disciplines. Assessment was based on functional performance and physical condition with emphasis on performance, reliability, age, and maintenance.

It is noted that much of the equipment, including pumps and switchgear, are reaching the end of their useful service lives. Operations staff report excessive downtime of the influent pumps due to age and wear. Specific examples include the following:

- Pump volutes and ancillary equipment show exterior corrosion.
- Increased vibrations of pumps at certain operating speeds.
- Sump pumps were heavily corroded and inoperable.
- The building’s ventilation blower was out of service and heavily damaged.
- The dry pit control panel and switchgear are approximately 25 years old and showing signs of corrosion.
- Signs of deteriorated coating systems are present throughout the building.

In 2024, Hazen finalized a grit removal project that included the Influent Pump Station. This project used a phased construction sequence to eliminate interruptions to overall plant service and presents a good opportunity for Hazen staff to thoroughly inspect the condition of the Influent Pump Station wet well. Required structural rehabilitation can be included as part of the Influent Pump Station upgrades.



General view of the mechanical equipment for the pump discharge including a swing check valve.



Corrosion and deteriorated coating observed.



We offer proven pump station experience.

Hazen’s South Florida-specific design experience is critical, as it provides us with a thorough understanding of the regulatory environment and sensitivities that influence project implementation.

Our experience extends far beyond that of the Influent Pump Station. Our staff has experience with almost every available pump technology and pump drive offered. Through this experience, we have developed knowledge regarding the main pump manufacturers on the current market, allowing us to assess the best technology for each application.

Hazen’s Corporate Pumping Group is comprised of the industry’s leading authorities on pumping system design and components. This group includes members of the Hydraulic Institute and subject matter experts in rotating machinery, vibration, dynamic analysis, intake design, and operational troubleshooting, among other topics.

Pump Station Experience

Hazen is synonymous with hydraulics and pumping.

Stormwater



8

Facilities
Over 100 mgd

Wastewater



23

Facilities
Over 100 mgd

Water



11

Facilities
Over 100 mgd

Design of more than

10.9 BGD in pumping capacity
firmwide.

Water and wastewater pump stations in FL
with a **total installed capacity**
over 2 BGD.

Florida pump station and booster station
design experience includes
200+ projects.

BENEFITS TO Hollywood

- Delivery of innovative solutions that enhance performance, reliability/resiliency, and safety.
- Our team’s experience modeling pump station improvements and their impact on Hollywood’s existing infrastructure will be leveraged to streamline design/permitting and to develop innovative solutions.
- Optimal design solutions for both system performance and maintenance gained from lessons learned on past projects.
- Expert technical staff will avoid vibrational and operational issues.

Hazen’s National Wastewater Pump Station Experience

Hazen has successfully completed wastewater pump station designs ranging in size from 1 to over 1200 mgd, using varied technologies including BIM. This page features a selection of our pump station experience.

Project Name	Client	Capacity (mgd)	Pump Type
GLWA PS-1	City of Detroit, MI	1200	Vertical Non-Clog, Extended Shaft
Newtown Creek - Brooklyn Queens PS	NYCDEP, NY	400	Vertical Non-Clog, Extended Shaft
Manhattan PS	NYCDEP, NY	400	Vertical Non-Clog, Extended Shaft
Bowery Bay Upgrade - Phase I	NYCDEP, NY	300	Vertical Non-Clog
Gowanus Canal PS	NYCDEP, NY	300	Submersible
Main St Pump Station	DC Water, DC	240	Vertical Non-Clog, Extended Shaft
Little Falls Pump Station	USACE, Baltimore, MD	225	Vertical Non-Clog
Walnut Creek PS	City of Raleigh, NC	200	Vertical Non-Clog
McMillan Pump Station	USACE, Washington, DC	180	Vertical Non-Clog Extended Shaft
26th Ward Interim Upgrade & BNR	NYCDEP, NY	170	Vertical Turbine Solids Handling
Walnut Creek PS	City of Raleigh, NC	160	Submersible, Vertical Turbine Solids Handling
Neuse River WWTP Influent PS	City of Raleigh, NC	160	Screw Pumps
Roanoke Regional WPCP Influent PS	Western Virginia Water Authority, VA	160	Screw Pumps and Vertical Turbines
Moccasin Bend WWTP Influent Pump Station Improvements	City of Chattanooga, TN	150	Vertical Non-Clog
Influent Pump Station and Preliminary Treatment Facilities	City of Columbia, SC	150	Screw Pumps Vertical Non-Clog, Extended Shaft
Influent Pump Station	City of Hollywood, FL	141	Vertical Non-Clog Extended Shaft
Roanoke WPCP Peak Flow Enhancement	Western Virginia Water Authority, VA	130	Vertical Non-Clog
Broadway PS Improvements	City of Dayton, OH	120	Vertical Mixed Flow Propeller
Injection Well Booster Pumps	Broward County, FL	113	Screw Vertical Non-Clog
South District WWTP Effluent PS	Miami Dade WASD, FL	112	Screw Pumps
South District WWTP Intermediate PS	Miami Dade WASD, FL	112	Vertical Non-Clog
Mauldin Rd WWTP Influent PS	ReWa, SC	110	Vertical Turbine
Riverside Road PS	Fulton County, GA	95	Submersible
NRWWTP Updating	Broward County Water & Wastewater Services, FL	95	Vertical Turbine Extended Shaft Vertical Non-Clog and Submersible, Progressive Cavity, and Rotary Lobe
Crabtree Creek PS	City of Raleigh, NC	80	Vertical Non-Clog
Avenue V PS	NYCDEP, NY	80	Vertical Turbine and Submersible
East Hollis Pump Station Preliminary Engineering Evaluation	City of Nashua, NH	78	Vertical Turbine and Mixed Flow Propeller; Submersible
TZ Osborne WWTP	City of Greensboro, NC	75	Submersible
Nansemond WWTP Nutrient Reduction Phase 1A Improvements and Upgrades	Hampton Roads Sanitation District, VA Haifa, Israel	75 74	Vertical Non-Clog, Extended Shaft Horizontal Non-Clog
Lesourdsville WWTP Improvements	Butler County, OH	70	Horizontal Non-Clog
Roanoke Regional WPCP EQ PS	Western Virginia Water Authority, VA	66	Vertical Mixed Flow Propeller
North Buffalo Transfer Station	City of Greensboro, NC	65	Horizontal Non-Clog
South Durham WRF	City of Durham, NC	60	Submersible
Beaver Creek PS	Cary, NC	60	Vertical Turbine Solids Handling
Piscataway Raw Wastewater PS	WSSC, MD	60	Dry Pit Submersible
Westside WWTP Phase 2	City of High Point, NC	54	Screw Pumps
Rivanna Pump Station	Rivanna WASA, VA	53	Screw Pumps
Thomas P. Smith WRF Intermediate PS	City of Tallahassee, FL	53	Vertical Turbine
Lower Rocky River PS	Water & Sewer Authority of Cabarrus County, NC	50	Screw Pumps
Cross Creek WRF Influent PS	PWC of the City of Fayetteville, NC	48	Vertical Non-Clog
Cross Creek WRF Intermediate PS	PWC of the City of Fayetteville, NC	48	Horizontal Non-Clog
Western Wake WRF	Town of Cary, NC	46	Horizontal Non-Clog
Rockfish Creek WRF Expansion Phase 2	PWC of the City of Fayetteville, NC	45	Vertical Turbine Solids Handling
O St Pump Station	DC Water, DC	45	Vertical Turbine
Injection Well Pump Station	City of Hollywood, FL	45	Vertical Turbine Solids Handling
West Cary PS	Cary, NC	44	Horizontal Non-Clog
Thomas P. Smith WRF Effluent PS	City of Tallahassee, FL	44	Vertical Turbine & Vertical Propeller
Beaver Creek PS	Town of Cary, NC	40	Horizontal Non-Clog
Northside WWTP Upgrade and Expansion	Cape Fear Public Utility Authority, NC	40	Extended Shaft & Vertical Non-Clog

1021-690

Hazen's Florida Wastewater Pump Station Experience

The Hazen team includes engineers who have led the design through construction oversight of over 100 wastewater pump stations in South Florida.

Our team is experienced in designing wastewater solutions and managing risk to plan for future uncertainties. **We have successfully helped the City of Hollywood and many other utilities evaluate alternatives and weigh risks through our design process, and we will continue to do the same for this project.** We will leverage our relevant experience along with our knowledge of the City's priorities to deliver pumping upgrades that optimize hydraulic performance, streamline maintenance, and improve plant operations.

Hazen has designed water and wastewater pump stations in Florida with a **total installed capacity over 2 billion gallons per day.** The pump stations range from new regional stations to rehabilitation of existing prefabricated pumping units.

Major capital investments of a water/wastewater utility include piping and pumping stations. Hazen has been designing these basic system elements for nearly five decades in the United States and overseas. A critical element of the design of these systems is proper selection of the pumps to ensure efficient and stable operation over the range of hydraulic conditions under current flows and the ability to meet future conditions for projected growth.

Our proposed project team includes engineers with design, permitting, bidding, and construction oversight experience for numerous wastewater pumping stations throughout Florida. We have included a list of these stations in the tri-county area. For all of these projects, Hazen has served as the prime consultant, providing multi-disciplinary services, including mechanical, instrumentation, electrical, remote telemetry/controls, and structural/architectural engineering.

Hazen has **designed**

120 

Wastewater pump stations
in the **tri-county area**

Hazen has **designed**

36 

Water booster and
high service pump stations
in the **tri-county area**

Team members being committed to this project are those that

Hollywood staff have worked with in the past and have come to trust.

Hazen has designed over 120 wastewater pump stations in the tri-county area.

The following list highlights select pump station projects in Florida, where Hazen served as the prime consultant, delivering multi-disciplinary services, including mechanical, instrumentation, electrical, and structural engineering.

Sampling of Pump Station Design and Construction Management Experience

Hollywood Utilities Department:

- Plant Influent Pump Station
- Hollywood Deep Well Pump Station
- South Lake Pump Station
- Hollywood Effluent Auxiliary Pump Station
- Filter Feed Pump Station In-line Return Sludge Pump Station
- Pump Station E-6 Rehabilitation
- Pump Station E-5 Rehabilitation
- Pump Station E-4 Rehabilitation
- Pump Station E-3 Rehabilitation
- Pump Station A-2 Rehabilitation
- Pump Station A-1 Rehabilitation
- Pump Station W-1 Rehabilitation
- Pump Station E-8 Rehabilitation
- Moffet Street/14th Avenue Pump Station

Fort Lauderdale:

- Effluent pump station, WWTP expansion
- Emergency repair of Coral Ridge Regional Pump Station to in-line booster facility
- Back-flush line booster pump station
- Fiveash WTP North High service pump replacements
- Poinciana Park and Second Avenue Water
- Pumping Station and Ground Storage Tank replacement

North Bay Village:

- South Treasure Drive Pump Station
- Main Pumping Station
- City Hall Pump Station
- Hispanola Pump Station

Port St. Lucie:

- Glades In-Line Booster Pump Station
- Northport In-Line Booster Pump Station
- Southport In-Line Booster Pump Station

North Miami Beach:

- Upgrades to 15 Pump Stations

City of Coral Gables:

- Upgrades to 13 Pump Stations

Tamarac:

- Rehabilitation of Pump Stations 2A, 14, 18A, and 24

Miramar Department of Public Works:

- Miramar Wastewater Booster Pump Station
- Lift Stations 3 and 5 Rehabilitation
- Miramar Master Pump Station
- Effluent Reuse Distribution Pump Station
- Filter Feed Pump Station
- Injection Well Pump Station
- Sludge Pump Station
- Plant Site Pump Station
- Lift Stations 2 and 11 Rehabilitation

Miami-Dade Water and Sewer Department:

- Pump Station 300 In-line Booster Pump Station Evaluation
- Booster Pump Station NT-10
- Virginia Key Effluent Station Upgrade
- North District Injection Well Pump Station
- Sewer Collection System Pump Station Evaluation and Repair Program
- Booster Pump Station 28-P1 Expansion
- Florida City Pumping Station (401-P1)
- Gateway Estates Pumping Station (401-P1)
- Country Club of Miami Booster Pump Station (7-P1)
- Aventura Booster Pumping Station (12-P3)
- Northeast Dade Pumping Station (12-P3)
- Andover Booster Pumping Station (10-P1)
- Golden Isles Pumping Station (12P1)
- Opa Locka Airport Booster Pump Station (8-P5)
- Miami Lakes Pumping Station (E-5)
- Palm Springs North Pumping Station (7-P2)
- Pumping Station (8-P2)
- Norland Pumping Station Modifications
- Miami Airport West

Homestead Public Works:

- WWTP 21-mgd Influent Pump Station
- Sewer Collection System Pump Station
- Evaluation and Repair Program

Sunrise:

- Injection Well Pump Station No. 3
- LS 309 Improvements

Broward County Water and Wastewater Services:

- Sunrise Pump Station (PS 410)
- Master Pump Station 424 – Collier Manor
- North Lauderdale Pump Station (PS 458)
- Lauderhill East Pump Station (No. 452) Rehabilitation to In-line Booster Pump
- Broward County Effluent Pump Station
- Palm Dale Pump Station 51
- Master Pump Station 454 – Tamarac East
- Master Pump Station 422 – Lighthouse Point
- District 2 Pump Stations
- Tamarac Regional 201 Pumping Station
- Master Pump Station 460 – Coral Springs West Conversion to Booster
- Master Pump Station 462 – Coral Springs East
- Master Pump Station 440 - Deerfield Beach
- Master Pump Station 450 – Lauderdale Lakes

Palm Beach County Water Utilities:

- System 9 North Regional In-line Booster Pump Station
- System 9 South Regional In-line Booster Pump Station Phase I
- System 5 Regional Pump Station
- Pump Station 5229 Upgrade to In-line Booster
- SRWRF 25-mgd Reclaimed Water Distribution Pump Station and Storage Tanks

Boca Raton Utility Services Department:

- Pump Station Rehabilitation Group I
- Reuse Pump Station

Loxahatchee River District:

- RAS pump station modifications
- Filter pump station
- Effluent pump station
- Reuse pump station upgrade

Hialeah Public Works:

- Upgrades to 22 Pump Stations

Plantation:

- Gulfstream Master Pump Station

Key team members **Patrick Davis, PE, J. Philip Cooke, PE, and Shajan Joykutty, PE, were integral to the City's 1999 influent pump station upgrade,** demonstrating Hazen's long-standing commitment and continuity of service to the City of Hollywood on critical infrastructure projects.

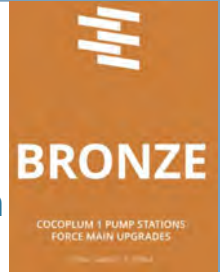
Hazen’s Florida Pump Station Experience - Project Spotlights

Similarities to City’s project:

- ✓ New electrical and instrumentation equipment
- ✓ Addresses sea level rise and resilience concerns



This project received a Bronze Certification in July of 2022



(the only wastewater infrastructure project in the state to receive this certification).

Cocoplum 1 Regional Pump Station and Force Main Improvements

Coral Gables, Florida

Cocoplum 1 Pump Station (PS) is a regional PS that re-pumps two upstream stations as well as flows from its own collection basin. To proactively upgrade the station to better accommodate peak flows, and increase system reliability and integrity, various mechanical, electrical and structural upgrades were performed. The improvements, require the existing duplex submersible station to be replaced with a 35 HP triplex submersible station with a capacity of 1.5 mgd. As the facility re-pumps flow from upstream basins, a 100 KW generator with diesel fuel belly tank was installed on top of an elevated structure with associated electrical equipment above the anticipated flood/sea level rise projections. Instrumentation improvements include the addition of a flow meter and force main pressure transducer. Operational data related to the pumps, flows, pressures and generator status will be reported back to the City’s SCADA via the new telemetry equipment. **The proposed improvements were designed and constructed in compliance with the Institute of Sustainable Infrastructure (ISI) Envision requirements.**

Similarities to City’s project:

- ✓ Uses multiple pumps operating on VFDs to handle variable flows
- ✓ Electrical upgrade including electrical building



This project included a **complete electrical upgrade** and a full instrumentation/control system upgrade.

City of Hialeah PS 6 Upgrades

Hialeah, Florida

Services included mechanical, structural, architectural, odor control, electrical and instrumentation disciplines. This regional station located in southeast Hialeah re-pumps flow from its own collection system as well as nine upstream pump stations. The station consists of four 90 HP submersible units with a capacity of 11.2 mgd. In order to pump peak and average daily flows efficiently, a four-pump arrangement was selected with VFDs.

1021-690

Hazen’s Florida Pump Station Experience - Project Spotlights

Similarities to City’s project:

- ✓ 90-mgd regional in-line booster station
- ✓ Multiple pumps utilizing VFDs to transfer flows under varying pressures
- ✓ New electrical building with generators



This pump station **plays a key role in re-pumping the majority of flows** from WASD and volume sewer customers (VSC) to the North District Wastewater Treatment Plant (NDWWTP) for treatment and disposal.

Miami-Dade Water and Sewer Department (WASD) Pump Station (PS) 1310

Miami-Dade County, Florida

WASD PS 1310 is the largest booster station in the WASD wastewater transmission system, located in the northern part of the County. The station, equipped with four 900 HP pumps, has a capacity of 90 mgd. Hazen provided hydraulic analysis, design involving all disciplines, bid document preparation, permitting, and engineering services during construction (ESDC) for the station and its 72-inch discharge force main. Key design features included slip recovery VFDs and two 1600 kW generators.

Similarities to City’s project:

- ✓ Uses multiple pumps operating on VFDs to handle variable flows
- ✓ New generator and electrical room



To limit the station’s above ground profile, the upper portion of the wet well was **converted to an electrical room** for the controls and VFDs.

City of Coral Gables PS City 2

Coral Gables, Florida

PS City 2 is the City’s largest regional at pump station with a capacity of 6.5 mgd. The station re-pumps flows from PS City 1 and the downtown area and business district. In order to improve station reliability/ ease of maintenance, Hazen’s design converted the station from a duplex wet/dry well station to a submersible triplex station with 75 HP pumps, lowering that station’s profile in the downtown area. As part of the upgrade process, the existing wet/dry wells were reused as a cost saving measure with the upper portion of the of the old wet well being converted to the PS control room. Hazen provided hydraulic analysis, bid document preparation, permitting and engineering services during construction (ESDC).

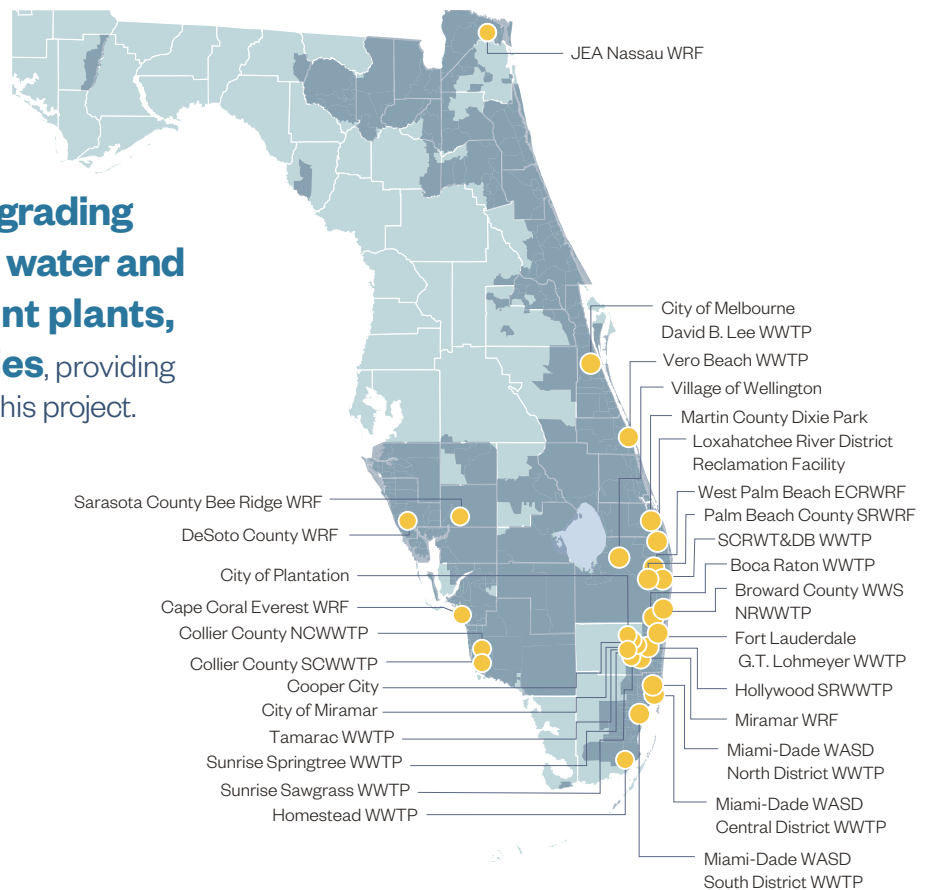
Hazen’s Florida Electrical Experience

The City needs a partner with proven experience in electrical upgrades.

Hazen is well-positioned to support the City of Hollywood in the electrical upgrades for the Southern Regional Wastewater Treatment Plant (SRWWTP) influent pump station. With a proven track record of completing over 3,000 water industry projects—including more than 82 water and wastewater treatment facilities across Florida—Hazen excels in delivering complex electrical solutions tailored to the water sector. Our expertise spans comprehensive electrical design and construction oversight, covering equipment such as low- and medium-voltage switchgear, motor control centers, variable frequency drives (VFDs), lighting, grounding, and lightning protection. For the SRWWTP project, we will evaluate and expand the Electric/VFD building to integrate new pump technology, ensuring resilient and sustainable upgrades in line with the Basis of Design Report.

The electrical upgrades for this project will be led by **John Burke, PE**, who brings 58 years of experience in the planning, design, project and construction management of power, control, and instrumentation systems associated with water and wastewater facilities and has previously worked with the City of Hollywood. The map below showcases select electrical projects from Hazen’s Southeast region.

We are experts in upgrading electrical systems at water and wastewater treatment plants, and pumping facilities, providing innovation and reliability on this project.



Hazen’s Florida Electrical Experience – Project Spotlights

Similarities to City’s project:

- Medium voltage switchgear
- Arc resistant switchgear



Hazen is the only firm that has taken a modern WASTD

Wastewater Treatment Plant Electrical Distribution Building from concept to in-service.

SDWWTP Electrical Distribution Building 2

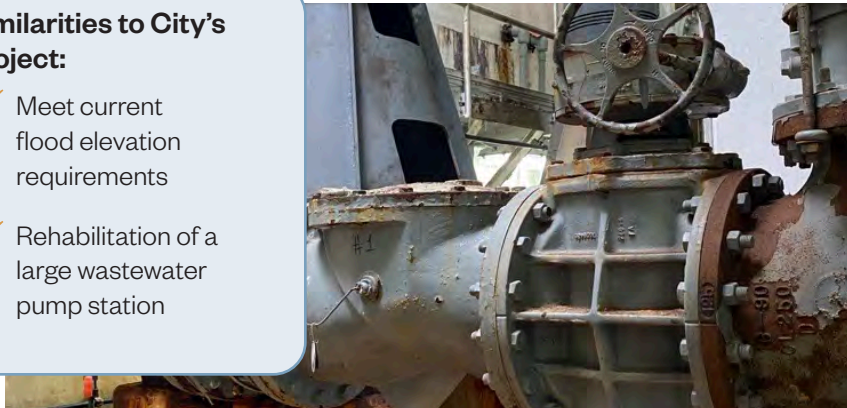
Miami-Dade, Florida

Hazen was involved in the planning, design, FPL negotiations, permitting, construction, and startup and operator training of WASTD’s SDWWTP Electrical Distribution Building 2 (EDB2). This building has served as the standard EDBs for which WASTD has been modeling their future EDB.

EDB 2 at SDWWTP is a 20 MVA building with 13.2 kV power distribution and seven generators with associated paralleling switchgear. During the design process, Hazen worked closely with WASTD to develop what has now become the standard for the EDBs currently being designed at WASTD WWTPs. This building has been in service for 12 years and has served as the model project on which other EDBs have based their design.

Similarities to City’s project:

- Meet current flood elevation requirements
- Rehabilitation of a large wastewater pump station



This project involved replacement of electrical facilities and diesel generator.

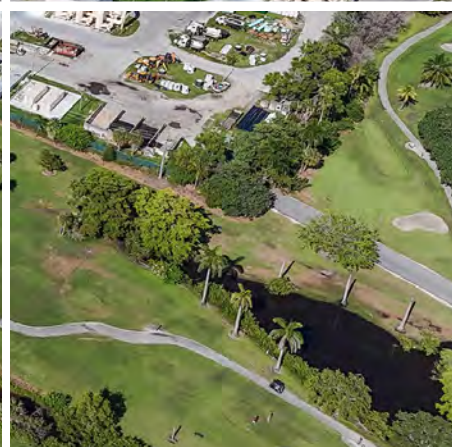
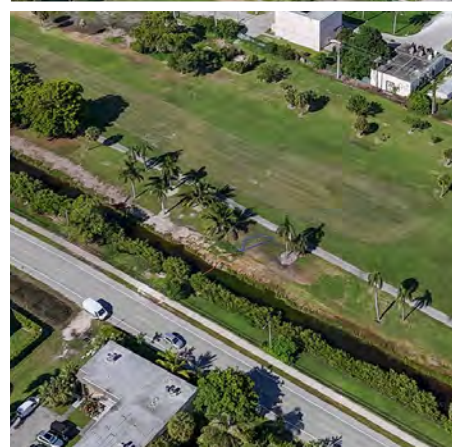
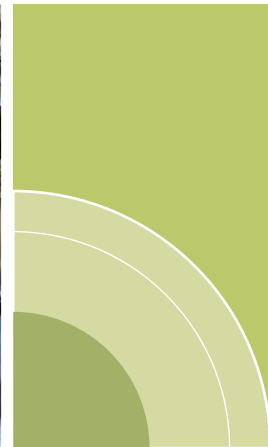
Pump Station No. 28 Upgrades

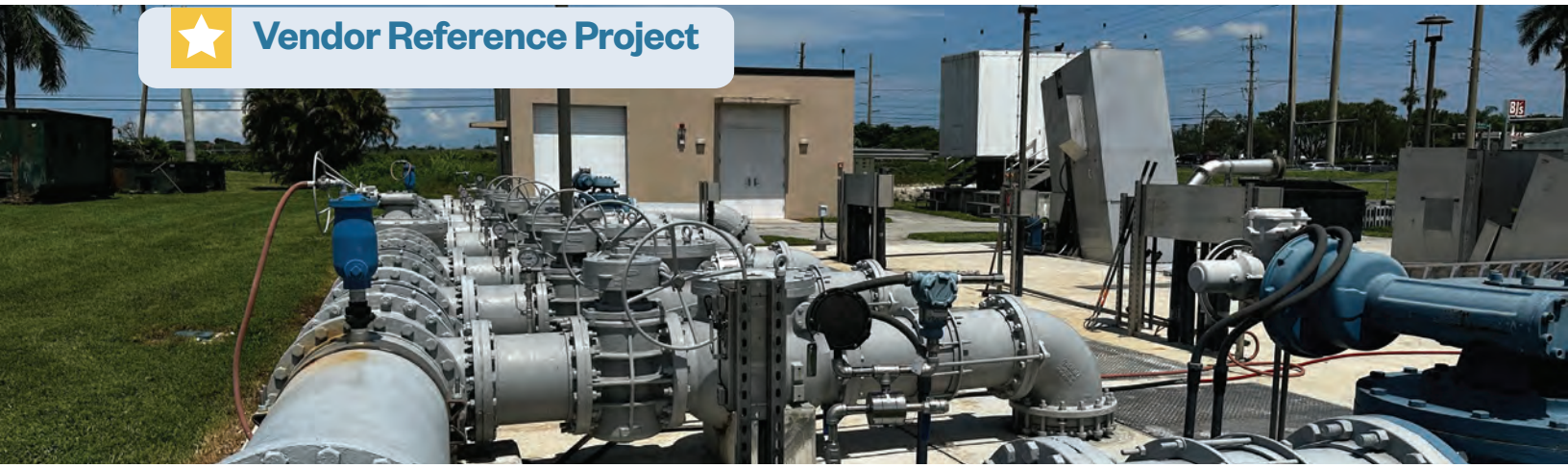
Miami Beach, Florida

Pump Station No. 28 is the largest wastewater pump station in the City of Miami Beach. The scope of the project includes the replacement of (3) 250 HP dry pit sewage pumps, (3) 350 HP booster pumps and all associated mechanical piping and valving, rehabilitation and hardening of the existing influent screening structure and dry pit below grade pump room, new odor control system, all new electrical systems, and 1,250 kW diesel generator and components housed in a new electrical/generator building that meets current flood elevation requirements. The project also includes the design of approximately 1,100 linear feet of 30-inch force main to replace an existing 40-year- old 30-inch force main that has reached the end of its useful life.

1021-690

Similar Project Experience





Influent Pump Station and Gravity Interceptor

Homestead, FL

The City of Homestead undertook a project to address wastewater collection challenges by eliminating a key pump station and implementing a gravity-based solution.

PS 1 exceeded the 10-hour runtime limit set by the Miami-Dade County Code, resulting in a moratorium for the entire western portion of the City, as PS 1 handles flow transfer to the WWTP. Expansion at its current location, shared by Florida City and Homestead, was unfeasible. Hazen developed a solution that eliminated PS 1, transferring flow via gravity to a new 21 mgd influent pump station (IPS) at the WWTP. The IPS delivers up to 12 mgd to the WWTP, with 9 mgd going to the MDWASD system.

The project involved installing a 36-inch gravity main from PS 1 to the WWTP and providing a stub-out to PS 21, allowing its elimination. Both PS 1 and PS 21 were converted into manholes. Construction of the gravity system occurred in 2014-2015, with the IPS awarded in 2016.

The IPS features multiple submersible pumps, screening channels, and a divided wet well with emergency isolation capabilities. Three 70-HP pumps deliver up to 12 mgd to

the WWTP, while three 165-HP pumps manage peak flows of up to 9 mgd to the MDWASD system. A 24-inch manifolded discharge header allows flexibility in flow distribution.

The electrical building houses VFDs, control panels, and an HVAC system designed to Category 5 standards. A 500-kW generator, with a 2,000-gallon tank, supports the station for up to 72 hours at full load. Instrumentation allows remote monitoring, and a new metering system tracks flow to both the WWTP and MDWASD.

Hazen managed this entire project, from design to construction oversight, ensuring compliance with permits and coordinating with regulatory agencies. The IPS was successfully completed in 2019, delivering a steady flow of 5.0 mgd to the WWTP and resolving the moratorium and runtime issues. The project improved wastewater management and enabled the City to overcome development restrictions in the western portion of the City.

Relevance to Hollywood

- New influent pump station with centrifugal pumps, equipped with variable frequency drives.
- Provided improvements that enabled the City to overcome development restrictions.
- Managed entirely by Hazen, from design to construction oversight, ensuring compliance with permits and regulatory agencies.

Project Duration

2014-2019

Project Cost

\$675,200 (total fee)
\$8 million (construction)

Client Reference

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North Regional Wastewater Treatment Plant (NRWWTP) Improvements

Broward County, FL

Hazen is providing design, permit, and bidding through construction oversight for five bid packages. Services also include preparation of a BioWin Process Analysis, Risk Assessment, a Condition Assessment, and a Capital Improvement Plan.

Fast Track Grit Removal

- Installation of the new grit removal system, including five Eutek headcell grit removal systems, a grit classifier system with odor control, and a grit electrical building.
- Demolition of four existing grit removal chambers and classifiers.
- Replacement of five existing influent screens and presses.
- Replacement of three multi-stage centrifugal blowers, motors, and ancillary equipment.
- Replacement of the digester system boiler/heat exchangers (eight units).
- Removal of six underground diesel fuel storage tanks, piping, and soil.
- Installation of two 30,000-gallon above-ground diesel fuel storage tanks and piping.

Effluent

- Injection Well Pump Station.
- Replacement of variable frequency drives for five 800 hp vertical turbine pumps.
- Replacement of five strainers and associated piping and valves.

- Ocean Outfall Pump Station mechanical, structural, and HVAC upgrades.

Solids

- Upgrades to the DAF system, removal and replacement of four floating digester covers, removal and replacement of one gas holding cover, and installation of five digester gas mixing systems.
- Installation of two centrifuges with grinders, sludge feed pumps, polymer units, and ancillary equipment.
- Electrical instrumentation and HVAC upgrades throughout plant.
- Replacement of pager system and site lighting.
- Replacement of two belt filter presses with grinders, sludge feed pumps, polymer units, and ancillary systems.

Biological & Ancillary Modifications

- Replacement of RAS/WAS pumps and associated appurtenances for four of five modules.
- Replacement of scum pumps and associated appurtenances for four of five modules.

Relevance to Hollywood

- Much of the same team as proposed for Hollywood, including mechanical, structural, electrical, instrumentation and subs for HVAC and survey.
- Major facility upgrades while maintaining plant in service.
- Complex phased approach to upgrading critical infrastructure at a large regional WWTP.
- Pump station upgrades, including VFDs and associated electrical gear.

Project Duration

2014-Ongoing. Some parts of this project have been completed. See below:

Fast Track (Phase III (1)): Design complete; currently in construction.

Effluent (Phase III (6) and Phase IV (6)): Design and construction complete.

Solids (Phase III (3)): Design complete; currently in construction.

Biological and Ancillary (Phase III (5)): Design complete; preparing for bid.

Project Cost

Effluent: \$10.8 million

Solids: \$56 million

Biological & Ancillary: \$32 million (est.)

Grit: \$29 million

Ancillary/Civil: \$5 million (est.)

Client Reference

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mdarmanin@broward.org



Stormwater Improvements - River Oaks Pump Stations

Fort Lauderdale, FL

This project, which includes design and construction of inlet and outfall pump stations, was an outgrowth of a \$200 million Capital Improvements Plan for urgent resilience infrastructure that Hazen developed as part of the City of Fort Lauderdale’s 2016 Stormwater Master Plan update.

The Capital Improvement Plan included design and construction of eight stormwater pump stations throughout the City. The River Oaks neighborhood was identified as a high priority for initial project implementation. For this neighborhood, the project included an inlet pump station (13 mgd), an outfall pump station (82 mgd), an electrical building, an emergency generator and considerations for future sea level rise, and incorporates Broward County 2060 100-year flood elevations. This project involved much of the same team proposed for the Influent Pump Station Upgrades, including Craven Thompson Associates and the geotechnical engineering team.

the River Oaks Neighborhood Stormwater and Pump Station Improvement Projects, a multi-million investment to reduce the neighborhood’s vulnerability to flooding. The main objective is to upgrade drainage systems, tackle flooding issues, improve water quality, and reduce the impact of heavy rain events in both the River Oaks and Edgewood neighborhoods. The City is also committed to preserving the natural beauty and sustainability of the neighborhood.



Relevance to Hollywood

- Incorporates resilient design to address climate change and sea level rise.
- Includes same mechanical, electrical, instrumentation, structural, survey, and geotechnical engineers proposed for Hollywood project.
- Large capacity pump station design with new electrical building.

Project Duration

2021-current (Design complete, Substantial Construction Completion scheduled for 12/2024)

Project Cost

\$10.3 million (construction)

Client Reference

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RPetrica@fortlauderdale.gov

1021-690



North District WWTP Electrical Distribution Building No. 3

Miami-Dade County, FL

Hazen is providing design and engineering services for the construction of Electrical Distribution Building No. 3 (EDB 3). This state-of-the-art facility will replace the existing Electrical Distribution Building No. 1 and ensure MDWASD has a more resilient and hardened wastewater treatment plant.

The new EDB 3 facility will be designed to be more resilient to storm surge and sea-level rise, and have an Incident Command Center (ICC) to provide a safe area for MDWASD staff to operate the NDWWTP during hurricanes.

For this project, one of the first tasks Hazen completed was the preparation of the Power Distribution Plan (PDP). This plan presented a conceptual overall site power distribution and included an updated list of electrical loads that would be connected to EDB 3. Hazen also evaluated this project via the Pre-Assessment Envision® Checklist and recommended to MDWASD the Envision® components that could be incorporated into the EDB 3 design. Envision® is a framework developed by the Institute of Sustainable Infrastructure (ISI) that encourages systemic changes in the planning, design, and delivery of sustainable, resilient, and equitable civil infrastructure through education, training, and third-party project verification.

Significant coordination with other ongoing projects on the site took place during the project. To the immediate east of EDB 3 is a proposed electrical building for the existing ocean outfall pump station. Hazen helped coordinate schedules and project delineations for these two projects that will be constructed during a similar time period. Another coordination effort included involved the Ocean Outfall Legislation Program. The Program's cooling water supply return loop (from the centralized water resource recover facility) will supply cooling water for the EDB 3's air handling units.

Hazen also evaluated the transition of electrical power during construction and commissioning of EDB 3. Because EDB 3 will ultimately handle the electrical loads from the existing EDB 1, both buildings will need to be operating simultaneously for a period of time while loads are transitioned. Hazen met with operational staff to walk through this step-by-step evaluation on how power will be maintained at the plant during this critical period.

Relevance to Hollywood

- Provides plan to replace an existing electrical distribution building while maintaining service.
- Designed the new electrical building to operate the WWTP during hurricanes.

Project Duration

2022-Ongoing

Project Cost

\$10 million (fee)

\$150 million (est. construction)

Client Reference

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 Miami-Dade Water and Sewer Department
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 nelson.perez-jacome@miamidade.gov

Hazen + Geosol, Inc., Hadonne Corp.,
 J. Bonfill & Associates, Inc., EBS Engineering, Inc.

WASD \$150M EDB at NDWWTP

3.9 Outstanding Performance!

Rating	Criteria	Score
4	Values: Design concepts or adherence to criteria.	4
4	Cooperation: Teamwork and relationship with owner, both on and off-site.	4
5	Coordination: Ability to organize, schedule, and complete tasks in adherence to the schedule.	5
5	Accuracy and Technical Skills: Cost estimating, scheduling, risk and other change orders, requests, project documentation, and contract resolution.	5
7	Compliance: Compliance with contract documents, permits, codes, and standards.	7
8	Responsiveness: Timely, clear and thorough responses to owner comments and correspondence.	8
9	Commitment: Intangibles and contribution to project success.	9
9	Personnel: Quality and dedication of project staff.	9
10	Management: Leadership ability.	10
10	Quality: Work performed conformed to the criteria.	10

OVERALL PERFORMANCE AVERAGE: 3.9



Wastewater Reclamation Facility Reuse Phase I Expansion to 7.5 mgd

Miramar, FL

The Reclaimed Water Expansion Phase I project included expansion of the existing 5-mgd reclaimed water treatment and distribution system processes to 7.5 mgd.

Hazen assisted the City in obtaining a paper upgrading of existing facilities from 4 to 5 mgd in late 2017. The Reclaimed Water Expansion Phase I project includes expansion of the existing 5-mgd reclaimed water treatment and distribution system processes to 7.5 mgd.

New facilities included two filter feed pumps, sand filters, expansion to the existing sodium hypochlorite system, a ground storage tank, and a high-service pump. Hazen provided design, permitting, bidding assistance, en-

gineering services during construction including inspection services.

Previously, in 2008, Hazen provided detailed design, permitting, bid and construction management services to expand the existing 2-mgd reclaimed water treatment and distribution processes to 4 mgd. Removal of all existing high service pumps, transfers and backwash pumps and repurposing of the pump building to house chemical feed storage and feed equipment.

Relevance to Hollywood

- Much of the same team as proposed for Hollywood, including mechanical, structural, electrical, instrumentation, and survey.
- Major facility upgrades while maintaining plant in service.
- Pump station upgrades, including VFDs and other electrical gear.

Project Duration

2017-2018 (design)
2019-2020 (construction)

Project Cost

\$5.5 million (construction)
(WWRF Phase I Expansion to 7.5 mgd)

Client Reference

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Northwest Wastewater Reclamation Facility Influent Pumping and Screening

St. Petersburg, FL

Hazen provided professional engineering design and construction services to improve the influent pumping and screening systems for the facility.

The liquid treatment process at the 20-mgd Northwest Wastewater Reclamation Facility (NWWRF) consists of two influent pump stations, a headworks with mechanical screening and headcell grit removal units, aeration basins, final clarifiers, filters, and a dual channel chlorine contact chamber, which utilizes liquid sodium hypochlorite. Effluent disposal is by two Class I underground injection wells with a permitted capacity of 32 mgd, or the effluent can be transferred to the Master Reuse System.

Hazen was retained to provide engineering design and construction services to improve the influent pumping and screening systems for the facility. The project is being constructed through a Construction Manager at Risk (CMAR) delivery method.

The specific components of the project include:

- A new coarse screening facility with a peak flow capacity of 30 mgd, two multi-rake bar screens and a bypass channel and washer/compactors. The coarse screening facility is located within a below grade room as part of the dry pit pump station to reduce odor potential from the site.

- A new dry pit pump station sized for peak flows of 30 mgd with the largest pump out of service with six equally sized 70 HP dry pit submersible pumps from two independent wet wells.
- A new fine screening facility with a peak flow capacity of 55 mgd with two center flow band screens and a bypass channel and washer/compactors.
- Aluminum covers on open channels and hatches for ease of maintenance.
- A new odor control system with biological trickling filter and second stage carbon polishing.
- A new electrical building with 750 kVA substation transformers serving the equipment.
- Demolition of the two existing IPS, the existing fine screening facility, and two aeration basins.
- Access and stormwater improvements
- Detailed maintenance of operations planning tailored to reduce impacts to plant operations and wet weather periods.

Hazen is seeking a Gold-Level Envision® Certification for this project.

Relevance to Hollywood

- Hazen delivered a new influent pump station design fit for peak flows of 30 mgd.
- Project provided new electrical building for the treatment plant.
- The project team implemented a plant-specific maintenance of operations plan to reduce impacts to plant operations.

Project Duration

01/2019-04/2021 (design)
04/2022-07/2025 (construction)
Construction is ongoing.

Project Cost

\$30 million (estimated);
Construction is still ongoing.

Client Reference

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Advanced WWRF Influent Pumping and Headworks Improvements

Largo, FL

The City of Largo owns and operates an advanced wastewater reclamation facility (WWRF) that is an 18-mgd AADF, high-rate, three-stage biological nutrient removal plant with discharge to surface water outfall and reclaimed water distribution system.

The City retained Hazen to provide design and construction services for the complete replacement of the advanced WWRF's three existing headworks structures and two existing dry pit influent pump stations. The design work also included a new flow equalization tank, separation of plant recycle flows, addition of a step-feed process for high peak flows, and improvements to the existing aerobic digestion and solids thickening process.

Headworks Replacement — The new headworks for the advanced WWRF includes the following design features:

- Two center-flow band screens, including screenings compactor/washer systems.
- Two stacked, multiple-tray, free vortex grit chambers (Headcell), that include cyclone separators and grit washers.

- A common screenings and grit dumpster room.
- Biofiltration odor control system for preliminary treatment.
- Field testing to determine grit and odor quantities and characteristics. Test data used to ensure correct sizing criteria for selected grit and odor removal systems.

Influent PS Replacement — The two existing influent pump stations at the advanced WWRF utilize below grade dry pit centrifugal pumps. The systems are very old and present numerous operational problems and safety issues. These stations are being replaced by a new submersible pump station that includes a course screen ahead of the pumps, dual wet well chambers, dual discharge pipes to handle a wide range of flows, and VFD-driven submersible pump.

Relevance to Hollywood

- Included the replacement of two existing influent pump stations by submersible pump stations.
- Provided design and construction management services.

Project Duration

02/2013-06/2015 (design)
04/2016-07/2018 (construction)
(change conditions not due to design issues)

Project Cost

\$3 million (fee)
\$24.1 million (construction)

Client Reference

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Master Pump Station 310 Relocation

Broward County, FL

Hazen prepared the Basis of Design Report to upgrade and replace Broward County's existing Master Pump Station 310 (PS 310) with an in-line booster pump station. Hazen also provided design services and construction oversight for the duration of the project.

PS 310 was an existing wet well/dry well type station that served District 3A. This district is generally located south of Interstate 595, east of SR 7, north of Stirling Road, and west of Interstate 95, including Fort Lauderdale International Airport facilities.

The upgrade and replacement of PS 310 was needed to provide ample hydraulic capacity for the Fort Lauderdale International Airport expansion and the anticipated extreme variability of wastewater flows associated with peak holiday travel periods. It was critical to maintain existing service throughout District 3A during off-peak travel periods. The replacement pump station site was selected along Anglers Avenue west of the airport in unincorporated Broward County since it offered fewer site limitations, eliminated the need for bypass pumping during construction, and allowed a design more typical of other in-line pump stations owned and operated by the County.

Hazen provided detailed design, regulatory permitting assistance, bid, award, construction period engineering, and startup efforts for the PS 310 "relocation" at the new site.

Major features of the new in-line pump station included:

- Three 100-hp horizontal non-clog "primary pumps" each at a nominal capacity of 2 mgd to accommodate airport peak holiday travel and high wet weather flow periods.
- Three 25-hp horizontal non-clog "jockey" pumps each at a nominal capacity of 1 mgd to accommodate typical Sewer District 3A flows.
- All pumps equipped with VFDs.
- Automatic discharge throttling valves to manage downstream force-main pressure variability impacts.
- Diesel engine generator with day tank.
- Seal water system.
- Air conditioning system for electrical room.
- On-site lift station.
- Programmable logic controller local control panel and radio link for remote monitoring and control.

Relevance to Hollywood

- Centrifugal wastewater pumps equipped with VFDs.
- Phased construction approach to maintain operation at all times.

Project Duration

04/2009–01/2016

Project Cost

\$505,000 (design fee)

\$513,000 (CMS fee)

\$3,258,000 (construction)

Client Reference

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Broward County Water and
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agarcia@broward.org



Master Pump Station 440 Modifications

Broward County, FL

Hazen’s services for MPS 440 included design, permitting, bidding, and/or construction management services for conversion of the pump station from an above ground wet well pump station to an in-line booster type station; capacity upgrades to meet future demand; hydraulic analyses; replacement of aging equipment; and preparation of an O&M manual.

In the late 1980s, Broward County initiated a phased program to convert its existing wet well/dry well type pump stations to in-line booster stations to address odor concerns, deterioration of the wet well concrete due to hydrogen sulfide gas, and increased maintenance of electrical equipment due to the corrosive nature of hydrogen sulfide gas. The conversion to an in-line booster configuration ameliorates these concerns.

In the early 1990s, Hazen designed the conversion of MPS 440 from an above ground wet well pump station to an in-line booster type station. This in-line conversion began operation in 1992.

In 2006 and 2010, Broward County retained Hazen to provide and update design criteria to upgrade the capacity of the pump station to meet future demands, and to refurbish equipment and structures at the end of their useful lives. In 2010, Hazen provided hydraulic analyses and detailed design services, including drawings, technical specifications, permitting, bidding, and construction man-

agement services. Hazen also produced a facility O&M manual.

Building off the previous conversion of the station from a wet well/dry well configuration to an in-line booster configuration, the resultant scope of the MPS 440 Modifications project included an increase in booster pump capacity and the addition of a smaller “jockey” booster pump for low flow conditions.

Major improvements included:

- Three 250-hp horizontal non-clog primary pumps, each at a capacity of 10.4 mgd.
- One 60-hp, 5-mgd horizontal non-clog jockey pump.
- All pumps equipped with VFDs.
- Diesel engine generator with day tank.
- Seal water system.
- New AC system for electrical room.
- On-site lift station.
- Programmable logic controller local control pane and radio link for remote monitoring and control.

Relevance to Hollywood

- Replacement of large capacity, centrifugal wastewater pumps.
- Upgrades to existing electrical equipment, including variable frequency drives and switchgear.
- Phased construction approach to maintain operation at all times.

Project Duration

09/2010–7/2015

Project Cost

\$412,502 (design fee)

\$454,221 (CMS fee)

\$866,723 (total fee)

\$3,096,000 (construction)

Client Reference

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agarcia@broward.org



City of Hialeah PS 106 Upgrades

Hialeah, FL

Hazen was tasked with the preliminary and detailed design, permitting, bid/award, and construction services related to PS 106 upgrades. Subsequently, Hazen provided Construction Management services.

As a result of new development within PS 106's service area, as well as the City's desire to reroute flows from the existing gravity trunk main discharging to MDWASD's PS 348, the City decided to upgrade PS 106. Upgrades required the installation of four 385 HP submersible pumps, three in-service pumps, and one standby pump to deliver the anticipated 21.6-mgd peak flow. As part of the upgrade, the following structural, electrical, and mechanical work was performed: Demolition of the existing above ground structure; Erection of an electrical/storage building; Conversion of the existing dry/wet pit into a wet well; Construction of a cast-in-place valve vault, requiring sheeting and dewatering to install; Installation of a new 1220-kW sound attenuated emergency generator and 2,000 gallon belly fuel tank; Complete electrical upgrade, including a new FPL transformer and instrumentation/control system upgrade; New paving and grading/other landscaping and site work; and New Biocube odor control system.

To house the proposed electrical equipment for the station, a building was constructed. It contains the VFDs responsible for controlling pump output and the transfer switch and

other equipment for facility operation. The electrical building is equipped with an HVAC system to provide optimal operation of the VFDs and other ancillary equipment.

As a cost-saving measure, the existing wet/dry well structure was reused; the wet well was gutted and surfaces repaired. 48-inch core drills between the wet well and the dry well were performed to link the two. A divider wall was constructed within the existing dry well and given an opening to allow influent to flow between the two chambers. The installation of sluice gates between the existing and proposed wet well chambers, and at the opening in the divider wall, allows half the station to be taken offline for cleaning/repair when warranted.

In addition to the monitoring of pump speed, unit operation, and other power related items, enhancement to the instrumentation included the following: Flow meter; Pressure transducer to monitor FM pressure; Intrusion alarms at the electrical building; Digital clocks capable of monitoring individual run hours, all pump on run hours, and 1-5 AM run hours for each pump, and; Generator operation/cool down and fuel level.

Relevance to Hollywood

- PS 106 was designed with divide wet well to allow for enhanced maintenance/cleaning.
- Replacement of electrical and instrumentation system necessary to meet proposed operating conditions.
- Coordinated extensive bypass system necessary to ensure uninterrupted sewer service.

Project Duration

09/2015-03/2019

Project Cost

\$231,933 (design fee)

\$231,180 (ESDC fee)

\$5,065,443 (construction)

Client Reference

Kevin Lynskey
 Director of Public Works
 City of Hialeah Public Works
 3700 West 4th Avenue
 Hialeah, FL 33010
 (305) 556-3800
 ktl23195@hialeahfl.gov



SFWMD S-8 Pump Station Modifications

West Palm Beach, FL

The project includes various improvements to S-8 Pump Station, which is part of the Central Everglades Planning Project North.

After the project kickoff meeting, and with input from South Florida Water Management District (District) stakeholders related to maintenance of operations considerations during construction, the team determined to phase the project, resulting in both a decreased critical path for construction as well as removal of risk associated with use of the exterior gantry crane for pump rehabilitation. With that decision, the Hazen team simultaneously advanced both design packages to result in a Final Phase 1 and Intermediate Phase 2 submittal just months after the kick-off meeting, meeting the original project schedule for the Intermediate Design submittal. Design development was also performed in parallel with negotiations for additional scope elements requested by the District based on stakeholder feedback, which differed from the original project scope.

Phase 1 consists of upgrading the 30-ton gantry crane used to hoist materials and rehabilitate the axial flow pumps under the Phase 2 project. This phase will consist of removal and reinstallation of the existing trolley, hoist, and doghouse structure installed under separate contract (Phase 0) by the District to address current operation-

al issues, as well as replacement of the existing corroded steel wide flange beams, drive motor, and other components of the crane. Hazen performed a field inspection of the facility and documented the presence of lead paint and the condition of the existing concrete support columns. After coordination with the District, it was determined to replace the existing structural members with new hot-dipped galvanized members to save cost and, more importantly, to limit the downtime of the facility.

Phase 2 involves comprehensive pump station rehabilitation to extend its service life. Axial flow pumps will be refurbished by the manufacturer, one at a time, and the vacuum priming system will be replaced with a new pump skid. Refurbishment includes dewatering bulkheads, replacing roller gates with stainless steel ones, and demolishing the fuel tanks, pumps, piping, and surrounding structures. A new fuel farm, with three composite tanks and associated equipment, will be built to the northeast, minimizing downtime. Coordination with Florida Power & Light is required to relocate a pole and transformer for site clearance.

Relevance to Hollywood

- Hazen implemented a phasing plan to ensure continuity of service throughout construction for one of the District's critical stations.

Project Duration

2023–Ongoing

Project Cost

\$49.1 million (est. construction)

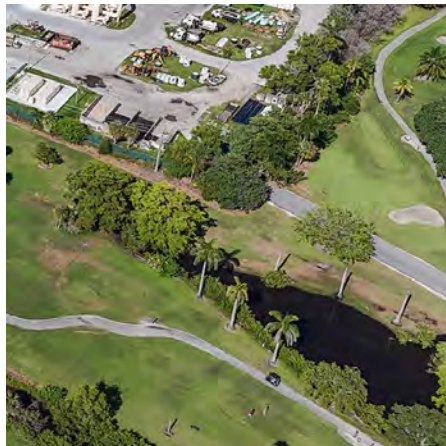
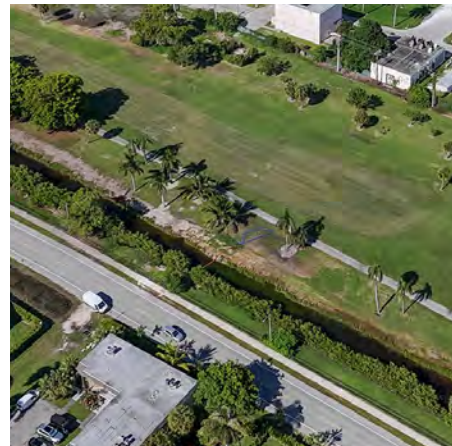
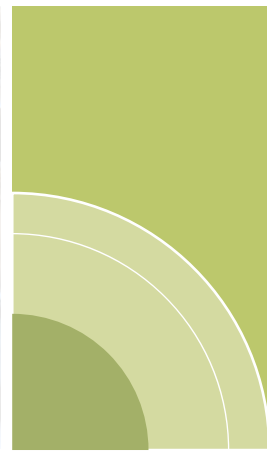
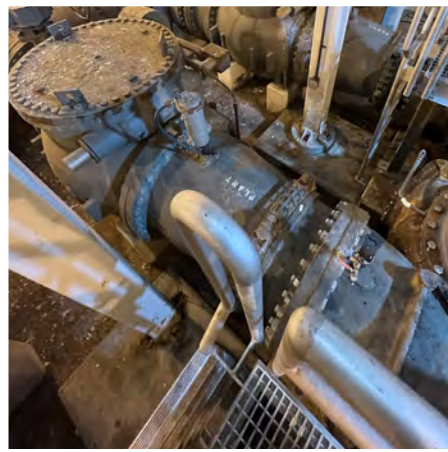
Client Reference

Matthew Alexander, PE
Project Manager
Engineering and Construction Bureau
South Florida Water Management District
3301 Gun Club Road
West Palm Beach, FL 33406
(561) 682-2580
malexand@sfwmd.go

TAB

D

Organizational Profile and Project Team Qualifications



D Organizational Profile and Project Team Qualifications

The Hazen team consists of key staff who have worked closely on City of Hollywood projects and possess a deep understanding of the City’s operational needs, processes, and procedures. This familiarity will significantly reduce the learning curve for completing the Influent Pump Station Upgrade.

Team Structure

Our team includes a variety of experts with a history of staff engagement gathered over years in performance of a number of previous studies and designs. The team has been streamlined to provide efficient and effective service. **J. Philip Cooke, PE**, will serve as Project Manager, providing project management and oversight and ensuring all necessary resources are available to the City of Hollywood for a successful project outcome. **He, along with many of our proposed team members, is located just 5 minutes from City Hall and is readily available to assist the City in addressing any challenges that may arise.**

Experience and qualifications summaries for Mr. Cooke and key team members are included in this section. Representative projects for which Mr. Cooke and our proposed team members have worked on together are included in Tab C.

Staff Engagement with the City's Current Projects

Hazen recently completed the Emergency Bar Screen Bypass Design **which will be a critical element** in the completion of the 72-inch pipe rehabilitation.



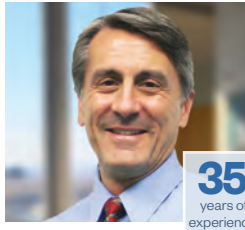
Experience with Previous Studies and Designs

Hazen recently finalized the City's Wastewater Master Plan and can provide institutional knowledge for the SRWWTP and regional system. **Understanding the plant processes are key to providing continuity of service during construction.**

Diverse Team for Comprehensive Building Improvements

Our Team includes a variety of experts in renewal and replacement of wastewater unit processes, including pumping, piping rehabilitation, electrical design, and HVAC upgrades. We will quickly identify project needs and offer the best alternatives for the City's budget.

Our key team members bring a wealth of experience in planning, wastewater treatment, and pump station operations specifically for the City of Hollywood.



J. Philip Cooke, PE
Project Manager

Mr. Cooke has managed and worked on Hollywood projects since 1990, with over \$25 million worth of wastewater projects in the past 7 years.



Patrick Davis, PE
Project Director

Mr. Davis began working on the City of Hollywood's water, wastewater and stormwater infrastructure 40 years ago. Through multiple assignments, he has gained a precise understanding of the City's water resource assets.



Chris Kish, PE, ENV SP
QA/QC

Mr. Kish has been involved in the evaluation, design, and upgrade of more than 70 wastewater pump stations.



Jennifer McMahon, PE
Mechanical/
Pumping Upgrades

Ms. McMahon brings extensive experience in the design and construction of pumping infrastructure. She currently serves as the SE Region lead for the Corporate Pumping Group.



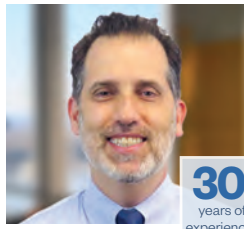
John Burke, PE
Electrical

Mr. Burke brings 58 years of experience in the planning, design, project and construction management of power, control, and instrumentation systems associated with water and wastewater facilities.



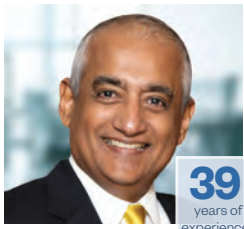
Charles Allaben, PE
Technical Advisor

Mr. Allaben has 33 years of experience, specializing in pump station design, performance testing, and troubleshooting. His portfolio includes the design of over 100 water, wastewater, and surface water pumping stations.



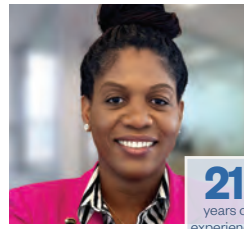
Evan Curtis, PE
Instrumentation

Mr. Curtis has worked on over 100 pump station I&C designs. As Hazen's Corporate I&C Discipline Group Leader, he develops I&C technical standards and resources shared across the firm.



Shajan Joykutty, PE
Structural/
Architectural

Mr. Joykutty is a structural technical expert, offering advice on structural engineering issues that come up during design and construction. He served as Structural Engineer-of-Record for the 1999 Upgrades to the Influent Pump Station.



Monique Durand, PE
Permitting

Ms. Durand has worked on several projects for the City of Hollywood and has extensive experience in the planning, design, permitting, and construction management of water, wastewater, and reuse facilities.



John Hoffman, PE
Construction
Management

Mr. Hoffman serves as Hazen's Southeast Region Senior Expert in large-diameter pipe design and construction. He served as Construction Manager for the 2002 Upgrade at the SRWWTP and is familiar with the process and daily operations.

With our extensive knowledge of your wastewater system, we can rapidly pinpoint risks, gaps, and needs—ensuring there's **no learning curve.**

Organizational Chart and Resumes

We have proposed individuals who are committed to the successful completion of the City’s influent pump station upgrade. Resumes for key staff are included at the end of this section. We have also included details on how each project team member will contribute to the project, in what capacity, level of involvement, and fields of expertise.



Subconsultant

- Metco Southeast, LLC (SBE/MBE)
- Gallagher Bassett Technical Services
- WIRX Engineering, LLC (SBE/MBE/CBE/DBE)
- Craven Thompson & Associates, Inc.

*** Key Personnel (resumes included)**

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Qualifications of our Project Manager

Our proposed Project Manager, J. Philip Cooke, PE, provides extensive City of Hollywood planning, treatment plant, and pump station experience. Mr. Cooke provided field inspections for the City’s 1999 and 2002 upgrades.

A representative sampling of Mr. Cooke’s experience is provided below (a comprehensive resume has also been provided). Our project management team members, as well as many of our other team members, reside in Broward County. The local presence of our team fosters a strong sense of responsibility and accountability, while also providing a logistical advantage in terms of familiarity and responsiveness.

He brings **in-depth familiarity and knowledge of the City’s facilities**, including its wastewater plant, wastewater collection, and transmission system.



J. Philip Cooke, PE

Project Manager

With 35 years of experience, Mr. Cooke has managed general consulting projects for Hollywood since 2006 and work for other clients including pre-design, design, permitting, rehabilitation, water resource planning, and construction management.



City of Hollywood SRWWTP Upgrades
\$26.21 million

Project Engineer

Project Highlights

- Process mechanical engineering support during design of upgrades, including modifications to a number of systems (i.e., biological treatment train addition, clarifiers).



City of Hollywood SRWWTP Headworks Rehabilitation and Replacement
\$6.24 million

Project Manager and Engineer-of-Record

Project Highlights

- Rehabilitation of headworks facility, replacement of bar screens, grit pumps, and slide gates, 72-inch diameter plant pipe lining, grit pipe replacement, bypass pumping, specialty coatings, structural/architectural modification, and lighting upgrades.



City of Hollywood Regional WWTP Influent Pump Station Upgrade
\$8.12 million

Field Investigator

Project Highlights

- Design, permitting, bidding assistance and services during construction associated with this pump station upgrade as part of a larger 1999 WWTP Upgrade Contract.
- Pumping capacity on a peak hourly basis was increased from 97 to 125 mgd.



City of Hollywood SRWWTP Effluent Recharge Treatment Pilot Study
\$2.98 million

Project Manager and Engineer-of-Record

Project Highlights

- This project evaluated an innovative treatment process, conceived, constructed, and operated by Hazen scientists and engineers, to cost-effectively treat saline effluents to a quality sufficient for recharging the Floridan aquifer in Broward County.

Project Performance

Our team possesses proven exemplary cost containment, minimization of change orders, and history of project completion within initial budget.

Hazen has been serving public clients for seven decades and understands the importance of being fiscally responsible. We understand that each project has a budget, and we incorporate cost-saving measures as part of the detailed design process to minimize construction costs. We will commence development of an opinion of probable construction cost from the 30% complete phase through final design (i.e., bid documents). The formulation of project costs will be estimated using Hazen’s construction database and recent bids. A range of anticipated costs will be prepared using procedures outlined by AACE International (formally the Association for the Advancement of Cost Engineering) professionals. Constructability reviews will also occur at the 30%, 60%, 90% and 100% complete documents to validate Maintenance of Plant Operations (MOPO) sequencing and further evaluate opportunities for cost savings, as applicable.

Project Name	Estimate (million)	Bid (million)	Difference
Hollywood Headworks Rehabilitation	\$6.7	\$5.9	11.9% ▼
Hollywood RAS Pump Station No. 2 Replacement	\$1.6	\$1.5	6.7% ▼
Hollywood Clarifiers 5-8 Flow Diversion Box Rehabilitation	\$1.43	\$1.37	4.2% ▼
Broward County North Regional WWTP (NRWWTP) Fine Bubble	\$28	\$26.9	3.9% ▼
Broward County NRWWTP Facility Improvements - Fast-Track	\$33	\$29.4	11% ▼
Broward County NRWWTP Facility Improvements - Effluent	\$11.8	\$10.9	8% ▼
Broward County NRWWTP Facility Improvements - Solids	\$61.2	\$55.9	8.7% ▼
Broward County NRWWTP Screening Gates and Lift Station Force Main Modifications	\$1.4	\$1.3	7.1% ▼
City of Sunrise SWWWTP Rehabilitation	\$11.1	\$11.0	1% ▼
Loxahatchee River District Deep Bed Filters	\$10.1	\$8.5	16% ▼
ECRWRf Biosolids Improvements	\$94.3	\$92.6	2% ▼
South Central Regional WWTP Expansion to 24 mgd	\$11	\$9.9	10% ▼
Fort Lauderdale Peele-Dixie Membrane Plant	\$30	\$26	13% ▼
Collier County SCRWTP 12-mgd RO Expansion	\$24.5	\$24.4	0.4% ▼
Fort Lauderdale Dixie Wellfield	\$9.0	\$8.9	1% ▼
Fort Lauderdale Dixie Raw Water Pipeline Replacement	\$3.1	\$2.3	26% ▼
Fort Lauderdale Floridan Aquifer Test Wells	\$3.4	\$3.4	0% -
Fort Lauderdale Fiveash WTP North High Service Pump	\$0.8	\$0.8	0% -
Fort Lauderdale Fiveash WTP Reliability Upgrades Phase 1	\$13.5	\$10.6	21% ▼
Cooper City Pine Island Road Pump Station	\$1.8	\$1.74	3% ▼

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Ability to Meet Schedule and Budget

The Hazen team understands the importance of maintaining schedule and budget and commits to meeting your schedule and budget requirements, and being responsive to your requests on every work assignment under this contract.

Cost control for the assigned tasks will be the responsibility of Mr. Cooke, who will use our company project tracking software tool, Deltek Vantagepoint. Mr. Cooke will have the ability to check project costs and labor expenses on a daily basis, if needed. In addition, he will track progress of team members as tasks are performed to verify progress matches the budgeted hours for each task. The City will be provided a detailed invoice each month along with a status report so that the City can verify progress on a monthly basis and be kept informed of any delay or possible cost issue before problems occur.

The table below shows a few examples of completed projects that were delivered to the client within budget and on time by our proposed team members.

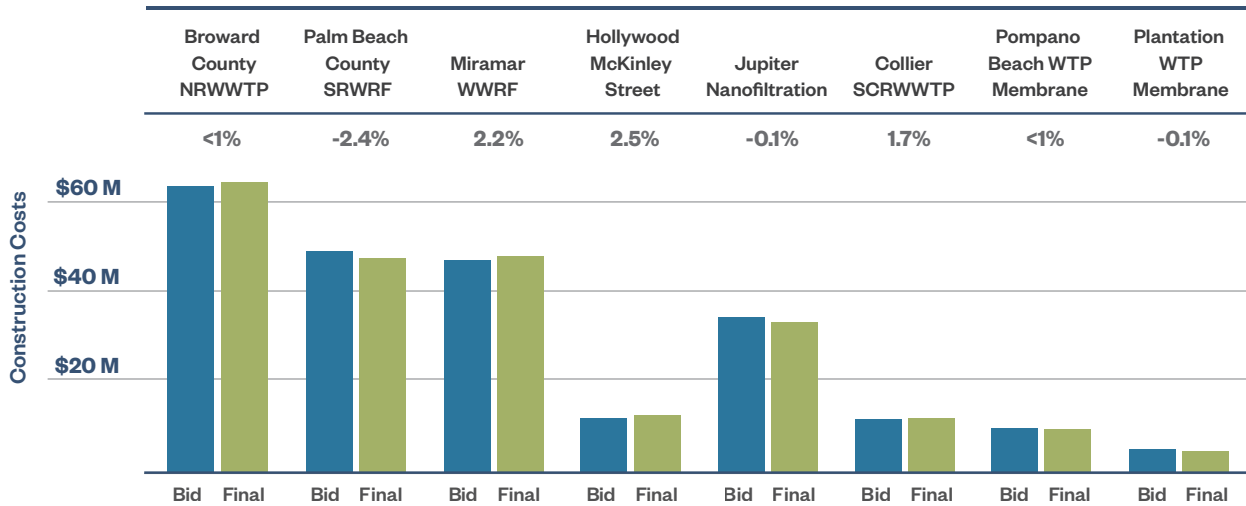
Our most experienced individuals lead our projects, which results in **efficient and timely** project development, implementation, and completion.

Client	Project	On Budget	On Schedule
City of Hollywood	Clarifier Nos. 5-8 Repair	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
City of Hollywood	Aquifer Recharge Pilot Study	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
City of Hollywood	PLC System Upgrade	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
City of Hollywood	Headworks Rehabilitation and Replacement	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
City of Hollywood	McKinley Street Interceptor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
City of Miramar	East WTP Renovations	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
City of Fort Lauderdale	Intracoastal Waterway Horizontal Directional Drill	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
City of Sunrise	Biosolids Management Improvements	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Broward County	WTP 3C Ground Storage Tank and Pump Station	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Broward County	Master Pump Station 440 Modifications	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
City of Delray Beach	Plant A Secondary Clarifiers and Stormwater Rehabilitation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Miami-Dade Water and Sewer Dept.	South District WWTP High Level Disinfection Project	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Cost Containment

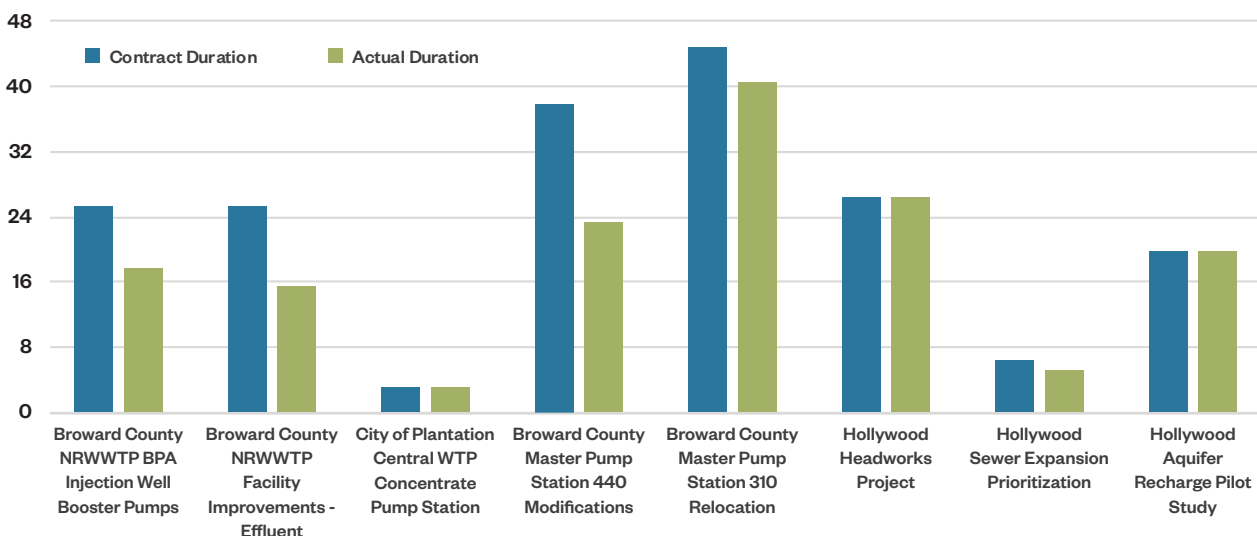
Our team has a strong track record of successfully delivering projects while effectively managing costs during the design and construction phases. Detailed construction cost estimates will be developed and submitted with each design milestone submittal. Hazen has a quality assurance and control procedure that ensures each deliverable is checked by qualified professionals in advance of submitting the documents to the City for review.

Hazen has a history of proven performance developing detailed design documents—this is critical for obtaining good construction bids and preventing potential change orders during construction. Project proofs are provided below.



Ability to Complete Projects on Time

The graphic below shows Hazen’s ability to complete project designs within the contracted allowable time. These projects span over a wide range of costs, including the Broward County Bid Package A Injection Well Pumps with a construction cost of over \$10 million and the Plantation Central WTP Concentrate Pump Station with a construction cost under \$300,000. Regardless of project size, Hazen is committed to meeting design schedules and delivering projects on time.



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Details on How Each Project Team Member Will Contribute to the Project

Our understanding of the City’s project’s goals translates into the selection of the most appropriate team that brings both experience and availability. The table below includes details of how each project team member will contribute to the project, in what capacity, level of involvement, and fields of expertise.

Name / Level of Involvement (Role) / Contribution	Fields of Expertise	Percent Availability
<p>J. Philip Cooke, PE / Project Manager Mr. Cooke provides an in-depth knowledge of the City’s infrastructure. He will serve as PM/primary point of contact and will coordinate efforts to ensure tasks are performed efficiently, on-time, and within budget.</p>	Project Management; Planning, Permitting, Design, and Construction Management of Water and Wastewater Projects; City of Hollywood Client Manager	50%
<p>Patrick Davis, PE / Project Director As Project Director, Mr. Davis will uphold the long-standing partnership with the City and ensure that all necessary firm resources are available to Mr. Cooke and team to ensure tasks are executed effectively.</p>	Project Oversight, Wastewater, Water, and Stormwater Facilities; Regulatory; Water Resource and Reclaimed Water Planning	20%
<p>Christopher Kish, PE, ENV SP/ QA/QC Mr. Kish will oversee the quality assurance and control process throughout the project. He has managed and designed over 70 wastewater pump stations in South Florida. Pump station design incorporates resilience features and maintenance of operations.</p>	Project Management; Pump Station Design; Construction Management; Master Planning; Pipeline Design; Hydraulic Analysis; Water and Wastewater Plant Mechanical Design	20%
<p>John Koroshec, PE / QA/QC Mr. Koroshec will oversee the quality assurance and control process throughout the project. He serves as a member of Hazen’s Southeast region’s QA/QC team as well as Hazen’s Southeast Region’s Corporate Wastewater Mechanical Design Group representative.</p>	QA/QC Procedures; Design and Construction of Water and Wastewater; Pumping and Treatment Facilities; Construction Supervision	20%
<p>Charles Allaben, PE / Technical Advisor Mr. Allaben will provide technical guidance on pump station design, performance optimization, and troubleshooting.</p>	Technical Guidance; Pump Station Design; Hydraulic Structure Design; Pumping System Evaluation; Plant Hydraulic Evaluations; Pump Intake Design	10%
<p>Eric Frieze / Technical Advisor Mr. Frieze will provide technical advisement, analysis, and coaching for equipment design, reliability, validation, and efficiency testing.</p>	Rotating and Electro-Mechanical Equipment; Equipment Design; Facilities/ Equipment Maintenance and Reliability; Equipment Maintenance and Repair Techniques; Emergency Response and Recovery	10%
<p>Jennifer McMahon, PE / Mechanical/Pumping Upgrades Ms. McMahon will be responsible for overseeing all aspects of the pump station’s mechanical systems and pumping technology upgrades. She is Hazen’s SE Region Lead for the Corporate Pumping Group.</p>	Wastewater Treatment, Collection, and Transmission; Wastewater Process Mechanical Design; Pumping Systems; Climate Resilience	50%
<p>Rachel Loffing, EI / Mechanical/Pumping Upgrades Ms. Loffing will support the Mechanical/Pumping Upgrades efforts.</p>	Wastewater Collection and Transmission Systems, Climate Resilience Permitting, Modeling	75%
<p>Evan Curtis, PE / Instrumentation Mr. Curtis will lead instrumentation and controls design for this project.</p>	Project Management; Instrumentation and Controls Design; Radio Communication Studies; SCADA System Design; Construction Phase Services; PLC and HMI Programming; Design/Build Services	50%

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Name / Level of Involvement (Role) / Contribution	Fields of Expertise	Percent Availability
<p>Alfredo Jimenez-Marcet / Instrumentation Mr. Jimenez will provide instrumentation and controls design support.</p>	<p>Instrumentation and Controls Systems, SCADA</p>	<p>75%</p>
<p>John Burke, PE / Electrical Mr. Burke will be lead electrical engineer and will ensure electrical work complies with applicable codes.</p>	<p>Electrical Design; Power, Control and Instrumentation Systems</p>	<p>50%</p>
<p>James Broad / Electrica Mr. Broad will participate in the design of instrumentation and electrical assignments for the City’s influent pump station.</p>	<p>Electrical Design and Inspections, Instrumentation and Controls, Start-up/ O&M Activities</p>	<p>75%</p>
<p>Jose Cano, PE / Electrical Mr. Cano will provide electrical support and will ensure electrical work complies with applicable codes.</p>	<p>Low and medium voltage power distribution systems; Power system analysis; Electrical construction administration; Existing electrical equipment data collection</p>	<p>75%</p>
<p>Shajan Joykutty, PE / Structural Mr. Joykutty will provide structural expertise for the City’s Influent Pump Station Upgrade. He will be responsible for assessing and overseeing the rehabilitation of the pump station’s structure, wet well, flow split, and pump room, ensuring they meet safety, durability, and design standards during the upgrades.</p>	<p>Structural Design of Water/Wastewater and Conveyance Facilities, Trenchless Technologies</p>	<p>50%</p>
<p>Jean Paul Silva, PE / Structural Mr. Silva will serve as structural engineer. He will be responsible for assessing and overseeing the rehabilitation of the pump station’s structure, wet well, flow split, and pump room, ensuring they meet safety, durability, and design standards during the upgrades.</p>	<p>Structural Analysis and Design, Concrete Design/Rehabilitation; Specialty Inspections, Condition Assessment</p>	<p>75%</p>
<p>David Bannett, PE, LEED AP / Civil/Stormwater Mr. Bannett will oversee the design and rehabilitation of site infrastructure related to stormwater management, ensuring proper drainage, flow control, and erosion prevention to support the upgraded pump station and surrounding areas.</p>	<p>Stormwater; Civil Engineering; Water, Sewer, Paving, Grading, and Drainage; Construction Management, Climate Resilience</p>	<p>50%</p>
<p>Lucia Medina, PE / Civil/Stormwater Ms. Medina will oversee the design and rehabilitation of site infrastructure related to stormwater management, ensuring proper drainage, flow control, and erosion prevention to support the upgraded pump station and surrounding areas.</p>	<p>Stormwater Planning and Management, Permitting, Hydrologic and Hydraulic Modeling, GIS, Wastewater Process Design, Climate Resilience</p>	<p>75%</p>
<p>Monique Durand, PE / Permitting Ms. Durand will coordinate permitting efforts at the State and local levels.</p>	<p>Project Management; Design, Permitting/Regulatory, and Construction Management; Master Planning</p>	<p>75%</p>
<p>Marta Alonso, PE, ENV SP / Grant Funding/SRF Coordination Ms. Alonso will provide grant application, grant management assistance, and SRF funding coordination; and manage disbursement requests. She will evaluate available funding options, including SRF funding.</p>	<p>Project Funding/Planning, Environmental Compliance/Permitting, Conveyance, Water and Wastewater Treatment</p>	<p>75%</p>
<p>Sharon Simington / Grant Funding/ SRF Coordination Ms. Simington will assist the City with its project funding needs.</p>	<p>Funding Management, Program Management, Project Management</p>	<p>50%</p>
<p>John Hoffman, PE / Construction Management Mr. Hoffman will be responsible for overall inspection and management of the project during the construction phase and will utilize his vast experience and knowledge to ease construction, saving time and money.</p>	<p>Construction Management, Constructability Design Reviews, Pipelines and Pump Stations, Pipe Rehabilitation Technologies, Wastewater System Design</p>	<p>100%</p>

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Name / Level of Involvement (Role) / Contribution	Fields of Expertise	Percent Availability
<p>Elie Andary, PhD, PE / Construction Management Mr. Andary will provide construction management and inspections services including, but not limited to, shop drawings and submittals review and processing, RFI responses review, participation in construction meetings, and quality control.</p>	<p>Construction Management, Quality Control, Water and Wastewater Collection and Treatment, Plant Commissioning and Equipment Startup</p>	<p>50%</p>
<p>Richard Pryce, PSM (Craven Thompson, & Associates) / Survey Mr. Pryce will oversee topographic survey needs for the project.</p>	<p>Survey and GIS Services</p>	<p>As required</p>
<p>Andrew Nixon, PE (WIRX Engineering) / Geotechnical Services Mr. Nixon will provide geotechnical engineering services for the project, including subsurface characterization for potential new structures, if required.</p>	<p>Environmental, Geotechnical and Construction Materials Testing Services; Geotechnical Reviews; Inspection and supervision of Testing Programs</p>	<p>As required</p>
<p>Gregory Stelmack, PE (WIRX Engineering) / Geotechnical Services Mr. Stelmack will provide geotechnical engineering services for the project, including subsurface characterization for potential new structures, if required.</p>	<p>Geotechnical and Materials Engineering; Materials Testing and Inspection; and CEI Services for Pump Stations</p>	<p>As required</p>
<p>Satya Vangala, PE (Metco Southeast) / HVAC Mr. Vangala will provide engineering services required for design, permitting, and construction administration associated with the ventilation and air conditioning for the entire Influent Pump Station and electrical room.</p>	<p>HVAC Design for Water and Wastewater Pumping and Treatment Plant Facilities</p>	<p>As required</p>
<p>Richard Grupenhoff (Gallagher Bassett Technical Services) / Lead Paint & Asbestos Survey Mr. Grupenhoff will oversee the lead paint and asbestos survey to fulfill requirements of the Florida Building Code prior to construction.</p>	<p>Lead Paint and Asbestos Survey Services. Senior Project Professional/ Southern Florida Operations Manager/ EPA Lead Risk Assessor</p>	<p>As required</p>

Team Members’ Time to be Assigned to this Project

Hazen considers the City of Hollywood a priority—so much so that we invested our regional headquarters here in 1968. **Should we be selected for this project, we commit that the individuals identified on the organizational chart will serve the City.** Hazen is conservative and conscientious when taking on new work assignments. We are careful in evaluating our ability to meet all existing demands, as well as the new ones, with the requisite quality each and every client deserves. Based on this approach, it is rare that we face competing priorities between multiple clients. However, if additional resources are necessary, Hazen maintains sufficient staff in our nine Florida offices in all of the necessary disciplines and also has the capacity to draw upon our firmwide staff members should an unforeseen circumstance occur or if specific expertise is required at the City’s request.

As Project Manager, Mr. Cooke will routinely meet with the assigned staff to make sure they have the availability to balance the workload, always placing the highest priority on the City’s project. Additionally, based on the nature, phase, or task being managed, the projected workload of project management activities will range from 5% to 50% over the course of the project. During the initial planning stages, a greater time percentage commitment may be required, and we commit to having the necessary resources available to the City.

Subconsultants/Subcontractors - portion of work subcontracted to any third party: HVAC Design: Metco Southeast; Topographic Survey: Craven Thompson & Associates; Geotechnical work: WIRX Engineering; Lead Paint and Asbestos Survey: Gallagher Bassett Technical Services.

1021-690



He has over 34 years of related experience, including working and managing City of Hollywood projects.

J. Philip Cooke, PE

Project Manager



Value to City of Hollywood

- Located in Hazen's Hollywood office to provide responsive service.
- Has managed general consulting projects for Hollywood since 2006, with over \$25 million worth of wastewater projects.
- Trusted advisor to City of Hollywood, providing assistance on a number of emergency projects related to the City wastewater treatment and transmission system.
- Participated in a variety of pump station and wastewater projects in South Florida.
- Extensive experience obtaining construction and operating permits with local, State of Florida, and federal regulatory agencies.

Education

ME, Environmental Engineering, University of Florida, 1990

BS, Environmental Engineering, University of Florida, 1989

Certification/License

Professional Engineer: FL #47137, NY #087901

Areas of Expertise

- Pump Station Rehabilitations
- Wastewater Treatment
- Wastewater Collection and Transmission
- Reuse
- Permitting
- Project Management

Experience

- 35 total years
- 34 years with Hazen

Professional Activities

American Society of Civil Engineers

Florida Engineering Society

Water Environment Federation

American Water Works Association

Construction Management Association of America

Mr. Cooke has over 34 years of experience and has directed the planning, design, and permitting of a variety of wastewater and pump station projects in South Florida.

He also has participated in numerous projects for the City of Hollywood's wastewater treatment plant, wastewater collection and transmission system, and reuse transmission system.

1999 Influent Pump Station Upgrade | City of Hollywood, FL

As Project Engineer, Mr. Cooke provided field inspections for the City's 1999 Influent Pump Station Upgrade. The upgrades included five new pumps with variable frequency drives, improvements for wet well isolation, rehabilitation of the wet wells, expansion of the existing electrical/control building, and lighting and ventilation modifications. These upgrades were designed and permitted by Hazen and included a complex phased sequence of construction to minimize disruption of plant operations, ensuring continuous treatment capacity.

Southern Regional Wastewater Treatment Plant (SRWWTP) Upgrades | City of Hollywood, FL

Serving in the roles of Project Manager, Project Engineer, and Client Manager, Mr. Cooke provided project management and process mechanical engineering support during detailed design for the SRWWTP upgrades project that included modifications to a number of systems. This high purity oxygen activated sludge system (HPOAS) facility was expanded from 48.75 mgd to 55.5 mgd. The \$20 million upgrade included the addition of a fifth HPOAS biological treatment train, addition of two secondary clarifiers, replacement of oxygen train aerators, and rehabilitation of secondary clarifiers 1-4.

J. Philip Cooke, PE

Wastewater Reclamation Facility Reuse Expansion to 7.5 mgd | City of Miramar, FL

Mr. Cooke served as Project Manager for the Miramar WRF expansion. Hazen first uprated the reuse facilities from 4 mgd to 5 mgd based on performance data and certification to FDEP. Next, Hazen designed the addition of a third filter bank to increase the facility to 7.5 mgd.

Wastewater Master Plan | City of Miramar, FL

Mr. Cooke served as Project Manager for the development of the 2023 Wastewater Master Plan for the City of Miramar that defines both short- and long-range planning goals, considering capacity needs, renewal and replacement requirements, and regulatory requirements.

Miramar Capacity Analysis and Up-Rating Report |

City of Miramar, FL

Mr. Cooke served as Project Manager for the capacity analysis, evaluation, and re-rating of the City of Miramar’s WWRF (Wastewater Reclamation Facility). This facility is currently rated at 12.7 mgd on an annual average day flow basis. This study was performed to determine the capacity required at the WWRF through the planning year 2045.

Southern Regional Wastewater Treatment Plant Reuse System Expansion Phase II | City of Hollywood, FL

In an effort to better serve existing customers and accommodate potential additional reuse customers, project work involved replacement of the existing reuse distribution pumps to provide increase system capacity. Once customer demands, process capacity, available storage, and system hydraulic constraints were evaluated, design of mechanical, electrical and structural upgrades to the existing reuse pump station were initiated and permitted through FDEP and BCRED. Mr. Cooke served as Project Manager.

Southern Regional Wastewater Collection and Transmission System | City of Hollywood, FL

As Project Engineer, Mr. Cooke drafted the design criteria package for two sub-aqueous horizontal directional drill (HDD) projects at the City of Hollywood’s E-02 and E-03 lift stations and served as Technical Advisor for the City during construction. Additionally, as Project Manager and Engineer-of-Record, he performed the pre-design and routing of a proposed 66-inch interceptor to parallel the aging 60-inch Taft Street Interceptor.

SRWWTP Reuse Water System Expansion, Phase 2 |

City of Hollywood, FL

Mr. Cooke served as Project Manager for this project that involved detailed design, permitting, hydraulic modeling, bidding, and limited construction management services for the Phase 2 Reuse Water System Expansion at the Southern Regional WWTP. Detailed design included replacement of three existing horizontal split case pumps with new 150 horsepower pumps, variable frequency drives, and a new air conditioning system for the electrical room.

McKinley Street 66-inch PCCP Pipeline | City of

Hollywood, FL

Mr. Cooke served as Project Manager and Engineer-of-Record for the McKinley Street wastewater transmission main, responsible for pre-design and detailed design, routing, and permitting. Now in service, this 6,400-foot-long, 66-inch interceptor is the main conduit for raw wastewater to enter the City’s 55.5-mgd regional wastewater treatment plant. Mr. Cooke provided technical services during construction for the project.

SRWWTP Headworks Rehabilitation and Replacement | City of Hollywood, FL

Mr. Cooke served as Project Manager and Design Engineer for this project that involved rehabilitation of headworks facility, replacement of bar screens, grit pumps, and slide gates, 72-inch diameter plant pipe lining, grit pipe replacement, bypass pumping, specialty coatings, structural/architectural modification, and lighting upgrades.

SRWWTP Effluent Recharge Treatment Pilot Study |

City of Hollywood, FL

As a result of 2008 legislative changes for utilities utilizing outfalls for effluent disposal, the implementation of required reuse facilities was estimated to cost SRWWTP customers \$400 million to \$1 billion. This project evaluated an innovative treatment process conceived, constructed, and operated by Hazen scientists and engineers, to cost-effectively treat saline effluents to a quality sufficient for recharging the Floridan aquifer in Broward County. The savings associated with using this process is estimated at approximately \$300 million over 20 years. Mr. Cooke served as Project Manager.

1021-690



Patrick Davis, PE

Project Director

Responsible for assigning all necessary resources to our Project Manager to complete this contract with the quality and timeliness the City expects.

45 YEARS EXP.

Yrs. with Hazen: 43 / Other Firms: 2



Christopher Kish, PE, ENV SP

QA/QC

Responsible for technical review of pump station design and permit applications.

30 YEARS EXP.

Yrs. with Hazen: 30 / Other Firms: 0

Value to City of Hollywood

- Has worked on a multitude of City of Hollywood utility projects since 1984 and brings a wealth of institutional knowledge to this assignment.
- Extensive experience in South Florida managing complex utility projects.
- Served as Project Director on over \$900 million of public works construction and has been involved in an engineering capacity on over \$1.6 billion of constructed local public works projects.

Education

BS, Civil Engineering, University of Massachusetts, 1980

Licenses/Registrations/Certifications

PE: FL #37167; NY #064682; MA #32299; VA #0402024518

Professional Affiliations

American Society of Civil Engineers; American Water Works Association; ASHRAE, NSPE, TAPPI; National AWWA Dual Distribution Committee; Water Environment Federation

Representative Projects

- **Multiple Projects, City of Hollywood, FL.** Has been directly involved in and/or in charge of the majority of Hazen projects for the City of Hollywood since 1984, and offers substantial institutional knowledge of the City's water/wastewater utilities systems. His experience with the City ranges from treatment plant, pumping station, wastewater collection and transmission system, reuse transmission system, and pipeline designs to high-level negotiations with regulatory agencies from Broward County to Tallahassee. Also served as Officer-in-Charge for the City's \$80 million wastewater treatment plant program, where he negotiated regulatory permitting with multiple agencies and performed strategic portfolio review leading to prioritization of capital improvements.
- **General Consulting Services, Broward County, FL.** As Project Director for General Consulting Services to Broward County, Mr. Davis oversees the continued construction of the NRWWTP SCADA Improvements and Generator 4 project. He also served as Project Director for the award-winning 3C Tank. Mr. Davis prepared and/or reviewed multiple effluent disposal analyses for NRWWTP, including the Effluent Disposal and Reclaimed Water Master Plan and the subsequent Ocean Outfall Detailed Plan Updates for FDEP.

Value to City of Hollywood

- Project Manager for more than 70 wastewater pump station projects throughout South Florida, overseeing preliminary design, detailed design, bidding, and construction administration.
- Responsible for permitting numerous new and rehabilitated pump stations to meet FDEP and FBC requirements, as well as recommendations for resiliency and climate change.

Education

BS, Civil Engineering, Florida International University, 1994

Licenses/Registrations/Certifications

PE: FL #55480

Professional Affiliations

American Water Works Association

Representative Projects

- **WWTP Influent Pump Station Gravity Main Installation, City of Homestead, FL.** Hazen was retained to design improvements that would eliminate the need for PS 1 and provide an influent pump station (IPS) at the WWTP. As Project Manager, Mr. Kish participated in/oversaw the evaluation, design and permitting (City, Miami-Dade County Public Works, FDOT) of the force main, as well as bid and award services. As Construction Manager, he reviewed shop drawings, conducted periodic field visits, approved payment applications, assisted with change order negotiation, was present for testing, reviewed as-built drawing and issued the certification of completion for the project.
- **City of Coral Gables Cocoplum 1 Pump Station (PS-CC1) and Force Main Upgrade, FL.** As Project Manager, Mr. Kish was responsible for conducting site visits to confirm as-built data, development of the basis of design report, plans/specifications, and permitting as well as bid/award services. The project involved improvements to the Cocoplum 1 Pump Station and discharge force main that required modifications to the station's mechanical, structural, electrical, and instrumentation systems. Hazen assisted the City in utilizing Envision® throughout the design and construction phases. In 2022, the project was awarded a Bronze Envision® award—the first in the State for a wastewater infrastructure improvement project.
- **Pump Station Improvement Program, City of Hialeah, FL.** As Project Manager, Mr. Kish participated in/oversaw the evaluation, design, and permitting of the pump stations and force mains, and provided bid and award services.



Charles Allaben, PE

Technical Advisor

Responsible for providing technical guidance on pump station design, performance optimization, and troubleshooting.

33 YEARS EXP.

Yrs. with Hazen: 1 / Other Firms: 32

Value to City of Hollywood

- Pumping system specialist with over 30 years of engineering experience.
- Experience includes involvement in the design of well over 100 water, wastewater, and surface water pumping stations ranging in capacity from a few hundred gallons per minute to several stations with capacities exceeding a billion gallons per day.

Education

BS, Civil Engineering, Michigan State University, 1992

Licenses/Registrations/Certifications

PE: WA #40146

Professional Affiliations

Hydraulic Institute (2001 to Present)

Representative Projects

- **Sugar Creek Wastewater Treatment Plant Influent Pump Station, Charlotte-Mecklenburg Utility District, Charlotte, NC.** Lead Design Engineer. The project involved a 200-mgd headworks pump station. Design included a vortex style drop structure located immediately upstream from four mechanically cleaned fine screens. The wet wells are parallel self-cleaning trenches. The station is equipped with 4-20 mgd low-head dry-pit submersible pumps for conveyance of plant influent flows for treatment and 7-20 mgd high head dry-pit submersible pumps for conveyance of wet weather flows to storage basins.
- **West Point Treatment Plant Raw Sewage Pump Station Capacity Increase, King County, Seattle, WA.** Lead Mechanical Designer. The project involved replacement of the raw sewage pumps at the West Point WWTP. The plant headworks pump station requires a capacity increase to provide a firm pumping capacity of 440 mgd to match plant treatment capacity. The 4 existing 110 mgd engine-driven pumps are being replaced with 4 -147 mgd electric motor-driven pumps.
- **San Bernardino Avenue Raw Wastewater Pump Station Design, City of Fontana/Inland Empire Utility Agency, Fontana, CA.** Lead Design Engineer. The pump station is a single self-cleaning wet well configuration with four vertical turbine solids handling pumps and dual force mains. The station has a firm pumping capacity of 15 mgd that is expandable to an ultimate design capacity of 50 mgd, which can be achieved through pump replacement.



Eric Frieze

Technical Advisor

Responsible for technical advisement, analysis, and coaching for equipment design, reliability, validation, and efficiency testing.

23 YEARS EXP.

Yrs. with Hazen: 3 / Other Firms: 20

Value to City of Hollywood

- Has served as Rotating Equipment Subject Matter Expert on numerous projects
- Areas of specialty expertise include design for maintainability, materials selection, startup/commissioning, and mechanical root cause analysis/problem solving

Education

BS, Mechanical Engineering Technology, Missouri Southern State University, 2001

AS, Computer Aided Manufacturing & Technologies, Missouri Southern State University, 2001

AS, Computer Aided Drafting and Design, Missouri Southern State University, 2001

Machinist Journeyman: Lamar Area Vo-Tech, Lamar, MO (1994)

Licenses/Registrations/Certifications


Vibration Analyst Level 3

ANSYS: Design Modeler; Work Bench Parts 1 & 2; FEA

EPA: 608 & 609


Representative Projects

- **Great Lakes Water Resource Recovery Facility Aeration Decks 1 and 2, Great Lakes Water Authority, MI.** Rotating Equipment and Materials of Construction Subject Matter Expert (SME). Provided method of approach direction and OEM equipment manufacturer liaison engineering in order to define targeted goals appropriate to develop equipment upgrade specifications and equipment selection criterion for upgrading and modernizing an intermediate lift pump station from 365 mgd to 400 mgd.
- **Mansfield Water Treatment Plant Improvements - Phase 1, City of Mansfield, OH.** Rotating Equipment and Materials of Construction SME. Provided method of approach and retrofit specification and requirement guidance per Hydraulic Institute (HI) standards including level 3 finite element analysis for a high service vertical turbine pump station.
- **Tarrytown Pump Station Rehabilitation (DSDC), Westchester County Department of Public Works, NY.** Rotating Equipment and Materials of Construction SME. Guided the resolution of an installation historically unable to provide equipment acceptance of 4 wet-pit submersible pumps 450 HP in size mounted horizontally in a dry well due to resonance vibration excitation forcing equipment vibration levels above HI 9.6.1. allowances.



John Burke, PE
Electrical
 Responsible for providing electrical services.

58 YEARS EXP. **Yrs. with Hazen: 20 / Other Firms: 38**



Jennifer McMahon, PE
Mechanical/Pumping Upgrades
 Responsible for providing mechanical/pumping engineering services for upgrades.

27 YEARS EXP. **Yrs. with Hazen: 20 / Other Firms: 7**

Value to City of Hollywood

- 57 years of experience in the planning, design, project and construction management of power, control, and instrumentation systems associated with water and wastewater facilities.

Education

BS, Electrical Engineering, University of Florida, 1966

Licenses/Registrations/Certifications

PE: FL #17301

Professional Affiliations

National Society of Professional Engineers; Florida Engineering Society; Institute of Electrical and Electronic Engineers

Representative Projects

- **Pine Island Road Pump Station and Storage Tank, City of Cooper City, FL.** Served as Electrical Engineer-of-Record for design and permitting. This \$1.8 million project included design of a new pumping station to convey water from an existing 2-mg water storage tank into the City’s transmission system at a pressure of 60 PSI. The pump station design included three horizontal split case pumps equipped with variable frequency drives. Pump 1 was a lower flow (700 gpm at 152 feet TDH) “jockey” pump. Pumps 2 and 3 were higher flow pumps (1,400 gpm at 160 feet TDH). Electrical design included new primary power, variable frequency drives, and a diesel engine emergency generator.
- **Gulfstream Master Pump Station Conversion, City of Plantation, FL.** Served as Lead Electrical Design Engineer for the conversion from wet well to in-line booster pump station, including the design of temporary electrical feed system to maintain plant operations continuously throughout construction.
- **South District Wastewater Treatment Plant High-Level Disinfect Project Effluent Pump Station, Miami-Dade Water and Sewer Department (MDWASD), Miami, FL.** Served as Electrical Engineer-of-Record for design of a new effluent pump station. The station included six 900-HP, 900 rpm 4160-v pump motors with medium voltage variable frequency drives. The station distribution system consisted of three 3750 Kva, 13.2 Kv-4160v transformers configured to allow both primary and secondary selectivity.

Value to City of Hollywood

- Extensive experience in the water and wastewater industry including project management; and civil, mechanical, and process design of wastewater treatment, transmission, and collection systems, and potable water treatment and distribution systems.
- Worked on numerous City of Hollywood projects, including projects at the SRWWTP.
- SE Region Lead for the Corporate Pumping Group.

Education

MS, Environmental Engineering, Georgia Institute of Technology, 1997; BS, Civil Engineering, Georgia Institute of Technology, 1995

Licenses/Registrations/Certifications

PE: FL #56800

Professional Affiliations

American Society of Civil Engineers

Representative Projects

- **SRWWTP Headworks Rehabilitation, City of Hollywood, FL.** Served as Project Engineer responsible for preliminary and detailed design for replacement of existing mechanical bar screens with new screens and washer/compactors, rehabilitation of grit chambers, improvements to the odor control system, and ancillary facilities.
- **Master Pump Station 440 Modifications, Broward County Water and Wastewater Services, FL.** Served as Project Manager and Lead Design Engineer for the upgrade of MPS (Master Pump Station) 440 in-line booster wastewater pumping station. Project responsibilities included management, preparation of updated basis of design report, preparation of detailed design documents, multidisciplinary design coordination, permitting, bid services, and construction administration.
- **RAS Pump Station No. 2 Replacement at SRWWTP, City of Hollywood, FL.** Served as Lead Design Engineer for replacement of RAS Pump Station No. 2 (firm capacity of 19.2 mgd and designed to be replaced in a phased approach to limit station downtime).
- **North Regional Wastewater Treatment Plant (NRWWTP) Facility Improvements Phase III (5) Biological, Broward County Water and Wastewater Services, FL.** Serves as Project Manager and Lead Design Engineer for improvements to the biological facilities at the NRWWTP.

1021-690



Shajan Joykutty, PE

Structural/Architectural

Responsible for providing structural engineering services.

39 YEARS EXP.

Yrs. with Hazen: 37 / Other Firms: 2



Evan Curtis, PE

Instrumentation

Responsible for providing instrumentation engineering services.

30 YEARS EXP.

Yrs. with Hazen: 23 / Other Firms: 7

Value to City of Hollywood

- Has served as Engineer-of-Record for most of the City of Hollywood's SRWWTP facilities constructed since 1988.
- 37 years of experience almost entirely in structural engineering, with a focus on the water and wastewater market.

Education

ME, Structural Engineering, University of Florida, 1987; BS, Civil Engineering, Indian Institute of Technology, 1984

Licenses/Registrations/Certifications

PE: FL #43323; NY #084436

Professional Affiliations

American Society of Civil Engineers; American Concrete Institute; Florida Engineering Society; Water Environment Federation; American Water Works Association

Representative Projects

- **SRWWTP Expansion and Upgrades, City of Hollywood, FL.** Served as Structural Engineer-of-Record (EOR) for the original plant expansion in 1988. Designed clarifiers, RAS facilities, and chlorine disinfection facilities with chemical scrubbers. Continued as Structural EOR for the subsequent plant expansion that included clarifier rehabilitation and new construction, effluent pump station wet well improvements, electrical building, and site work. Also served Structural EOR for the plant's 1999 and 2002 Upgrades. Other projects included inspection and condition assessment of 30-year old grit chambers, implementation of a sound attenuation system for the aerators at the WWTP, and rehabilitation of clarifiers and upgrades of the RAS pumping systems.
- **Stormwater Pump Station Upgrades, City of Hollywood, FL.** Responsible for structural design of stormwater pumping stations, pipelines, and street improvements for North Lake, South Lake, and Moffet Street drainage improvements. Projects included stormwater discharges into the Intracoastal Waterway, large-diameter HDPE stormwater pump station discharge pipelines installed below groundwater, and large stormwater pumping stations.
- **North District WWTP Expansion, Miami-Dade Water and Sewer Department (MDWASD), FL.** Served as Lead Structural Engineer for design and construction of the injection well pumping station.

Value to City of Hollywood

- Expert in the design of instrumentation and controls (I&C) for water and wastewater treatment and pumping facilities.
- Serves as Hazen's Corporate and Southeast Region I&C Discipline Group Leader.
- Develops technical standards and resources that are shared across the firm.

Education

BS, Civil Engineering (Minor in Environmental Engineering), Carnegie Mellon University, 1994

Licenses/Registrations/Certifications

PE: FL #69657; NY #095507

Professional Affiliations

Instrumentation, Systems and Automation Society; American Water Works Association; Florida Section AWWA, Past Chair of Automation Committee

Representative Projects

- **Stormwater Improvements – River Oaks Pump Stations, City of Fort Lauderdale, FL.** Served as QA/QC Reviewer for this project, where Hazen developed a \$200 million CIP for urgent resilience infrastructure as part of the City's 2016 Stormwater Master Plan update. The CIP included eight stormwater pump stations throughout the City. This project includes an inlet pump station (13 mgd), an outfall pump station (82 mgd), an electrical building, and an emergency generator, includes considerations for future sea-level rise, and incorporates Broward County 2060 100-year flood elevations.
- **Master Pump Station 440 Modifications, Broward County Water and Wastewater Services, FL.** Served as Lead I&C Engineer for the upgrade of MPS 440. Hazen's services for MPS 440 included design, permitting, bidding, and/or construction management services for conversion of the pump station from an above ground wet well pump station to an in-line booster type station; capacity upgrades to meet future demand; hydraulic analyses; replacement of aging equipment; and preparation of an O&M manual.
- **Broward County North Regional WWTP Facility Improvements – Solids, Broward Water and Wastewater Services, FL.** Served as Quality Control Reviewer. Provided quality control review services for the current design of the Phase III (3) Solids project, with an estimated construction cost of \$64 million. Improvements include replacement of aging solids thickening, digestion and dewatering equipment and facilities.



Monique Durand, PE

Permitting

Responsible for providing permitting services.

21 YEARS EXP.

Yrs. with Hazen: 21 / Other Firms: 0



John Hoffman, PE

Construction Management

Responsible for providing construction management services.

48 YEARS EXP.

Yrs. with Hazen: 41 / Other Firms: 7

Value to City of Hollywood

- Experience providing design through permitting services for the City of Hollywood as well as served as an in-house consultant for the City of Hollywood's Utilities Department.
- More than 20 years experience in the planning, design, permitting, and construction management of water and wastewater treatment facilities.

Education

MS, Environmental Engineering, Virginia Polytechnic Institute and State University, 2005; BS, Environmental Science, Midwestern State University, 2003

Licenses/Registrations/Certifications

PE: FL #71393

Professional Affiliations

American Water Works Association; Water Environment Federation

Representative Projects

- **Permit Compliance, City of Hollywood, FL.** Served as Project Engineer for implementation of several Facility Permit Administrative Order tasks for the City of Hollywood Wastewater Treatment Plant. Specific tasks included development of a Disinfection and Toxicity Plan of Study, and development of the Influent Flow Accuracy Study and the Total Nitrogen and Total Phosphorus Status Compliance Report.
- **FDEP Wastewater Facility Permit Renewal for City of Hollywood and Broward County, FL.** Served as Project Manager and Lead Project Engineer for the preparation of the Florida Department of Environmental Protection (FDEP) Domestic Wastewater Facility Operating Permit Renewal Application package for the City of Hollywood Southern Regional Wastewater Treatment Plant and Broward County North Regional Wastewater Treatment Plant.
- **McKinley Street Interceptor Project, City of Hollywood, FL.** Project Engineer for the design of a 66-inch gravity interceptor pipe. Project responsibilities included preparation of detailed design calculations for the gravity interceptor, interconnecting force mains and manholes, evaluation of utility conflicts to determine viable pipe routes, preparation of detailed design/bid drawings and technical specifications, preparation of permitting submittals. Also participated in construction services.

Value to City of Hollywood

- Southeast Region Senior Expert in large-diameter pipe design and construction.
- Over 48 years of construction and design experience with public works infrastructure.
- Provides QA/QC and constructability reviews on the design of water and wastewater pipeline/pump station projects.

Education

BS, Civil Engineering Technology, Florida International University, 1980

Licenses/Registrations/Certifications

PE: FL #37283; NY #91013

Professional Affiliations

American Society of Civil Engineers; American Water Works Association; Underground Contractors Association; Board of Directors: 1993-1994

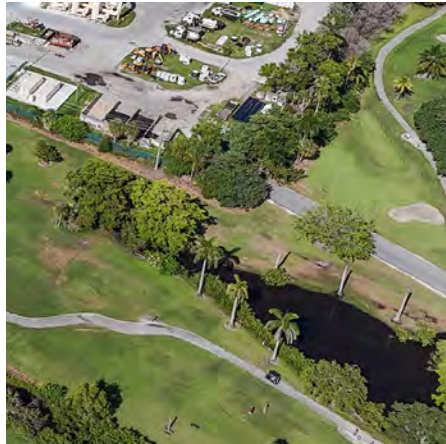
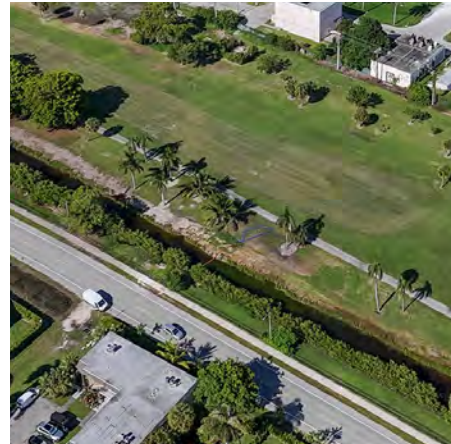
Representative Projects

- **High-Level Disinfection Project, Miami-Dade Water and Sewer Department, Miami-Dade County, FL.** Mr. Hoffman led Hazen's construction management services for the \$618 million 285-mgd High-Level Disinfection Project for Miami-Dade County. The project consists of 14 separate contracts of which Mr. Hoffman is in charge of six: Site Preparation, Construction Office Facilities, Filters, Transfer Pump Station, Electrical Distribution Building and OSHG Facilities. The project was completed ahead of schedule and under budget.
- **Southern Regional Wastewater Treatment Plant Upgrade, City of Hollywood, FL.** Provided construction management services for this \$21 million upgrade that consisted primarily of expansion of the oxygenation and clarification facilities to improve reliability and allow capacity uprating to from 45 to 55 mgd. He oversaw all construction activities including, but not limited to, reinforced concrete, reinforced masonry, underground piping, pump installation with associated flange piping, electrical duct banks, and rehabilitation of four clarifiers, three O2 trains, 42-inch meter installation, and instrumentation. Also conducted progress meetings and community outreach meetings; responded to RFIs, RFPs and RFCs and coordinated construction activities with the Operations Department; supervised the inspection staff and coordinated with third-party inspectors.

TAB

E

Approach to Scope of Work



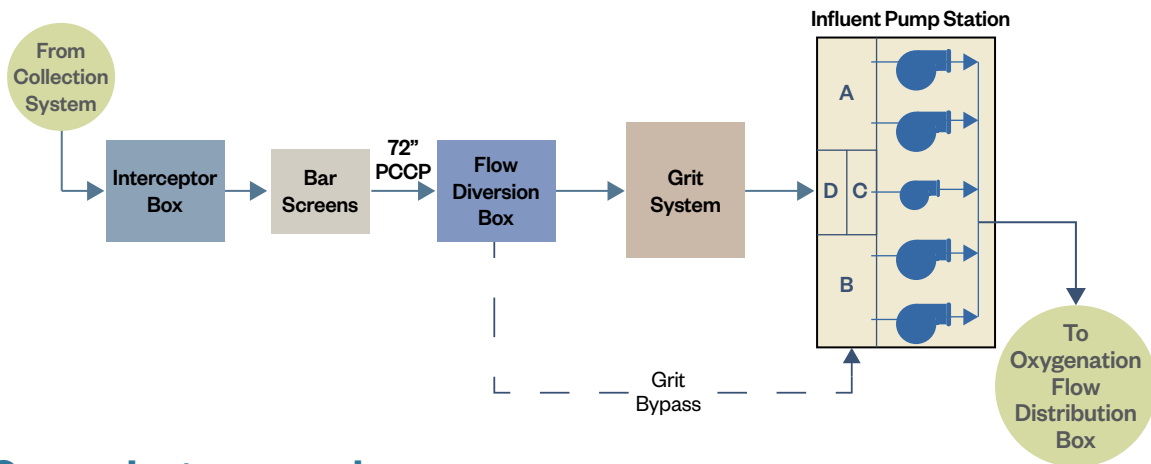
E Approach to Scope of Work

Hazen provides deep institutional knowledge and is best equipped to ensure the upgrades to the Influent Pump Station are completed cost-effectively while minimizing interruptions to plant operations and reducing risk.

Project Understanding

Installed in 1968, the Influent Pump Station (IPS) of the Southern Regional Wastewater Treatment Plant (SRWWTP) is in need of a complete rehabilitation and upgrade. Previously addressed under the 1999 Upgrade project, the mechanical equipment and structural coatings are approaching the end of their service life. The City is proactively embarking on the project to perform structural rehabilitation of the pump station pump room and wet wells, and to replace the associated mechanical, electrical, instrumentation, and HVAC equipment. Expansion and/or replacement of the electrical building housing the variable frequency drive units are also being considered. In addition, evaluation and potential rehabilitation of the 72” screen chamber effluent pipe and flow diversion box are also needed.

The Hazen team’s institutional knowledge and experience provides unique insights that will be key to **reducing risk while implementing a cost-effective and timely approach.**



Our project approach addresses each key area:

- Design Basis Development
- Maintenance of Plant Operations (MOPO)
- Value-Added Strategies

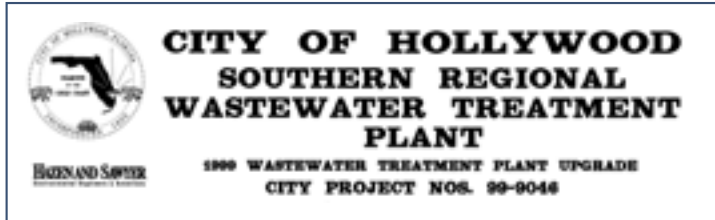
Hazen has a complete understanding of the project’s scope of work and the City’s goals and objectives for upgrading the IPS to ensure reliability, improve performance and facilitate maintenance. Hazen’s approach to successful implementation of the project is focused on three key areas, which are discussed in further detail on the following pages.



J. Philip Cooke, PE, will manage the project as a trusted advisor to the City, having managed general consulting projects for Hollywood since 2006.

Design Basis Development

With the responsibility of conveying all raw sewage collected in the Southern Region to the treatment system, the IPS is possibly the most critical unit process at the SRWWTP. As such, failure of the IPS presents a significant risk to the surrounding residents and the City as a whole. By extension, this makes the Design Basis equally critical to the project.



Hazen designed the 1999 IPS upgrades and recently completed design of the emergency bar screen bypass and grit removal projects.

This project history provides Hazen with a unique insight that is key to reducing risk while implementing a cost effective and timely approach. **As discussed below, our design basis would include the following:**

- **Hydraulic Conditions**
- **Operational Strategy**
- **Pump Selection**
- **Dynamic Analysis**
- **Electrical Systems**
- **Climate Resiliency**

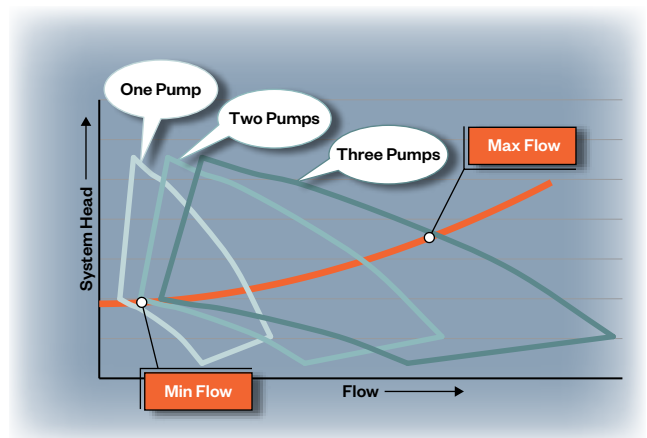
Hydraulic Conditions: Hazen has reviewed the existing system and developed preliminary system curves based on minimum and maximum hydraulic conditions. Minimum hydraulic conditions consider 2025 low flows while maximum conditions anticipate 2045 peak flows.

Operational Strategy: Given the critical function of the IPS, determining the appropriate level of redundancy greatly impacts pump selection. Under the 1999 Upgrade, Hazen sized the five existing pumps such that three pumps can accommodate peak hour flows with one pump on standby while one pump is down for maintenance. This conservative approach minimizes risk and ensures continuous operation under a wide variety of operation failure scenarios.

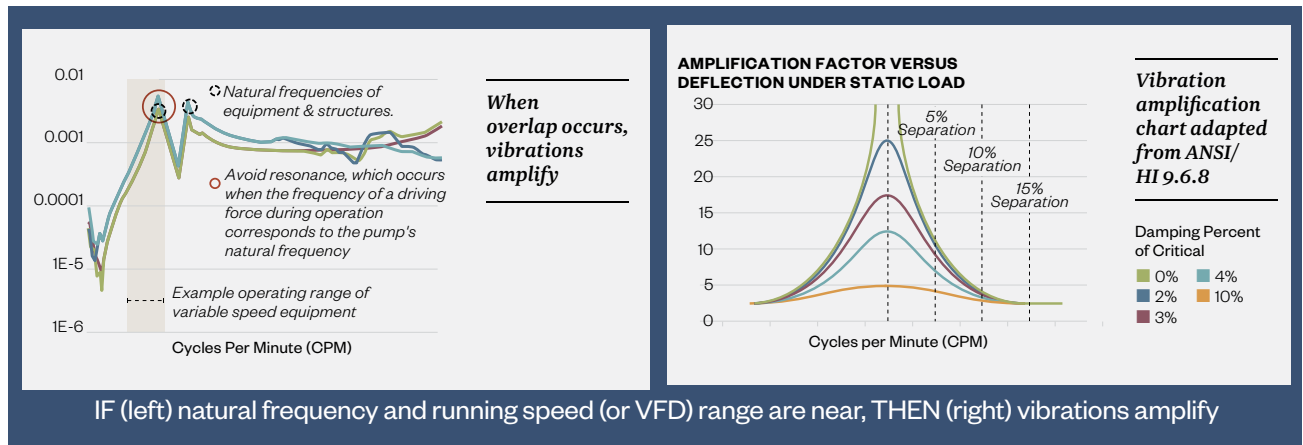
Pump Selection: A review of available pump technologies must consider the system’s high flow and relatively low head for screened wastewater service and constrained pump room space, which limits pump selection. It is also noted that the pump room for the IPS is located below the 100-year flood elevation. The existing pump type (vertical centrifugal solids handling) can be replaced in kind, with extended shafts and motors mounted on the upper floor. Alternatively, the existing pumps can be replaced with dry pit submersible pumps that are appropriate for flood-prone applications and can be installed in tight areas. Hazen has developed a preliminary system curve for the IPS and overlaid it with a 3+2 operating scenario. The City may elect to continue with this approach or proceed with a 4+1 operating scenario, which accommodates 2045 peak hour flows assuming one pump is out of service.



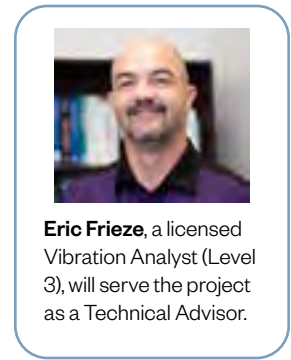
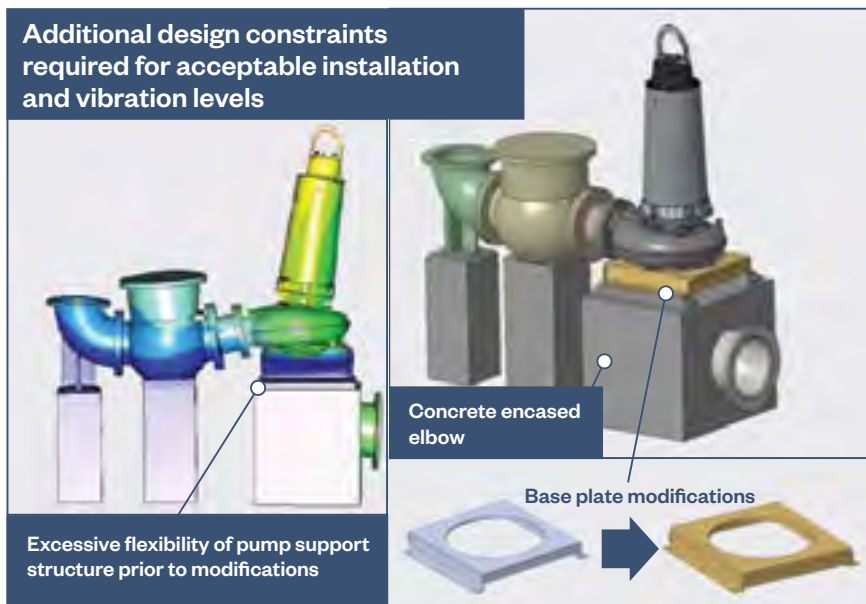
Jennifer McMahon, PE, brings her experience with the Southern Regional WWTP and knowledge as Hazen’s SE Region Lead for the corporate pumping group to head the mechanical and pumping upgrades.



Dynamic Analyses: Large pumps with vertical motors are particularly prone to vibration issues. Vibration issues may present themselves in the form of structural lateral vibration (pump movement perpendicular to the shaft causing foundation or piping failure), rotor torsional vibration (causing fatigue failure), and rotor lateral vibration (causing structural failure). It is essential that a Dynamic Analysis in accordance with the Hydraulic Institute (HI) Standard ANSI/HI 9.6.8 – Guidelines for Dynamics of Pumping Machinery is performed to determine the potential for a critical natural frequency occurring within the operating speed range of the pumps. Dynamic analyses address the potential for vibration and negative operating issues for pumping applications.



Hazen has developed a tool to facilitate the application of the HI recommendations that quantifies the degree of risk and level of uncertainty to indicate the required level of analysis. Based on the anticipated motor horsepower and pump speed for the IPS, a Level 3 Lateral Analysis, Level 2 Torsional Analysis, and a Level 3 Structural Analysis are recommended. The results of these analyses will indicate how the design, the equipment, and the installation may need to be modified to mitigate potential vibration issues. For example, changes might be required to the pump impeller mass to decrease load on pump bearings or changes may be required to pump foundation piers to increase their rigidity, mass, or interface with the existing floor slab. The graphics below show how pump designs and installations can be reinforced to account for the results of a dynamic analysis evaluation.



1021-690

Electrical Systems: A review of the existing control building housing electrical gear for the IPS is warranted. The variable frequency drives were replaced in 2019 by retrofitting the existing enclosures; however, additional efforts are needed to address the remaining electrical components, HVAC system, and, potentially, the exterior doors and roof. Options for this facility include:

1. Upgrading the existing building
2. Expanding the existing building
3. Constructing a new building

Field verification of the existing building and equipment for compliance with current Florida Building Code, National Electrical Code, and the National Fire Protection Association requirements is necessary. Expansion of the existing building in the east or south direction will be evaluated if additional space is required.

Climate Resiliency: Vulnerability to climate change must be evaluated to ensure all critical infrastructure is resistant to flooding; however, guidance must be used judiciously. Hazen has a detailed understanding of the City’s vulnerabilities to the effects of climate change through our work on the Citywide Vulnerability Assessment and Adaptation Plan, which modeled the impact of sea level rise (SLR) and hurricane storm surge on coastal areas at the SRWWTP. Hazen consults the National Weather Service’s Sea, Lake, and Overland Surges from Hurricanes (SLOSH) model and locally-derived standards and information such as the City’s recent Climate Vulnerability Assessment Update Report. As currently constructed, the finished floor elevation of the Control Building meets both Broward County’s recent adoption of Future Conditions 100 Year Flood Map for 2060 and the ASCE 24-14 resiliency requirements.



Existing IPS Control Building



John Burke, PE, with 57 years of experience, will serve as our Lead Electrical Engineer.

Slosh Model Results
Showing Maximum Surge
Heights for all simulated hurricanes of the given category

Storm surge is predicted to be **three to four feet above ground** at the project site.



Maintenance of Plant Operations (MOPO)

Hazen designs are known for detailing construction activities to ensure protection of the treatment process. The fundamental goals of the IPS project are addressing the 72” bar screen effluent pipeline, replacement of IPS pumping units, and upgrading the control building – all of which present significant risk. Failure during construction of any of these would result in raw sewage overflows in the neighboring community. Mindful of this, Hazen will develop and require proper sequencing of activities for a successful project. Examples are presented in the following section.



John Hoffman, PE, who provided construction management services for the Southern Regional WWTP Upgrades in 2007, will oversee construction management for the project.



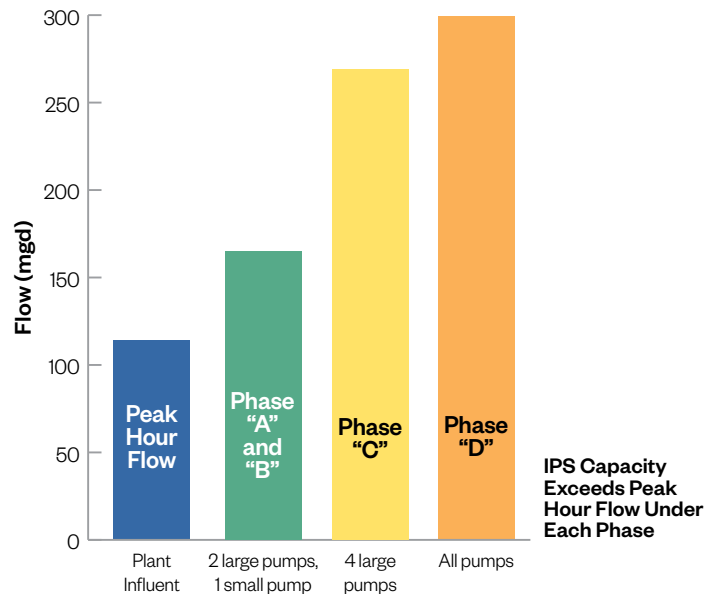
This project requires a highly detailed sequence of construction to ensure no interruption of service during construction.

The Hazen team has a long history of delivering highly detailed and successfully executed MOPO plans for the City. Our team has the institutional knowledge of the City's infrastructure to create the detailed MOPO plan required for this project. The City trusts the Hazen team to deliver a cost-effective design that will ensure no interruption to plant operations.

Value-Added Strategies

As stewards of the Southern Region, an exemplary level of service is of the utmost importance to the City. Budget limitations dictate that capital expenditures must provide value by addressing priorities and mitigating risk. Hazen designs are predicated on this concept, and with our in-depth knowledge of the SRWWTP and its operations, we have already developed strategies as outlined here.

Pumps and Piping: Hazen's design of the 1999 Upgrade resulted in a robust IPS pumping concept that facilitates future work. As noted previously, three pumps can accommodate peak hour flows with two of the largest pumps out of service. This approach allows for continuous operation under a wide variety of operation failure scenarios. In addition, with proper sequencing of the work, the partitioned wet well arrangement allows for structural rehabilitation of the individual wet wells and replacement of the associated pumping units while the remainder of the IPS can reliably handle peak flows. Bypass pumping of the IPS during rehabilitation may be avoided.

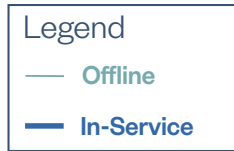
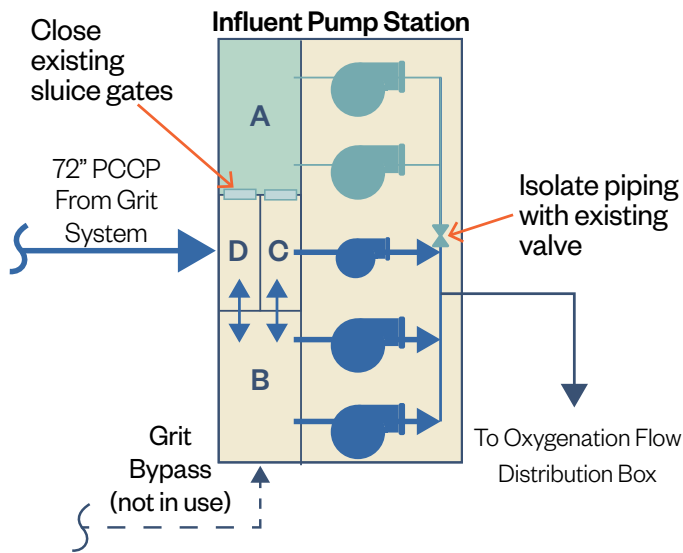


Existing IPS capacity while under construction will exceed peak influent.

The cost of a bypass pump station may be avoidable.

Hazen’s strategy is to evaluate the condition of the existing wet well gates and pumps to prioritize replacement and sequence wet well rehabilitation accordingly. Repair or replacement of interconnecting wet well gates and discharge manifold piping and valving would be selectively addressed and coordinated with the City. An example of this phased approach is illustrated below, assuming the pumps associated with wet well “A” are a priority.

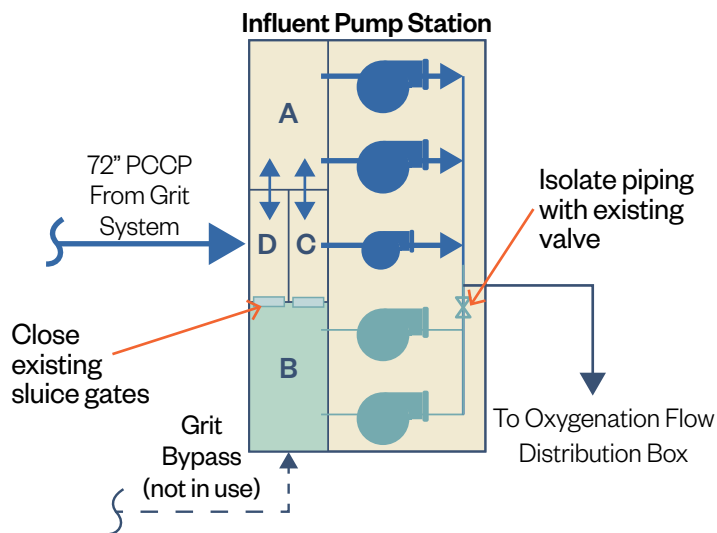
PHASE “A”



Two large pumps and one small pump will remain in service

while wet well “A” is rehabilitated and its associated pumps and piping are replaced.

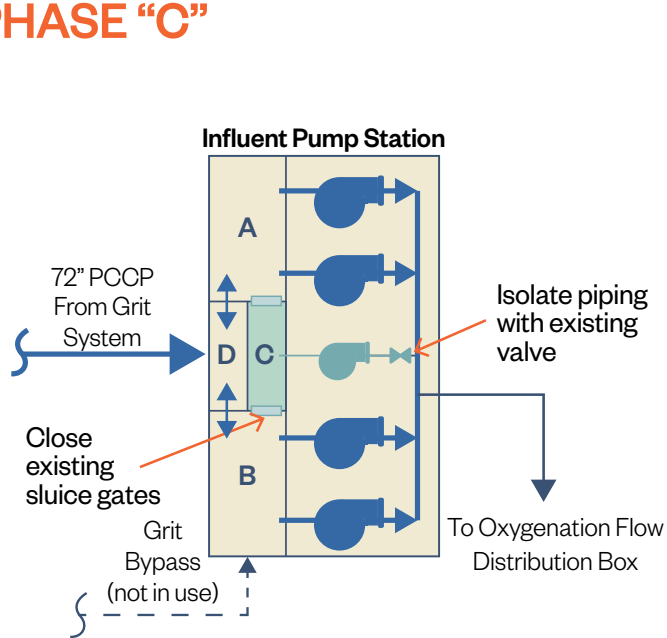
PHASE “B”



Two large pumps and one small pump will remain in service

while wet well “B” is rehabilitated and its associated pumps and piping are replaced.

PHASE “C”

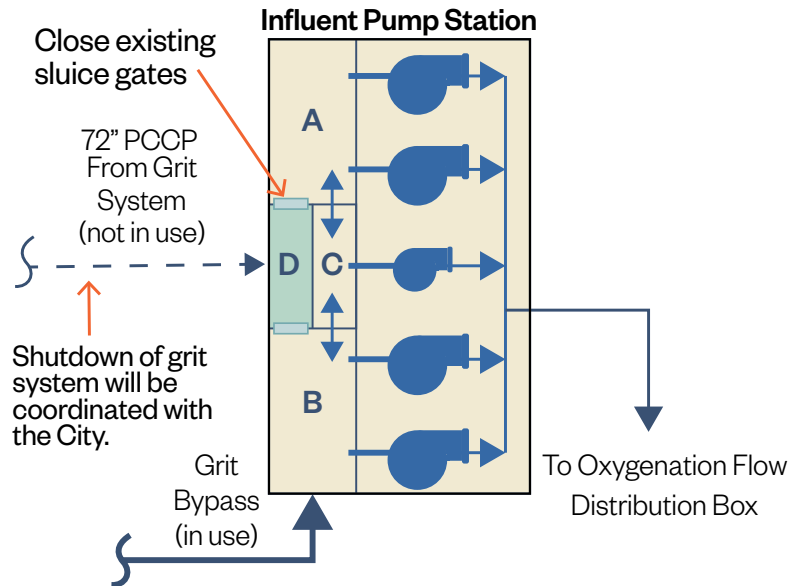


Legend

- Offline
- In-Service

Four large pumps will remain in service while wet well “C” is rehabilitated and its associated pump and piping are being replaced.

PHASE “D”

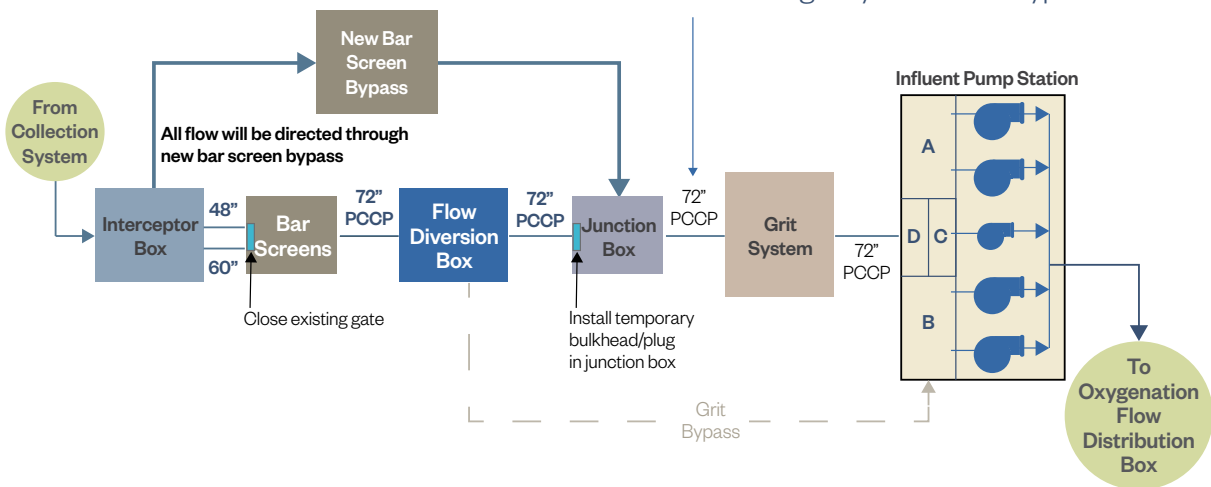


All pumps will remain in service during rehabilitation of wet well “D.”

72” Pipeline Rehabilitation: Rehabilitation of the IPS during the 1999 Upgrade incorporated electric bypass pumping of screened effluent to increase reliability and reduce project costs. A similar strategy could be used for this project. However, the evaluation and potential repair of the 72” bar screen effluent pipeline may necessitate bypassing the entirety of the SRWWTP headworks should rehabilitation be required. Hazen’s strategy is to perform inspection of the 72” pipe early during design to ascertain pipe condition and repair urgency. If rehabilitation of the pipeline is needed but can be deferred until the new emergency bypass bar screen is operational, transmission of screened effluent can be sent to the oxygenation trains and bypass pumping can be avoided. As illustrated below, this approach removes critical infrastructure from service with reduced risk, allowing the contractor access with minimal constraints.

Evaluate and rehabilitate 72” pipe and diversion box between bar screen and grit chamber

This section of pipe can be evaluated and rehabilitated as needed during installation of emergency bar screen bypass.



Flow diversion box can be emptied and dried for any structural rehabilitation required.

Pipe lining and point repairs can be implemented as needed.

Dry-Pit Submersible Pumps: Constructed in 1968, the IPS has a deep pump room below the operating level of the wet well. Flooding of the pump room has occurred in the past. Location of the motors on the upper floor has avoided catastrophic failure; however, it requires the use of extended shafts which are prone to vibration issues and necessitate monitoring of alignment. The advent of high-capacity solids handling submersible pumps may be an option for replacement of the existing vertical centrifugal pumps. Dry pit submersible pumps offer reduced maintenance and a smaller footprint while protecting against flooding. Hazen’s Corporate Pumping Group has substantial experience with implementation of dry pit submersible pumps at varying capacities. The Pumping Group is familiar with the types of operational issues that may arise and can address these issues during design and installation, heading off problems before they start.



Dry pit submersible pumps may be an option for upgrading existing pumps.



Extended shafts from existing IPS pumps, with motors mounted on the upper floor.

Control Building: The Control Building is spatially constrained, and upgrades must be carried out prior to, or in parallel with, the pumping upgrades at the IPS. Utilizing the existing facility requires phased upgrades of electrical equipment and ancillary features as construction progresses. As previously discussed, verification of current FBC, NEC, and NFPA requirements must be considered when implementing upgrades. The most cost-effective approach is to reuse the existing building while planning for a complete replacement of the HVAC system and needed structural improvements. Enclosures for VFDs manufactured today may be smaller than the enclosures currently used in the Control Building. Replacement may allow for better accessibility. During the preliminary engineering phase, Hazen will evaluate and delineate the advantages and disadvantages of each rehabilitation option: reuse of existing building, expansion of existing building, or construction of a new building. Specifically, we will review each option with respect to resiliency, space, priority, and budget. An important component of this review is to conduct detailed interviews with City personnel to determine operational deficiencies and identify potential areas of improvement for the existing structure.



Space is limited for maintenance and operations with the existing equipment

Project Schedule

It is Hazen’s goal to provide a high quality project to the City of Hollywood and to deliver creative, quality service efficiently, effectively, and on schedule.



Hazen proposes a preliminary project schedule of approximately three years. The project schedule can be expedited by eliminating a studies and investigations phase while relying on Hazen’s institutional knowledge of the WWTP and recent design and construction experience at the plant. Additionally, select phases of design and review phases can be expedited at the City’s request.