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Work Order 5A:

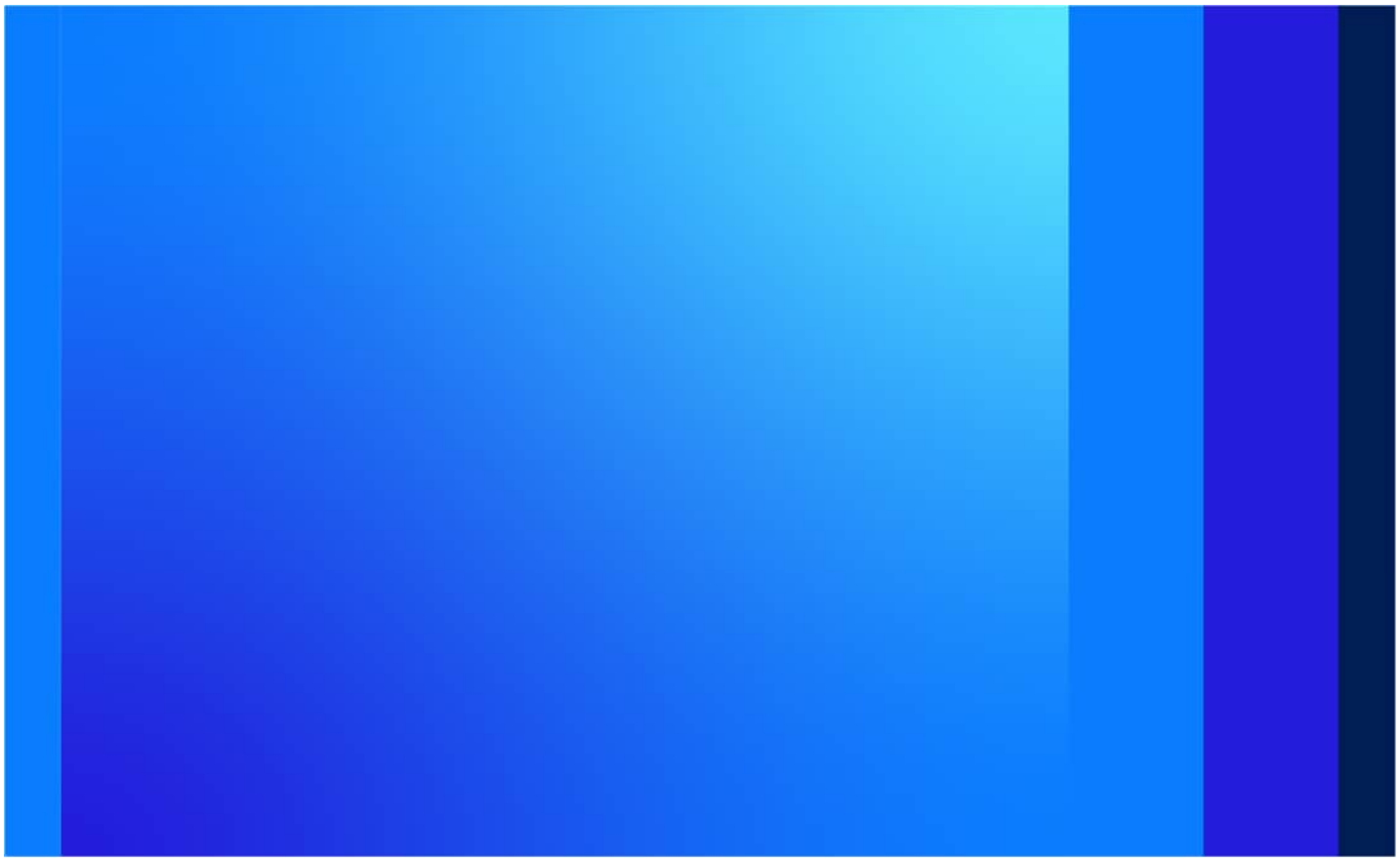
North Shore D Neighborhood Improvement Project

Phase 1: Basis of Design Report

May 31st, 2023

Master Design Consultant for Integrated Water Management

RFQ No. 2018-312-KB – Resolution No. 2018-30613



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Project Background

Miami Beach has designated the entire CITY as an Adaptation Action Area (AAA) in the CITY's Comprehensive Plan, which specifies resilient principles, goals, and adaptation strategies. AAA's are designated to prioritize actions and funding for flood prone areas. The Plan includes the objective to increase the CITY's resilience to the impacts of climate change and rising sea levels by developing and implementing adaptation strategies and measures to protect human life, natural systems and resources and adapt public infrastructure, services, and public and private property. The Plan calls for the CITY to prioritize strategies in areas, which currently experience or are projected to experience tidal flooding, storm surge, or both as a priority for the development and implementation of adaption strategies.

As defined in the 2020 Neighborhood Project Prioritization, the North Shore D neighborhood, including the North Beach Town Center, is a priority flood mitigation project in the heart of the North Beach Community Redevelopment Area (CRA) created in February 2021. The CRA was created to encourage redevelopment, revitalization, economic growth, and investment, as well as address commercial vacancies, limited housing stock, and resiliency challenges.

Figure 1 (in the section to follow) shows the project boundaries of the North Shore D project, which include 73rd Street to the north, Collins Avenue to the east, 69th Street to the south and Indian Creek/Dickens Avenue to the west. Boundaries also includes the portion along 71st street between Indian Creek Drive and Bonita Drive. Figure 1 delineates the North Shore D neighborhood area as a red line boundary.

The intent of this project is to address the risk of current and future flooding, compounded by future sea level rise, by adapting the roads and stormwater drainage systems in and around the North Beach Town Center (Zone TC-C), in areas that are currently prone to frequent flooding by tidal and rain events. This project will improve community resilience, business continuity and quality of life by increasing the capacity of the stormwater conveyance and treatment system for the entire basin, including new stormwater drainage pipes, stormwater pump(s), water quality wells and other new treatment systems. In addition, the project will address improvements to the potable and fire water distribution system and the sanitary sewer system within the affected areas of the neighborhood. The project will address streetscape and landscape design to improve neighborhood aesthetics and the urban canopy.

Project Understanding

The City of Miami Beach (CITY) requests that Jacobs Engineering Group Inc. (CONSULTANT TEAM) provide technical support and integrated engineering planning and design services for the North Shore D Neighborhood Improvements (PROJECT). The planning and design of the project will be divided in various phases with corresponding Work Orders for each Phase. Phase 1 (Work Order 5A) will focus on completing the project subsurface utilities modeling and definition of the improvements related to the project. Phase 1 will include the development of the Basis of Design Report (BODR) focusing on the identification of the subsurface improvements, approach, and phasing) for City of Miami Beach Commission approval and public presentations at community meetings. Subsequent project phases will include definition of roadway typical sections, roadway improvements, landscaping and other improvements related to the project and the full design of the improvements identified in the previous phases of the PROJECT. The scope of this Work Order (Work Order 5A) is limited to Phase 1 and will conclude with the development of the BODR for the PROJECT focusing on the modeling of subsurface utilities and identification of improvements. The CONSULTANT TEAM will submit a separate Work Order for the subsequent phases of the project.

The CITY received a Resilient Florida Grant Program Award in Fiscal Year 2021-22 for $10M. The CONSULTANT TEAM will make every commercially reasonable effort to ensure that the Work Orders can be completed within the $10M budget.

Phase 1 scope of work (Work Order 5A) is focused on identifying and prioritizing the subsurface infrastructure improvement needs and developing an integrated infrastructure implementation plan. The primary focus of this project is to mitigate flooding caused by intense rain events, high tides, and future sea level rise, and also improves the potable water, and sanitary sewer,. The project includes one or two new stormwater pump stations including water quality treatment and outfalls, new stormwater collection system, replacement of existing water and sewer mains, proposed water, and sewer line sub-aqueous crossing under a tidal creek to replace existing aerial crossing and road elevation pursuant to the CITY's 2020 Road Elevation Strategy.

The CITY has conducted multiple previous Master Planning efforts that provide the foundation for the Conceptual Design for this project:

- North Beach Master Plan, 2016
- North Beach: Town Centre District, Intensity Increase Study, 2014
- Resiliency Standards for Tidal Flood and Protection
- Sanitary Sewer Master Plan, 2019
- Stormwater Facilities Plan, 2019
- Stormwater Management Master Plan, 2010
- Sustainability Plan, 2011
- Transportation Master Plan, 2016
- Urban Forestry Master Plan, 2020
- Water Master Plan, 2019

Figure 1 below depicts the North Shore D project boundary (red line) and the North Beach Town Center boundary (blue line).

While this project will include the public infrastructure projects within the red project area boundary, the Town Center will be prioritized for near term projects to support the private redevelopment activities underway with the intent to align construction activities to minimize disruption for the community and the businesses therein.

There are multiple proposed developments and Miami Beach General Obligation Bond and capital improvement projects planned within the limits of North Shore D Neighborhood, particularly in the Town Center area. These future public (yellow outline) and private (green outline) developments and projects will be considered during the planning portion of the project to assess the potential impact of the projects on the neighborhood infrastructure.

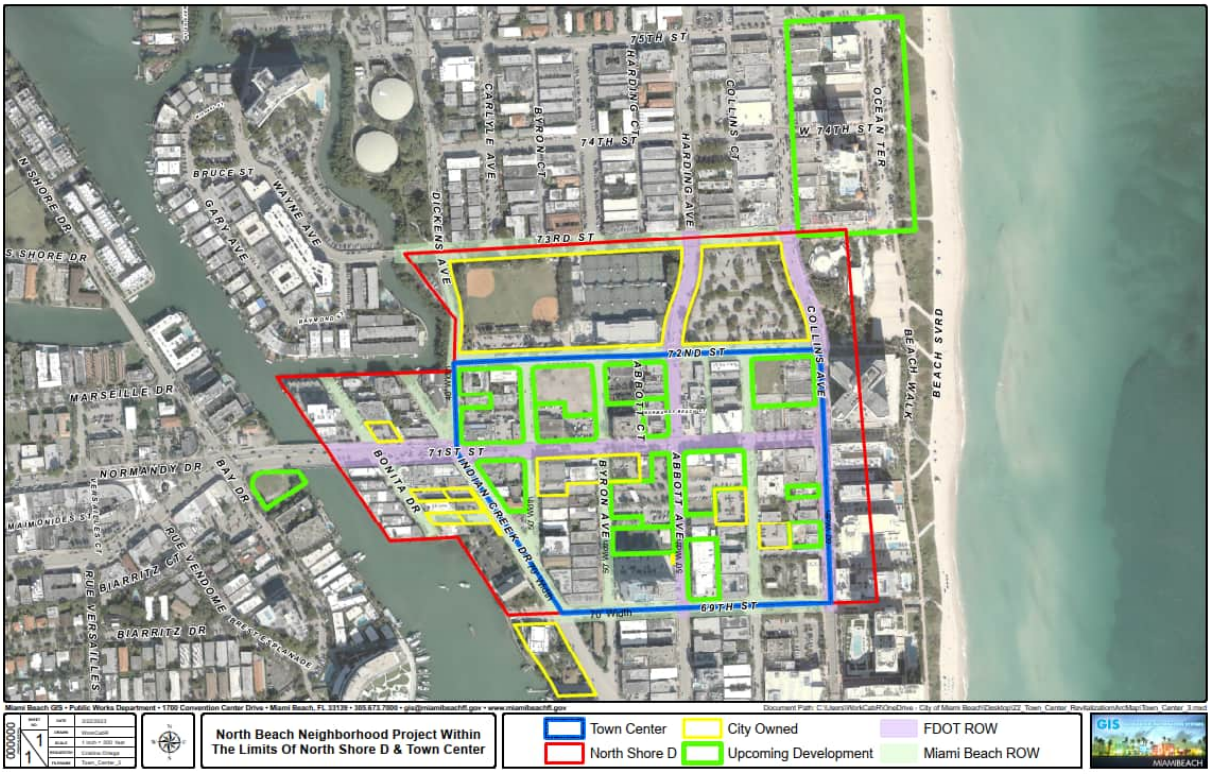


Figure 1. Approximate Project Boundary

Project Scope of Services

The scope of services for the development of the Conceptual Design Report for the North Shore D neighborhood for the CITY of Miami Beach, includes the following tasks:

Task 1 – Project Management and Coordination

Task 2 – Stakeholder Communication, and Consensus Building

Task 3 – Pre-Design Phase - Infrastructure Modeling and Needs Assessment

Task 4 – Project Definition and Phasing

Task 5 – Development of Basis of Design Report (BODR)

Task 7 – Field Studies

Task 1 Project Management and Coordination

1.1 Project Management

The CONSULTANT TEAM will provide project management, coordination, and oversight for the duration of this Work Order. This task includes development and review of project planning documents, project management plan, maintenance of the project document control systems, execution and oversight of sub-consultant agreements, update of project schedule and deliverables list, and project safety plan. .

The CONSULTANT TEAM will plan and coordinate monthly progress meetings prepare project invoices and progress reports, as defined in the Master Agreement (RFQ 2018-312-KB), Article 7 – Compensation for Services.

Meetings/Workshops

- Planning and Coordination of Monthly Progress Status Meetings (Virtual) with the CITY's Project Manager to discuss progress and open action items [Assumption: Up to 16 progress meetings attended by the CONSULTANT Project Manager and two additional CONSULTANT team members]

Deliverables

- Agenda, and Meeting minutes of Monthly Progress Meetings
- Project Baseline Schedule (MS Project) (electronic)
- Monthly updates to project schedule (electronic)
- Monthly Progress reports and invoice (electronic)
- Open Action Item List (monthly updates) (electronic)
- Updates to Project Change log

1.2 Project Kick-Off

The CONSULTANT TEAM will conduct a **Kick-Off Meeting** with the CITY to review project goals, scope, approach, team organization, subconsultants, deliverables, and schedule for the project. This meeting will include the discussion of the overall project communication plan, preliminary success factors, preliminary project risk register, change management plan, and performance indicators. Project success factors and intended outcomes will be defined, will guide the project execution, and will provide metrics that will be measured and reported on throughout the duration of the project to ensure project success for the CITY and project stakeholders.

During the meeting the following areas will be discussed:

- Project objectives: The overall plans for the project site to ensure that all participants have the same understanding of scope and purpose of the project.
- Communications procedures: Joint definition of the verbal and written communications practices, procedures, and frequency.
- CITY design criteria standards and preferences: Affirm which CITY standards for design criteria or standard products will be used, as well as verify CITY preferred equipment types, suppliers, and vendors.
- Validation of Policy and Level of Service (LOS)
- Validation of Modeling Scenarios and future growth scenarios
- Lessons Learned from First Street and West Avenue Neighborhood Improvement Projects
- Validation of information on future developments

- Discussion of equipment types, suppliers, and vendors that are required if you receive federal funding
- Draft version of the Proposed Communication Plan

Meetings/Workshops

- Kickoff Meeting - In Person/Virtual

Deliverables

- Meeting Agendas, Discussion Materials and Meeting Minutes (electronic)
- Presentation for the CITY Kickoff Meeting

1.3 Field Site Visit/Assessment Review

CONSULTANT TEAM will conduct a Field Site Visit/Assessment review with CITY staff, including at least 3 members of consultant team. CONSULTANT TEAM will submit a site visit report with the summary of the major findings and observations collected during the site visit within 10 working days following completion of the site visit.

Meetings/Workshops

- Field Site Visit with CITY

Deliverables

- Draft and final site visit report (electronic)

1.4 Data Collection and Geographic Information System (GIS) Update

Following the Notice to Proceed (NTP), CONSULTANT TEAM will submit a list of information to be obtained from CITY prior to the project Kickoff Meeting. CONSULTANT TEAM will review the information provided by the CITY and report any findings that affect the development of the subsequent phases of the project. CITY will provide available records on recently completed CITY water, sewer, and stormwater management projects (Stormwater Treatment Systems (STS), tide gates/backflow prevention, outfalls, pumps, pipe systems, water quality Best Management Practices (BMPs), and road modifications) and related information such as sea wall inventory and elevations, building FFEs, and a list of recent and planned public and private development projects in the area. CITY will provide any known changes from the in-progress stormwater master plan update effort that may inform the conceptual design of the North Shore D project. CONSULTANT TEAM will review the information and prepare a list of information gaps. The information gaps may include, but will not be limited to:

- Updated GIS shapefiles of entire existing stormwater, potable water, sanitary sewer, and other CITY infrastructure system information, including pipes, pumps, valves, backflow preventers, manholes, hydrants, etc.
- Project construction records (including as-built drawings, specifications, design standards, O&M manuals, pile installation records, construction cost estimates, approved submittals, etc.) on recent projects that have been completed near the project area.
- Available Topographical Surveys and digital elevation model (DEM)
- Aerial photographs for base maps
- AECOM hydrologic and hydraulic (H&H) models, GIS layers, and other supporting information about their recommendations
- Private development projects, building FFEs and sea wall elevations
- Population projections, traffic zone analysis, data, non-residential development plans, downtown re-development plans, and current and projected land use through 2040 or to the extent available
- Customer consumption records, potable and reuse water demand, and wastewater flow

    - Projections through 2040 or to the extent available, including a description of the procedure used for demand/flow projections. Please note that some projections will have to be calculated by the CONSULTANT TEAM
- Existing water distribution and wastewater collection system hydraulic model files, pressure zones, asset inventory, as-built information, and maps.
- Public and private property elevation certificates

Meetings/Workshops

- Conference Call to discuss Request for Information with CITY

Deliverables:

- Request for Information and Gap Analysis
- Visual Representation of information provided

Task 2 Stakeholder Communication, and Consensus Building

2.1 Development of Public Communication Plan

The Public Communications Plan will be a comprehensive strategy that outlines how the CONSULTANT TEAM will effectively communicate with project stakeholders to provide clarity and transparency and foster trust and buy-in from stakeholders. The Public Communications Plan will focus on an organized approach to tiered stakeholder engagement, inclusive of all phases of the project. This tiered approach considers each stakeholder group separately and how the communications efforts must be crafted to reach and appeal to that specific audience. This strategy focuses on goals and objectives, with each group sharing the same goals but with different objectives.

In coordination with the City, the CONSULTANT TEAM will expand upon the list of primary and secondary stakeholders already identified, including, at a minimum:

- Existing residents and businesses
- Homeowner associations
  - Altos Del Mar
  - Normandy SUD
  - Biscayne Point
  - Biscayne Beach
  - Stillwater
- Business organizations
  - NoBe CRA Committee
  - Normandy Fountain Business Association
  - Miami Beach Life Magazine
- Developers for adjacent construction projects
- City department representatives for City planned projects
  - GO #1: 72nd Street Civic Center / Haskell
  - GO #13: North Shore Park and Youth Center
  - Capital Improvements projects
- Florida Department of Transportation (FDOT)

From this expanded stakeholder list, the CONSULTANT TEAM will work with the City to establish a Project Steering Committee, comprised generally of leaders within the key stakeholder groups identified as well as other key City personnel. After the Steering Committee has been established, a meeting will be help to discuss the project overview and identify goals and objectives of the various stakeholder groups.

Once objectives are recognized and adopted, the CONSULTANT TEAM will work alongside the City to identify the most appropriate tactics to reach the various stakeholder groups. These tactics may include tools, methods, frequencies, channels, messaging strategies, and other elements to ensure consistent and effective outreach. To maintain continuity and consistency in communications, the CONSULTANT TEAM will work with the City to establish project definitions, terms, and narratives to be utilized by all members of the project team.

The Public Communications Plan will identify communications touch points and will be supplemented with an outreach schedule to support the design activities and maximize community engagement. The outreach schedule will specify when meetings would be held, and what would be the purpose and intended audience of each meeting. The schedule will also include target dates for promotional and educational outreach content including website and social media updates. This content will be developed to align with the production of deliverables by the technical team. The Project Communications Plan will also include

guidelines for how each outreach activity shall be carried out, including timelines, approval procedures, responsible parties, and desired outcomes. This approach will facilitate an active stakeholder base and allow for timely adjustments by the design team or communications team.

Following a review of the draft plan by the City, the CONSULTANT TEAM will hold a second Steering Committee meeting to review the communications plan, discuss tactics, and make adjustments as necessary for the successful advancement of the Project.

Upon receipt of recommended revisions and approval by the City, the CONSULTANT TEAM will produce a Final Public Communications Plan for implementation through the completion of the Basis of Design Report.

Meetings/Workshops

- Attendance to Progress Meetings (Virtual) on a monthly basis

Deliverables

- Expanded list of key stakeholders
- Steering Committee Kickoff Meeting
- Communications Plan

2.2 Community Meetings

To engage the community from the outset of the Project, the CONSULTANT TEAM will plan and produce two (2) introductory meetings with residents and business organizations within the affected project area. Meetings will generally be set up in a hybrid format. The option of attending the meetings in person or remotely via an online platform will be given to stakeholders to ensure maximum participation and engagement.

The intent of the community introduction meetings is to provide stakeholders with an overview of the proposed infrastructure project. The meetings serve as an opportunity to inform the community about the purpose, scope, and potential impact of the project, as well as to gather feedback, concerns, and questions from the stakeholders. The specific timing and content of the meetings will be discussed and determined in coordination with the Project Steering Committee as part of Task 2.1.

To maximize meeting attendance, a mailing and social media campaign will be planned and executed. The mailing will include a brief introduction to the project, the date, time, and location of the meeting, and a request for RSVPs. A social media campaign will also be created to spread the word across various platforms, with provisions for collecting community feedback further detailed under Task 2.6.

The CONSULTANT TEAM will provide and set up audio-visual equipment including microphones, speakers, projectors, and screens, to ensure effective broadcasting of the meeting. The meeting will be facilitated by the project team, who will present the project and answer any questions from the stakeholders. The production of these meetings will include provision of educational flyers, sign in sheets, presentations, and display boards. The City will be responsible for translation and ADA services if needed.

The meetings aim to create awareness and generate interest in the project, to ensure that stakeholders are informed and engaged throughout the development process. Additionally, the meeting serves as a platform for the project team to establish a dialogue with the community and demonstrate their commitment to transparency, collaboration, and responsiveness to stakeholder needs. This will foster a positive relationship between the project team and the community, build trust and credibility, and ensure that the project is

aligned with the community's priorities and values. By involving stakeholders in the development process, the project team can ultimately improve the quality and success of the project and minimize potential conflicts or negative impacts.

The CONSULTANT TEAM will collect and distribute meeting notes to Jacobs and the City for consideration throughout the Basis of Design Report of the project.

Deliverables

- Meeting Promotion Social Media post
- Meeting Promotion Direct Mailer
- Comment Cards
- Informational Flyer
- Four (4) informational posters (specific content TBD)
- Two (2) Community meetings (specific timing TBD)
- Meeting Minutes

2.3 Developer Introduction Meetings

The development teams working on the various private projects within the area are one of the stakeholders critical to the success of this project. This plan includes the development and implementation of a special outreach program with the goal of aligning and communicating with the developers within the area with needs for improvements and subsequently achieve a continued communication and coordination between the developers and the City.

The CONSULTANT Team will work closely with the City to understand and coordinate different department plans and projects from current developers. The intent is to understand and coordinate project timing of new construction, harmonization, their infrastructure needs from the City, infrastructure included in the proposed development project, and opportunities to leverage and optimize schedule in a manner that is mutually beneficial. Individual profiles documenting the details of each proposed development will be created for reference by the design team.

Specific City departments that will be consulted include, but are not limited to:

- Public Works
- Planning
- Environment and Sustainability
- Transportation and Mobility
- Parking
- Urban Forestry
- Capital Improvements
- Economic Development
- Communications

Separately, the CONSULTANT Team will engage with the Florida Department of Transportation to discuss project objectives and solicit feedback, specifically as it relates to proposed pump station locations and typical roadway sections.

The CONSULTANT Team will collect and distribute development profiles and meeting notes to Jacobs and the City for consideration throughout the Basis of Design phase of the project.

Deliverables

- Developer Profile Database

2.4 Brand Development

The North Beach Neighborhood Improvements Project should have a distinct project brand to create awareness, generate interest, and establish a positive reputation for the project. A project brand is a unique identity that distinguishes the project from others and communicates its purpose, values, and benefits to stakeholders.

A unique brand will make the project more visible and recognizable to the public, increasing awareness and generating interest in the project. It will differentiate the project from other infrastructure projects, creating a unique identity that sets it apart. It will help establish a positive reputation for the project, demonstrating its credibility, reliability, and commitment to stakeholder needs. It will ensure consistency in the project's messaging and communication, ensuring that stakeholders receive clear, accurate, and consistent information about the project.

The CONSULTANT TEAM will develop initial brand concepts for the project as a part of the City's primary Rising Above brand, which will be shared with and selected by the City in partnership with the project Steering Committee. The CONSULTANT TEAM will develop a final branding kit based on feedback received, and the brand will be utilized on all project materials following the formal adoption of the project brand. Community participation in the development and selection of a project brand will engage stakeholders and create a sense of ownership and community around the project, further encouraging participation and feedback from the community.

Deliverables

- Brand Kit

2.5 Project Updates and Stakeholder Coordination

For continued transparency and ease of information access, the CONSULTANT TEAM will establish a project hotline that will provide callers with a project status. The project status message will indicate the date recorded and will be updated regularly with new information as the project progresses. At a minimum, the project hotline will be updated on a biweekly basis. If no new information is available, the recording date will be updated. Proposed language will be provided to the City for approval prior to any hotline update. Callers will also be provided with an opportunity to leave a message, which will be routed appropriately for response either by the CONSULTANT Team or the City.

The fees for this task are based on an estimate of 3 months. The continuation of this Task is expected to part of the next Work Order.

Deliverables

- Project Hotline and biweekly updates
- Database detailing communications with residents
- Monthly social media updates

2.6 Pump Station Meetings

It is expected that pump station location alternatives will be initially identified by engineering constraints, but will be driven in large part by community input.

The CONSULTANT TEAM will attend up to three (3) virtual status meetings with Jacobs and the City to document the evolution of the pump station conceptual design. This information will be critical to share with the project stakeholders once alternative locations are identified to help stakeholders understand the challenges faced as part of the design and decision-making processes. The CONSULTANT TEAM will attend up to two (2) meetings with the Commissioners to record notes, quotes, questions, and other pertinent information that may provide value as part of the discussion with the community.

The CONSULTANT TEAM will plan and produce two (2) public meetings with stakeholders for the purpose of presenting pump station location and layout alternatives, as well as to present the locations of the water quality monitoring wells. These meetings will be set up in a hybrid format. The option of attending the meetings in person or remotely via an online platform will be given to stakeholders to ensure maximum participation and engagement.

The CONSULTANT TEAM will provide and set up audio-visual equipment including microphones, speakers, projectors, and screens, to ensure effective broadcasting of the meeting. The meeting will be facilitated by the project team, who will present the project and answer any questions from the stakeholders. The production of these meetings will include provision of educational flyers, sign in sheets, presentations, and display boards. The City will be responsible for translation and ADA services if needed.

The CONSULTANT TEAM will collect and distribute meeting notes to Jacobs and the City to document the meetings. A final outreach report detailing the communication efforts and results will be prepared for the project.

Deliverables

- Meeting Promotion Social Media post
- Meeting Promotion Direct Mailer
- Comment Cards
- Informational Flyer
- Four (4) informational posters (specific content TBD)
- Two (2) Community meetings (specific timing TBD)
- Meeting Minutes
- Final Outreach Report
- .

Task 3 Pre-Design Phase - Infrastructure Modeling and Needs Assessment

The existing infrastructure system analysis and needs assessment and review of the proposed infrastructure improvements as identified in various CITY masterplans, are included in this task. The analysis includes the following infrastructure systems:

- Stormwater Management
- Potable and Fire Water Distribution
- Sanitary Sewer System

The analysis of each infrastructure system will be performed for different scenarios defined under each one. While these infrastructure development scenarios are intended to prioritize and phase improvements, each infrastructure system may require improvements outside of the defined area boundaries as critical elements to serve the proposed development and maintain service reliability of each system. These dependent and connected infrastructure improvements will be evaluated for each system and each scenario to support the best outcome of public infrastructure services for the community.

3.1 Stormwater Management System (Water Quantity)

The conceptual design effort will include hydrologic and hydraulic stormwater modeling to determine the capacity of the proposed Pump Stations and the proposed stormwater system components. The following subtasks will be executed to complete the modeling and validation of the base project. During this Task THE CONSULTANT TEAM will utilize the existing information to develop existing and future conditions scenarios, then complete stormwater modeling to be used for the proposed master plan system under different scenarios. Following each of these steps in the conceptual design, the design team will hold "milestone meetings" with the City and Jacobs to confirm the assumptions made in each step. Following each of these steps in the conceptual design, the design team will hold "milestone meetings" with the City to confirm the assumptions made in each step. The H&H modeling estimates runoff from the design storm (10-year, 24-hour 8.75-inch storm), and predicts the maximum hydraulic grade lines (HGL), pipe capacities and velocities, and peak stages throughout the drainage network. The modeling effort will include pre- and post-development scenarios to identify current deficiencies and how the proposed infrastructure improvements will address the needs.

Background

In 2019 AECOM prepared and presented to the City a basin study as part of the Capital Improvement Project for the North Shore and Town Center Neighborhood located in the City of Miami Beach. The level-of-service (LOS) used for this study was for no street flooding of the roads during a 10-year, 24-hour storm event and did not consider the City's Road Raising policy. The primary goal of the proposed drainage system was to significantly reduce or eliminate the deficiencies in the existing system. An Interconnected Pond Routing Version 3.0 (ICPR3) H&H model was used to size and evaluate the proposed drainage system. The model utilized available Light Detection and Ranging (LiDAR) surface topography data, Geographic Information System (GIS) geodatabase files, and record drawings of existing conditions provided by the City of Miami Beach to determine elevations of catch basins and inverts, existing pipe network location, pipe sizes and pump configurations.

Existing Stormwater Model Setup

THE CONSULTANT TEAM will develop an existing conditions stormwater drainage model to evaluate the existing flooding conditions of the drainage system of the area. The CONSULTANT TEAM will use the Interconnected Channel and Pond Routing Model Version 4 (ICPR4) software, released in 2016, to develop the stormwater model using available existing information on the existing drainage network to be collected during the data gathering task. For model development the CONSULTANT TEAM will use existing GIS data, and LIDAR data available and will be complemented with Topographic information, and Finish Floor Elevations collected as part of the Survey Scope for this project within the boundary area of the North Beach D Neighborhood. Please note that The CONSULTANT TEAM will use the AECOM's model as a starting point to narrow down the boundaries of the model.

Existing Stormwater Drainage Analysis and Calibration

The CONSULTANT TEAM will run the stormwater model for the existing condition and analyze the results to determine the water surface elevation and flooding patterns for the design rainfall. The CONSULTANT TEAM will identify approximate areas of flooding, structures within these areas, and roadway overtopping. Based on the model output comparisons to historical records of storm events (pictures and videos) provided by the CITY, the CONSULTANT TEAM will work to modify the existing model (calibrate) to represent the realistic drainage conditions more accurately.

Proposed Stormwater Drainage Modeling, and Analysis

The CONSULTANT TEAM will develop a stormwater model to evaluate and determine the improvements required for North Shore D Neighborhood. The CONSULTANT TEAM will develop three (3) post development models. One Ultimate Conditions model, one Interim condition 1 model, and one Interim condition 2 model. To complete the evaluation, the CONSULTANT TEAM will start with the existing model and use the proposed stormwater improvements identified by AECOM as the reference to develop the Ultimate Conditions model. The model will be analyzed and modified based on design criteria and the LOS put forth by the CITY. Interim Conditions 1 and 2 will be developed using the Ultimate Conditions model as the

basis. The interim conditions models will not necessarily meet the LOS requirements. The CONSULTANT TEAM will analyze and identify any additional improvements that are required for each of the post-development scenarios and within the project boundary areas. Table 1 and Figure 2 provides a description of the scenarios to be modeled as well as a graphical description of the preliminary boundary conditions of each scenario. The modeling of the scenarios will be iterative to determine/refine the design criteria for the required improvements such as pipe sizing and alignment, pump station location and capacity, and other potential solutions (storage).

The results of the post-development scenarios, as per Table 1, will be reviewed and compared to the existing conditions model to validate the impact to the LOS and the improvements required to meet the LOS. The development and results of each scenario will be summarized in a technical memorandum which will support the overall project basis of design. These same scenarios also apply to the stormwater pump stations and water quality assessment tasks.

A virtual workshop, “Milestone Meeting” will be held with CITY to be attended by up to two (2) the CONSULTANT TEAM staff at each phase (Existing model set up, Existing model analysis, Ultimate Condition Scenario set up, Ultimate Condition Scenario analysis, Interim Condition 1 set up, Interim Condition 2 set up, Interim Condition 1 analysis, Interim Condition 2 analysis) to obtain comments and verify assumptions being made in the model. Following receipt of comments on each phase, the CONSULTANT TEAM will proceed to the subsequent phase and incorporate said comments. The

CONSULTANT TEAM will provide a draft Technical Memorandum (TM) summarizing the model development, model calibration, analysis, scenarios, and stormwater improvements. A virtual workshop will be held with CITY to be attended by up to two the CONSULTANT TEAM staff to discuss the TM and obtain comments. Following receipt of comments, theCONSULTANT TEAM will provide a final stormwater system TM.

Meetings

- Eight (8) Milestone Meetings (Virtual) to discuss modeling inputs and results
- One (1) meeting (Virtual) to discuss the draft TM

Deliverables

- Presentation material from the status meeting for the CITY to review (electronic)
- Pre vs Post Model Technical Memorandum (electronic)
- Hydrologic and Hydraulic Model and all native calculations, model logs etc.

Table 2 –Stormwater Modeling Scenarios

Scenario	Scenario Description	Development	Planning Horizon	Extent of Stormwater Upgrades
Existing Condition	Baseline/Existing Conditions	Current conditions	2023	NSD+
Ultimate Condition Scenario (Figure 2 Blue limit)	Ultimate build out condition, including: • All seawalls and barriers will be modeled as having been installed or upgraded per the "Resiliency Standards for Tidal Flood Protection." • Future storm drainage pipelines throughout the North Shore D basin will be modeled as having been installed or upgraded utilizing the 2019 AECOM stormwater basin study as a reference to select boundary conditions for smaller NSD Neighborhood model (interim conditions). • Boundary between the North Shore D Neighborhood basin and adjacent neighborhoods to the north and south will be modeled under the assumption that all northern and southern neighborhood improvement projects have been completed • Roads within the boundary will be modeled as having been raised per the CMB Road Raising Policy. • Modeling will assume the following contribution to the basin and smaller NSD Neighborhood basins: 33% for all waterfront properties with internal drainage systems; and 50% for all waterfront properties without internal drainage systems • Level of Service (LOS) – 10 Yr. 24 hour design storm and no residual flooding on the basin • Pipe sizing will be reassessed from the AECOM 2019 model based on the LOS and design criteria for this project	Highest land cover anticipated per zoning including known development projects at the NBTC	2055	NSD+
Interim Condition 1 (Figure 2 Red Limit)	This scenario will utilize the Ultimate Condition Scenario as the reference for the model. The interim condition 1 is focused on the definition of the identification of improvements required to support the NSD neighborhood area including the identified NBTC planned developments meeting the desired LOS.	Known development projects across neighborhood	2055	NSD
Interim Condition 2 (Figure 2 Violet Line)	This scenario will build upon the results of the Interim Conditions 1 Scenario. This Scenario is focused on the definition of the identification of improvements required to support the proposed NBTC planned development	Known NBTC planned development projects	2055	NBTC

Notes:

- NBTC = North Beach Town Center
- NSD = North Shore D Neighborhood
- NSD+ = North Shore D Neighborhood expanded area to capture nearby connected/dependent infrastructure
- Interim condition 1 and 2 refers to the initial construction phases of the NSD project.

Figure 2. Post-Development Modeling Scenarios

3.2 Stormwater Pump Stations

The CONSULTANT TEAM will develop preliminary sizing, conceptual layouts, location(s), configuration, and sizing of the stormwater pump station(s) required to serve the project area. The CONSULTANT TEAM will evaluate options and develop a recommended alternative for each pump station. It is assumed that the area will be served by two (2) pump stations (Proposed PS 3 and Proposed PS 4) as defined in the AECOM Stormwater Master Plan, see Figure 2. Please note that the final quantity and location of the proposed

pump station(s) will be validated during the modeling task. The conceptual plan for each pump station will include:

- Potential to use only one pump station for the basin. Due to chronic water quality issues in the canal adjacent to Park View Island, the CITY requested to explore avoiding discharge at this location and using only one pump station for the whole basin.
- Potential for the use of underground storage to optimize the number of pump stations.
- Preliminary sizing of the pump station wet well(s).
- Preliminary sizing of the above ground components.
- Location siting/layout plan of the pump station and above ground components.
- Access for necessary operations and maintenance.
- Any aesthetic screening requirements (landscape or hardscape) for above ground components.

Meetings

- Five (5) status meetings (Virtual) with CITY Staff to discuss pump station capacity, location(s), and conceptual layout

Deliverables

- Proposed conceptual layout for each individual stormwater pump station that includes site plan and location layout (electronic)
- Proposed conceptual screening for above ground components if required

3.3 Stormwater Management System (Water Quality)

The CONSULTANT TEAM will perform a water quality analysis of the site. This will include performing engineering calculations to define the size of water quality structures and pumping requirements as well as performing a nutrient and pollutant-loading analysis for the PROJECT area basin. The CONSULTANT TEAM will utilize BMP trains for the nutrient and pollutant-loading analysis. CONSULTANT TEAM will perform a nutrient and pollutant-loading analysis for the PROJECT area basin to identify possible hot spot land uses and contributors to known pollutants of concern identified for the Biscayne Bay Outstanding Florida Water. Known pollutants include trash, sediment, bacteria, nitrogen, phosphorus, heavy metals, and hydrocarbons, to name a few.

Based on the analysis the CONSULTANT TEAM will recommend required infrastructure to meet Current State Water Quality (WQ) requirements. The locations of WQ infrastructure will be included in the proposed system. As part of this effort the CONSULTANT TEAM will coordinate and attend a pre-application meeting with DERM for presentation of results and define WQ approach for the permitting phase of the project.

Deliverables

- Draft and Final Technical Memorandum describing the analysis and BMP Trains model report, which will be incorporated into the Basis of Design Report (electronic)

3.4 Potable Water & Sewer System

During this Task the CONSULTANT TEAM will acquire existing information and complete potable water modeling of the project under different scenarios. The modeling effort will include pre- and post-modeling to identify deficiencies and infrastructure needs.

Background

Water System Hydraulic Modeling

The CITY is a wholesale water customer of Miami-Dade Water and Sewer Department (WASD), but owns, operates, and maintains the water distribution system within the CITY's service area. In 2019, Hazen and Sawyer (Hazen) completed an evaluation of the existing water system and developed a Water System Master Plan (Water Master Plan) to identify capital improvement projects to ensure reliable operation of the water system for a planning horizon of 25 years.

The intent of this effort is to use the CITY's most recent version of the water hydraulic model to evaluate the water system under the existing and various proposed future scenarios to define the improvements required to support the North Shore D project area.

Sewer System Hydraulic Modeling

The CITY owns, operates, and maintains the sewer collection and transmission system within the CITY's service area. Sewage is collected throughout the CITY and pumped through a single 60-inch connection to WASD's Central District Wastewater Treatment Plant (CDWWTP) for treatment and disposal. In 2019, Hazen completed an evaluation of the existing sewer system and developed a Sewer Master Plan (Sewer Master Plan) to identify capital improvement projects to ensure reliable operation of the system for a planning horizon of 25 years.

The sewer system hydraulic model included only forcemains and gravity mains larger then 24-inches. However, various gravity pipeline segments have been added to the model since 2019 as a result of developing connection analyses that have been performed by Hazen. The intent of this effort is to use the most recent version of the sewer hydraulic model and incorporate local sewers for the North Shore D project area basin, evaluate the sewer system within the North Shore D project area under the existing and various proposed system configurations, and define any improvements required to support the North Shore D project area for the various proposed system configurations.

Baseline Model Analysis

Baseline Water Model Setup

The existing model scenarios will be used to identify near-term improvements. To adopt a more conservative approach, the demands from recent developer requests to the City will be included in addition to the original 2025 projected demands established as part of the master plan. The demands for 2045 will only include projected 2045 water demands established in the Master Plan. It is assumed that new developments proposed since the master plan are reflected in the systemwide projections.

- The model controls will be updated to reflect the changes in the operation of the system by the City with regards to operation of storage tanks and associated operation of the booster pump stations.

- The model will be updated to reflect any changes in large diameter pipes throughout the City (i.e. greater than or equal to 24 inches in diameter) since the development of the master plan model based on City's GIS. The model will also be updated for to reflect any network changes in the North Shore D area (regardless of pipe diameters) based on City's latest GIS.

- Within the North Shore D boundary, City will review GIS and as-builts and provide the CONSULTANT TEAM with any major interconnects that are missing in the current hydraulic model.

- The City will also provide recent fire flow data to the CONSULTANT TEAM for reference. With concurrence from the City, The CONSULTANT TEAM will make updates to areas of the City hydraulically impacted when appropriate. Note, data will be for reference only as many variables impact fire flow tests when compared to modeling results.

- The CONSULTANT TEAM will use the most current version of the InfoWater model, and request from the City the most current GIS files.

Potable and Fire Flow Modeling

The CONSULTANT TEAM will perform hydraulic modeling of the existing potable/fire flow protection water system to evaluate the capacity of the existing system components. The model runs will be used to identify any potential deficiencies identified within the specific North Shore D project boundaries for the scenarios defined in Table 3. The CONSULTANT TEAM will run the hydraulic model and analyze the results to determine the water pressure and system capacity. The CONSULTANT TEAM will identify approximate areas of low pressures, issues meeting fire flow requirements, and infrastructure capacity issues, if any. In addition, the CONSULTANT TEAM will identify improvements as necessary to maintain local levels of service (LOS) for the project area.

Table 3 – System Configuration Scenarios and Timelines

Scenario	Title	Description	Year
1.1	Existing Conditions	**Facility:** Existing facility network. **Demand**: Master Plan 2025 Demands + Estimated demands from recent developer requests (w/o North Shore D additional demands)	2025
1.2	Existing Conditions + Proposed Capacity Improvements Identified During the Master Plan (1)	**Facility:** Existing facility network + Proposed Master Plan Improvements **Demand**: Master Plan 2025 Demands + Estimated demands from recent developer requests (w/o North Shore D additional demands)	2025
1.3	Future Conditions + Proposed Capacity Improvements Identified During the Master Plan (2)	**Facility:** Existing facility network + Proposed Master Plan Improvements **Demand**: Master Plan 2045 Projected Demands (w/o North Shore D additional demands)	2045

(1) Planned Master plan improvements to be modeled will be limited to the improvements in City's current 5 year Capital Plan. City to provide this list. (2) Proposed Master Plan Improvements to be included in the model will incorporate all the capacity related improvements identified in the Master Plan.

Sewer Model Setup

The existing model scenarios will be used to identify near-term improvements. In order to adopt a more conservative approach, the flows from recent developer requests to the City will be included in addition to the original 2025 projected flows established as part of the master plan. The flows for 2045 will only include projected 2045 sewer flows established in the Master Plan. It is assumed that new developments proposed since the master plan are reflected in the systemwide projections.

- The model will be updated to reflect any changes in large diameter pipes throughout the City (i.e. greater than or equal to 24 inches in diameter) since the development of the master plan model based on City's GIS. The model will also be updated for to reflect any network changes in the North Shore D area (regardless of pipe diameters) based on City's latest GIS.

- Within the North Shore D boundary, City will review GIS and as-builts and provide the CONSULTANT TEAM with any major interconnects that are missing in the current hydraulic model.

- The CONSULTANT TEAM will use the most current version of the InfoWorks model, and request from the City the most current GIS files.

Sewer Modeling

The CONSULTANT TEAM will perform hydraulic modeling of the existing local sanitary sewer system in the North Shore D project area, including the entire PS 19 service area, to evaluate the capacity of the existing system components. The model runs will be used to identify any potential deficiencies identified within the specific North Shore D project boundaries for the scenarios defined in Table 4. Refer to Figure 3 for the developer requests that are currently in the model for the North Shore D area and the gravity sewer piping that has been added to the model over the course of the various developer requests.

The CONSULTANT TEAM will run the existing conditions hydraulic model including the new gravity sewers added and analyze the results to determine the Basin 19 existing capacity, among other parameters necessary to evaluate the existing conditions of the sanitary sewer system within the project area. The CONSULTANT TEAM will identify areas with infrastructure capacity issues, if any. In addition, the CONSULTANT TEAM will identify improvements as necessary to maintain local levels of service (LOS) for the project area.

Table 4 – System Configuration Scenarios and Timelines

Scenario	Title	Description	Year
1.4	Existing Conditions	Facility: Existing facility network. Flows: Master Plan 2025 dry and wet weather flow + Estimated flows from recent developer requests (w/o North Shore D additional demands)	2025
1.5	Existing Conditions + Proposed Capacity Improvements Identified During the Master Plan (1)	Facility: Existing facility network + Planned Master Plan Improvements Flows: Master Plan 2025 dry and wet weather flow + Estimated flows from recent developer requests (w/o North Shore D additional demands)	2025
1.6	Future Conditions + Proposed Capacity Improvements Identified During the Master Plan (2)	Facility: Existing facility network + Proposed Master Plan Improvements Flows: Master Plan 2045 Projected dry and wet weather flow (w/o North Shore D additional demands)	2045

(1) Planned Master plan improvements to be modeled will be limited to the improvements in City's current 5 year Capital Plan. City to provide this list. (2) Proposed Master Plan Improvements to be included in the model will incorporate all the capacity related improvements identified in the Master Plan.

Deliverables

- Summary of baseline modeling results for the sewer system including:
    - Sewer flow estimation summary for DWF, WWF; gravity sewer table with sewer diameters, inverts and MH rim/bottom elevations, sewer structural profile charts, pumps, control levels, PS 19 wet well levels.
    - Sewer modeling results in sewer HGL charts, PS 19 performance in wet well levels, discharge pressures, impacts to the upstream and downstream stations.
- Summary of baseline modeling results for the water distribution system including pdf maps/figures indicating system pressures, velocities, fire flow, etc.

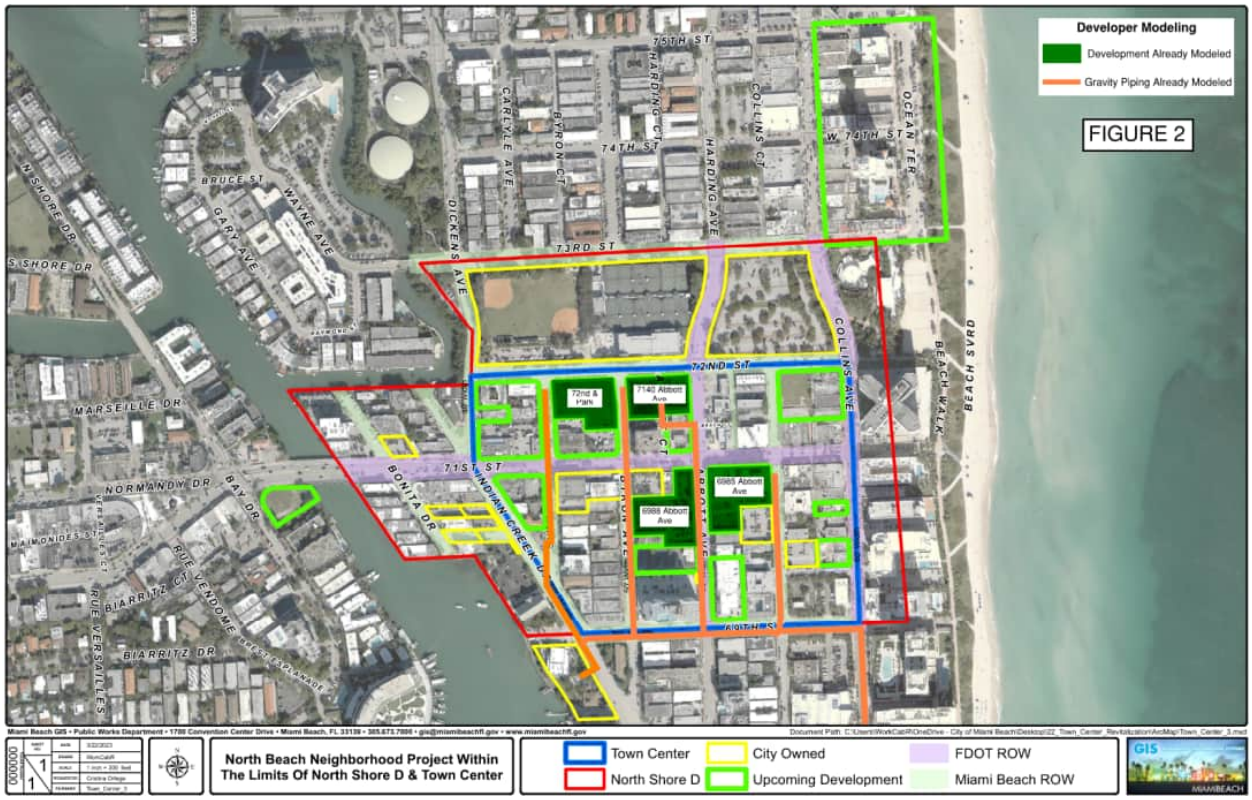


Figure 3. Developer requests that are currently in the model for the North Shore D area and the gravity sewer piping that has been added to the model over the course of the various developer requests.

Proposed System Modeling and Analysis

The model scenarios developed in Task 2 will be updated to include built out demands for the proposed North Shore D developments based on latest planning and zoning documents for North Shore D area. These demand additions will be applied to both for 2025 and 2045 scenarios.

Potable and Fire Flow Modeling

Following the review and assessment of the baseline conditions, The CONSULTANT TEAM will modify the existing conditions model to assess the interim and build-out scenarios included in Table 4. Each configuration scenario will be modeled and evaluated against local level of service criteria, and its results compared with the existing conditions model to evaluate the improvements within the system. Each scenario will include LOS analysis for maximum demands, average demands, available fireflow, maximum and minimum pressures, high velocity / headloss, and pipe criticality for the project area.

Improvements and recommendations from the existing potable water system modeling and analysis will be assumed "active" for future planning horizons as well as previously proposed Citywide master planning projects based on their recommended implementation schedules.

Table 4

Scenario	Title	Description	North Shore D Demands	Year
2.1	Existing Conditions	**Facility:** Existing facility network. **Demand:** Master Plan 2025 Demands + Estimated demands from recent developer requests	**Ultimate Build-Out**: Estimated demands from recent developer requests + max population at NBTC (3.5 FAR)	2025
			Interim 1: Build out of NBTC planned developments	
			Interim 2: Only prioritized NBTC planned development (to be determined by CONSULTANT Team/CITY)	
2.2	Existing Conditions + Proposed Capacity Improvements Identified During the Master Plan (1)	**Facility:** Existing facility network + Proposed Master Plan Improvements **Demand**: Master Plan 2025 Demands + Estimated demands from recent developer requests	**Ultimate Build-Out**: Estimated demands from recent developer requests + max population at NBTC (3.5 FAR)	2025
			Interim 1: Build out of NBTC planned developments	
			Interim 2: Only prioritized NBTC planned development (to be determined by CONSULTANT Team/CITY)	
2.3	Future Conditions + Proposed Capacity Improvements Identified During the Master Plan (2)	**Facility:** Existing facility network + Proposed Master Plan Improvements **Demand:** Master Plan 2045 Projected Demands	**Ultimate Build-Out**: Estimated demands from recent developer requests + max population at NBTC (3.5 FAR)	2045
			Interim 1: Build out of NBTC planned developments	
			Interim 2: Only prioritized NBTC planned development (to be determined by CONSULTANT Team/CITY)	

(1) Planned Master plan improvements to be modeled will be limited to the improvements in City's current 5 year Capital Plan. City to provide this list. (2) Proposed Master Plan Improvements to be included in the model will incorporate all the capacity related improvements identified in the Master Plan.

Proposed Sewer Modeling

Following the review and assessment of existing conditions, The CONSULTANT TEAM will modify the existing conditions model with updated flows to assess the interim and build-out configurations included in Table 5. Each scenario will be modeled and evaluated, and its results compared with the existing conditions model to evaluate the proposed improvements within the system. Each analysis will include analysis of Pump Station 19 to ensure improvements to the system can be conveyed downstream.

Table 5 – System Configuration Scenarios and Timelines

Scenario	Title	Description	North Shore D Demands	Year
2.4	Existing Conditions	**Facility:** Existing facility network. **Flow**: Master Plan 2025 dry and wet weather flow + Estimated demands from recent developer requests	**Ultimate Build-Out**: Estimated demands from recent developer requests + max population at NBTC (3.5 FAR)	2025
			Interim 1: Build out of NBTC planned developments	
			Interim 2: Only prioritized NBTC planned development (to be determined by CONSULTANT Team/CITY)	
2.5	Existing Conditions + Proposed Capacity Improvements Identified during the Master Plan (1)	Facility: Existing facility network + Proposed Master Plan Improvements Flow: Master Plan 2025 dry and wet weather flow + Estimated flows from recent developer requests	**Ultimate Build-Out**: Estimated demands from recent developer requests + max population at NBTC (3.5 FAR)	2025
			Interim 1: Build out of NBTC planned developments	
			Interim 2: Only prioritized NBTC planned development (to be determined by CONSULTANT Team/CITY)	
2.6	Future Conditions + Proposed Capacity Improvements Identified During the Master Plan (2)	**Facility:** Existing facility network + Proposed Master Plan Improvements **Flow**: Master Plan 2045 dry and wet weather flow	**Ultimate Build-Out**: Estimated demands from recent developer requests + max population at NBTC (3.5 FAR)	2045
			Interim 1: Build out of NBTC planned developments	
			Interim 2: Only prioritized NBTC planned development (to be determined by CONSULTANT Team/CITY)	

(1) Planned Master plan improvements to be modeled will be limited to the improvements in City's current 5 year Capital Plan. City to provide this list. (2) Proposed Master Plan Improvements to be included in the model will incorporate all the capacity related improvements identified in the Master Plan.

Each configuration will be modeled and evaluated against local level of service criteria, and its results compared with the existing conditions model to evaluate the improvements within the system. Each scenario will include LOS analysis for depth to diameter ratios, surcharged pipes, backwater, SSO's, and freeboard, maximum and minimum pressures, headloss gradient, and pipe and valve criticality for the project area.

Deliverables

- Summary of sewer system improvements with descriptions and before and after improvements results.

- Summary of water main improvements with descriptions and before and after improvements results.

- Copy of InfoWorks and InfoWater models including all scenarios developed and modeled by Hazen as part of this service order.

Identification of Capital Improvement Needs

CONSULTANT Team will complete the analysis and identify any additional water and sewer improvements that are required for each scenario and within the North Shore D boundary areas. CONSULTANT Team will provide a draft TM summarizing the model development, analysis, scenarios, and water distribution and sewer system improvements. A virtual workshop will be held to discuss the TM and obtain comments. Following receipt of comments, CONSULTANT Team will provide a final water distribution and sewer system TM.

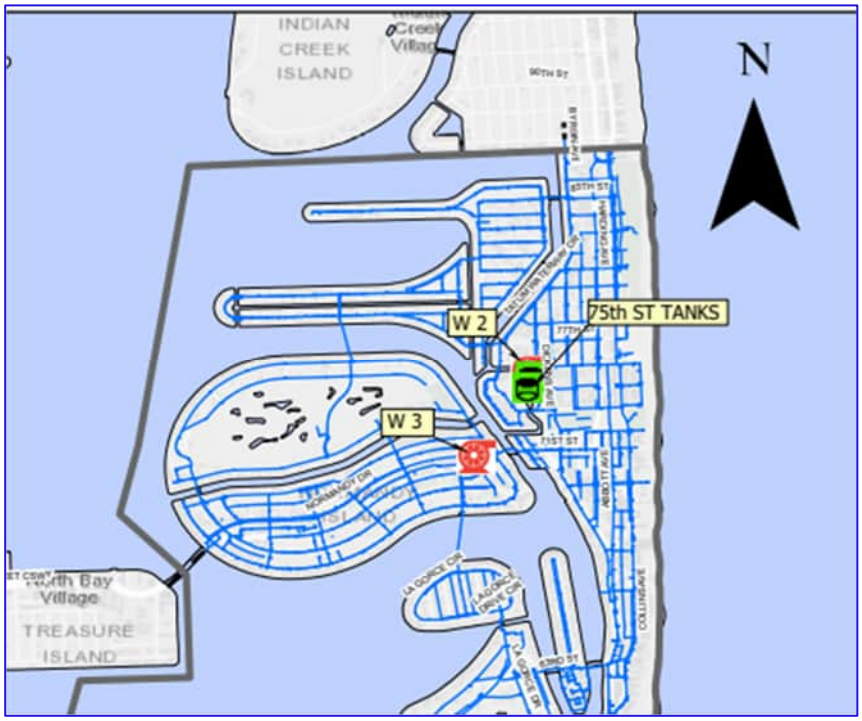


Figure 3. Potable Water System Overview, Hazen 2019

Meetings

- Workshop (Virtual) to discuss modeling results

Deliverables

- Copy of InfoWater & InfoWorks Models, including all scenarios.
- One (1) electronic copy of the Draft TM.
- One (1) electronic copy signed and sealed of the Final TM. 3.
- Workshop minutes and presentation materials.

Task 4 Project Definition and Phasing

4.1 Project Definitions

The CONSULTANT TEAM will prepare project definitions consisting of narrative, list of improvements and supporting maps, for the interim scenario as defined in the stormwater, water, sanitary sewer modeling scenarios defined before, transportation and roadways. These definitions will include elements from each of the infrastructure systems evaluated in Task 3, where applicable, to comprise a complete "neighborhood style" project that supports reliable and resilience public services for the four proposed scenarios.

Meetings

- Two virtual workshops with CITY staff to review and refine the project definitions and infrastructure composition

Deliverables

- Draft and final TM summarizing the project descriptions for the improvements identified (electronic)

4.2 Opinion of Probable Cost

The CONSULTANT TEAM will prepare AACE International Class 5 Opinion of Probable Cost (OPCC) for proposed improvements identified on Task 4.1, considering the emphasis on North Beach Town Center, and the North Shore D neighborhood. These cost estimates will include hard and soft costs including design, permitting, land acquisition and construction. This cost information will be used to inform funding and financing strategies and phased project implementation.

Deliverables

- TM summarizing the cost assumptions and estimate approach. (electronic)
- Class 5 construction cost estimate for the proposed improvements for each of the four (4) scenarios identified. (MS excel)

Meetings/Workshops

- None

Deliverables:

- Draft and Final OPCC for the improvements

4.3 Proposed Project Sequencing and Phasing Review

The CONSULTANT TEAM will refine the project definitions based on the input from the permitting review, the cost estimates, stakeholder input and CITY input. This refinement will also factor in critical infrastructure needs, connected and dependent infrastructure systems, anticipated funding, private development needs and construction timing and to minimize community disruption. This constructability review will provide guidance on the appropriate actions required during each phase of construction to ensure the intended outcomes are achieved and to help avoid unintended consequences.

This review will provide critical information required to inform the Conceptual Design Report and act as a preliminary implementation plan.

Deliverables

- TM with proposed project sequencing and phasing (electronic)

Task 5 Development of Basis of Design Report (BODR)

5.1 Development of Conceptual Design

A Basis of Design Report (BODR) will be prepared to document the modeling, analysis, and definition of project subsurface improvements. This BODR will be used to obtain project approvals from CITY Commission prior to starting the development of the next Work Order for the project, The BODR will include modeling results, definition of improvements, design criteria, and site layout sketches,.

The following is a draft outline of the Conceptual Design Report.

- Summary of data collection and site condition
- Overall Design criteria
- Improvements to Stormwater System
  - Exhibits for the proposed pipeline location, alignment, and size.
  - Preliminary evaluation of water quality wells
- Stormwater Pump Station(s) Conceptual design
  - Design Criteria and Sizing
  - Location and layout of pump station(s)
  - Aboveground components
- Potable Water and Fire Water System
  - Exhibits for the proposed pipeline location, alignment, and size.
- Sanitary Sewer System
  - Exhibits for the proposed pipeline location, alignment, and size.
- Utility Conflict Coordination Matrix Opinion of Probable Construction Cost (Level 5)
- Conceptual Constructability/Sequence of Construction Analysis

Deliverables (electronic only)

- Draft and Final Basis of Design Report (electronic)
- Engineer Opinion of Probable Cost (Class 5)

Meetings/Workshops

- Technical Workshop (virtual) with CITY's personnel

Task 6 Technical Support during Implementation of the Public Outreach Plan (T&M)

The CONSULTANT TEAM will provide technical support to the CITY during the implementation of the public communication plan detailed before. Technical support will be focused on developing technical content for interactions with stakeholders. Interactions will include defined in previous Tasks and the support activities will include meeting logistics, development of presentation of graphical materials that may include renderings and graphics, display boards, development of meeting agenda, and meeting summaries.

Table 1 – Outreach Meetings

Meeting Focus	Number of Meetings	Assumptions	CONSULTANT Team Attendees
Community Introduction Meetings	Up to Two (2)	For each meeting the CONSULTANT Team will develop up to five (5) rendering views, PowerPoint presentation, agenda, and meeting summaries	Project Manager, Design Manager and PIO Team
City Commission	One (1)		Project Manager, Design Manager and PIO Team
Pump Station Meetings	Up to Two (2)		Project Manager, Design Manager, Roadway Design Lead, Stormwater Design Lead. and PIO Team

Deliverables

- Draft and final Agenda and meeting minutes
- Presentation and technical graphical material as per Table 1

Task 7 Field Studies

This task will include the execution of the field studies required to complete the conceptual design of the project. CITY to provide copies of building Finished Floor Elevations (FFEs) from elevation certificates, past topographical surveys and/or current LiDAR information for the project area.

7.1 Location, Topographic and Boundary Survey

The CONSULTANT TEAM's Surveyor will complete the field work required to develop a location and boundary survey for all improvements within the public owned properties and road rights of way, within the limits of the project (per red line in Figure 1) including the full Right of Way along the perimeter road corridors adjacent to the project. This survey will include definition of project controls and benchmarks (vertical and horizontal), In addition, the trees identified in the right-of-way will be surveyed (location and chest-height diameter) and identified in a table. All trees greater than 3-inch diameter (at chest height) or palms over 15-feet tall will be included in the survey. The survey will identify which trees are good candidates for relocation elsewhere in the CITY, versus those that are in poor health or otherwise poor specimens and should be destroyed.

The CONSULTANT TEAM's Surveyor will show rights-of-way computing field evidence, plats, deeds, and other documentation relative to the project. All lot lines and ownership lines, inclusive of locations, bearings, and dimensions, within the survey limits will be shown graphically. The survey should include the following, at a minimum:

- Land Survey (LS) will show any easements, covenants, restrictions, etc. that can be found on plats, deeds, and other public records relative to the project. However, without a Title Commitment or Title Search there is no guarantee that all easements, covenants, restrictions, etc. will be shown on the survey.

- Horizontal and vertical control within the limits of the survey.

- The survey will be geo-referenced to the Florida State Plane Coordinate System based on the North American Datum of 1983/2011 (NAD83/11).

- All elevations will be referenced to the North American Vertical Datum of 1988 (NAVD88).

- LS will collect all significant aboveground improvements including but not limited to; pavement, sidewalks, curb and gutters, driveways, parking spaces, medians and median islands, building facades, doorways, guardrails, trash receptacles, benches and chairs, bus stops, hedges and general limits of shrubbery, trees and palms, ramps, stairwells, planters, guy wires, guy anchors, valves, valve boxes, electrical boxes, signs, fences, walls, bike racks, parking meters, fire hydrants, fire connectors, post boxes, newspaper stations, bollards, poles, overhead lines, and any other significant above-ground improvements and utilities within the survey limits.

- Elevations will be collected equivalent to a twenty-five (25) foot grid throughout the survey limits and will include, at a minimum, the crown of road, edge of pavement, top of curb and driveway elevations at right-of-way lines. Additional elevations will be collected sufficient to identify all grade changes and features of interest within the survey limits.

- Finish Floor Elevations (FFE) for all structures/buildings that have doorways or building entrances along the right-of-way within the survey limits.

- Locate all trees and palms having a three (3) inch diameter or greater at breast height (DBH) or being six (12) feet in height or greater to include the following for each: scientific name, common name, diameter at breast height (DBH), height of tree, and canopy. A Tree Table will be provided.

- Existing drainage and sanitary structures and will show rim elevation, structure bottom elevation, pipe size, pipe material, pipe direction, direction of water flow, and inverts.

- A Digital Terrain Model (DTM) will be created and provided.

Deliverable

Draft and Final Location and Boundary Survey (electronic)

7.2 Subsurface Utility Engineering (SUE) Quality Level "B"

The CONSULTANT TEAM's Surveyor will perform Quality Level "B" SUE Designation services according to the American Society of Civil Engineers' (ASCE) standards within the survey limits, as per the attached exhibit provided by the Client, to determine if there are any underground utility conflicts. The CONSULTANT TEAM's Surveyor will use surface detection equipment such as Electromagnetic Locator and Ground Penetrating Radar (GPR).

Please note factors such as soil composition, moisture, and the type and depth of utility controls the effectiveness of the GPR. Saturated soils severely limit the effectiveness of the GPR signal. In addition, confined or obstructed areas that restrict the scanning pattern can impede the data collected and reduce the accuracy of the desired results. Designated utility lines will be collected and shown on our deliverable. Any designated utility lines provided will be within two (2) feet horizontally of either side of the depicted line.

LS will collect any utility lines found. Longitude will prepare a Civil 3D CAD file with the collected utilities geo-referenced to the Florida State-Plane Coordinate System.

7.3 Development of Geotechnical Engineering Evaluation

CONSULTANT TEAM's Geotechnical Sub-Consultant will complete the preliminary geotechnical field investigation and laboratory analysis required for the project (refer to Attachment D). CONSULTANT TEAM geotechnical engineers will use Geotechnical information to develop sub-surface structural design recommendations and pavement design recommendations. A signed and sealed geotechnical report will be submitted.

Deliverable

- Boring Plan for coordination with CITY

- Draft and final Geotechnical Report (electronic)

Assumptions

A. Infrastructure improvements will be limited to those within the project limits (with those outside of the project limits being those defined by W/WW/SW Master Plans)

B. Responses to various inquires shall be made based on the best available information provided to the CONSULTANT TEAM at the time of the review.

C. The latest water model used in the Water Master Plan (October 2019) will be used to assess the impacts of the proposed scenarios.

D. The latest sewer model used in the Sewer Master Plan (October 2019) will be used to assess the impacts of the proposed scenarios.

E. The CONSULTANT TEAM assumes that the models are considered calibrated and acceptable. Calibration would be considered an additional service not covered under this scope of work.

F. Pertinent GIS data necessary to input the gravity sewer system in Basin 19 into the model is readily available and the CONSULTANT TEAM is not responsible for collecting any survey data.

G. Only updated flows for the project area are included. No additional review for Citywide Master Plan projects will be recommended based on any change in wastewater flows. The CONSULTANT TEAM will notify the client of any insufficient Master plan project impacting the project area.

H. The CITY will provide operational data (such as but not limited to storage tank levels, pump on-off times, pump speeds, etc.) in excel / csv format.

I. The CITY will provide information about any major changes in pipe network due to construction, operational changes or corrections in GIS since the master plan development in 2019.

J. The CITY will provide available information and record drawings, as well as any other pertinent data requested by THE CONSULTANT TEAM.

K. The CITY acknowledges that the CONSULTANT TEAM's scope is based on information made available at the time of this Task Order and data gathered during meetings.

L. The CITY will provide all requested information within a reasonable timeframe. It is assumed that all information provided by the CITY is complete and accurate.

M. Finished floor elevations will be used for establishing flood vulnerabilities and system analysis to meet Level of Service.

N. It is assumed that no design or permitting will be conducted during this Work Order.

O. It is assumed that only subsurface modeling and improvements will be included on this Work Order.

P. It is assumed CONSULTANT TEAM will receive one round of consolidated review comments from the CITY on all deliverables within 3 weeks after submittal. If the CITY needs additional review time, the schedule will need to be updated.

Q. CONSULTANT TEAM shall at no time take title, risk of loss or ownership of the hazardous materials or wastes. CITY recognizes that the CONSULTANT Team assumes no risk and/or liability for hazardous materials encountered while performing any services associated with such hazardous waste.

R. No field archeology evaluations are needed/included.

S. All deliverables will be submitted in electronic format.

T. Jacobs will reasonably rely upon the accuracy, timeliness, and completeness of the information/data provided by the Client or other third parties without independent verification. Additional effort by Jacobs due to invalid data or information provided by the Client or other third-parties, may entitle Jacobs to additional Compensation.

U. In providing opinions of cost, financial analyses, economic feasibility projections, for the project, Jacobs has no control over cost or price of labor and materials; unknown or latent conditions of existing equipment or structures that may affect operation or maintenance costs; competitive bidding procedures and market conditions; time or quality of performance by operating personnel or third parties; and other economic and operational factors that may materially affect the ultimate project cost or schedule. Therefore, Jacobs makes no warranty that Client's actual project costs, financial aspects, economic feasibility, will not vary from Jacobs' opinions, analyses, projections, or estimates and Jacobs' shall have no liability for such variances.

V. In soils, foundation, groundwater, utilities, and other subsurface investigations, the actual characteristics may vary significantly between successive test points and sample intervals and at locations other than where observations, exploration, and investigations have been made. Because of the inherent uncertainties in subsurface evaluations, changed or unanticipated underground conditions may occur that could affect total project cost and/or execution. These conditions and cost/execution effects are not the responsibility of Jacobs.

Exclusions

A. Evaluations associated with noise and odor related to construction activities.

B. Virtual meeting space or virtual town hall framework is not included in this Work Order.

C. The project limits included herein is based on information provided by the CITY. Thus, any additional site(s) evaluations, design and construction implications and comparisons outside of the project limits or not expressly stated herein, are not included in this Work Order.

D. No presentations to or approvals by the CITY of Miami Beach Historic Preservation Board are required, as there are no impacted historic districts nor properties other than the 5-6 beachfront properties outlined in red, and no construction is expected on Collins Avenue as part of the North Shore D project:

Project Schedule

A delivery schedule is included as attachment B.

COMPENSATION AND PAYMENT

The CONSULTANT TEAM agrees to provide the scope of services in Task 1 to 5 and part of 7 for a **Lump Sum** amount of $2,275,644.42, and a Not to Exceed amount of $378,175.04 for a Total Not Exceed amount of $2,653,819.46. Invoices will be submitted monthly based on the Consultant's percent complete of the Lump Sum values in the table below, including subconsultants. See attachments for the detailed compensation breakdown.

Task	Description	LOE
1.0	Project Management & Coordination	$ 244,926.32
2.0	Stakeholder Communication, and Consensus Building	$ 137,466.80
3.0	Infrastructure Modeling and Needs Assessment	$ 976,620.30
4.0	Project Definition and Phasing	$ 106,147.76
5.0	Development of Basis of Design Report (BODR)	$ 601,244.96
7.0	Field Surveying and Topography	$ 209,238.28
	Sub-Total, LS	$ 2,275,644.42
6.0	Technical Support to Public Outreach (T&M)	$ 173,583.96
7.0	Subsurface Utility Exploration (SUE) (T&M)	$ 155,373.28
7.0	Geotechnical Investigations	$ 28,717.80
	Sub-Total, T&M NTE	$ 357,675.04
	Reimbursable Expenses(*)	$ 20,500.00
	Total WO, NTE	$ 2,653,819.46

(*) Reimbursable expenses up to $20,500 have been included to cover the cost for the Production and Preparation of Graphics for Community Workshops and for office and travel expenses (refer to Attachment A for allocations). Office and travel expenses shall only be utilized for actual travel related expenditures made by Jacobs Team (Jacobs and sub-consultants) subject matter experts from outside the tri-County area in the interest of the project and as pre-approved by the City Project Manager. Travel reimbursable will be in accordance with the City's travel policy OD.20.01 "Travel on City Business".

Attachment A: Detailed Level of Effort

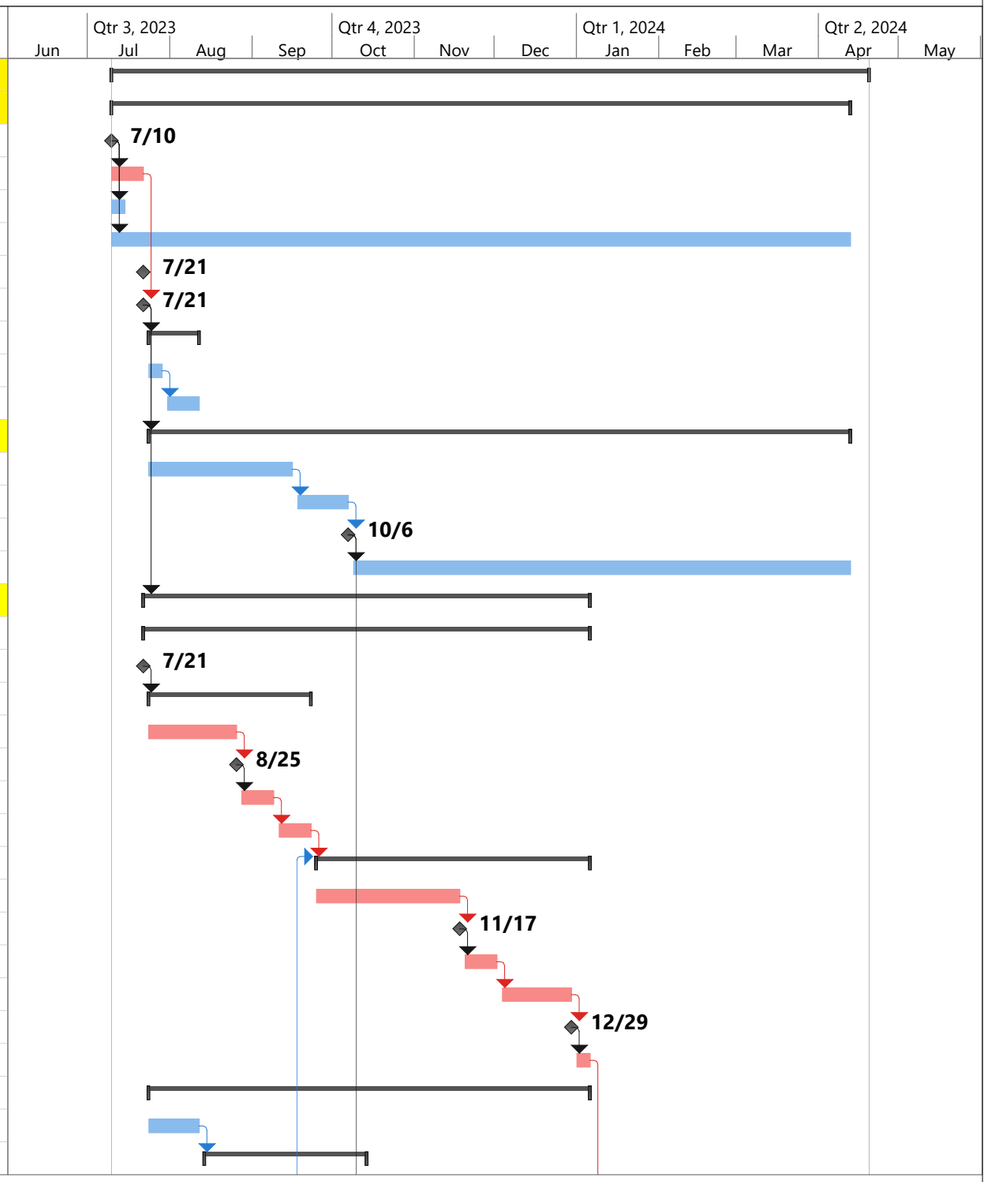
Work Order - Phase 1: North Beach Neighborhood Improvements Project
Fee Breakdown

	Project Management			Architectural, Landscaping				ST Pump Station																Roadways	PIO						
	PM (G Canino)	Delivery Manager (Axel Rivera)	Admin (Carla Erazo)	Lead (Chad St. John)	Sarah Marrs	SJ Harris	Alex Marler	Design Manager (Tom Waldeck)	QA/QC (Mitch Griffie)	QA/QC (Jennifer Baldwin)	QA/QC (Hiran De Mel)	Cost Estimating (Frank Costanzo)	Architecture PS (Laila Amador)	Civil/Yard Piping (Tony Malone)	Civil/Yard Piping (Childress, Christel C/YP)	Process Mechanical (Postrozny, Hank)	Process Mechanical (Fitzgerald, Cullen)	Structural (Petty, Garrick)	Structural (Raymont, Paul)	I&C (Atkins, Jerry)	I&C (Pastrana, Amy)	Geotech	Electrical (TBD)	Electrical (TBD)		Alex Meitin	Leticia Solaun						
	Project Manager Senior	Project Engineer Senior	Admin	Project Engineer Senior	Engineer	Designer	Designer	Senior Associate	Senior Associate	Senior Associate	Senior Associate	Senior Associate	Project Engineer Senior	Senior Engineer	Principal Designer	Project Engineer Senior	Principal Designer	Project Engineer Senior	Designer	Project Engineer Senior	Designer - I&C/Electrical	Senior Associate	Project Engineer Senior	Designer - I&C/Electrical	Admin	Project Engineer Senior	Senior Principal Scientist	Total Hours	Sub-Consultant Cost (CES)	Sub-Consultant Cost (Hazen)	Sub-Consultant Cost (Brizaga)	Sub-Consultant Cost (Longitude)	Sub-Consultant Cost (PSI)	TOTAL COST
	$258.53	$196.80	$90.18	$196.80	$142.96	$114.58	$114.58	$252.49	$252.49	$252.49	$252.49	$252.49	$196.80	$185.66	$149.59	$196.80	$149.59	$196.80	$114.58	$196.80	$114.58	252.49	196.8	$114.58	$90.18	$196.80	$173.99						
Task 1 - Project Management & Coordination																																	
Project Management	306	112	24					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	442	$ 52,735.00	$ 32,081.20				$ 188,132.30
Project Kick-Off	8	8	8					8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	$ 14,062.00		$ 4,105.66			$ 24,551.66
Field Site Visit/Assessment Review	8	8						8	8		0					8										0		40	$ 12,693.00					$ 21,949.88
Data Collection and Geographic Information System (GIS) Update	8	8						0					8	8	24											0		56						$ 10,292.48
Subtotal	*330*	*136*	*32*	*0*	*0*	*0*	*0*	*16*	*8*	*0*	*0*	*0*	*8*	*8*	*24*	*8*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*570*	$ 79,490.00	$ 32,081.20	$ 4,105.66	$ -	$ -	**$ 244,926.32**
Task 2 - Stakeholder Communication, and Consensus Building																																	
Development of Public Communication Plan	12	4																									24	40			$ 24,901.36			$ 32,966.68
Community Introduction Meetings	12																										8	20			$ 16,783.25			$ 21,277.53
Developer Introduction Meetings	12																										0	12			$ 12,005.03			$ 15,107.39
Brand Development	8																										8	16			$ 9,259.58			$ 12,719.74
Project Updates and Stakeholder Coordination	12	4																										16			$ 5,655.54			$ 9,545.10
Pump Station Meetings	12	8																										20			$ 20,161.12			$ 24,837.88
Basis of Design Report	12	4																									8	24			$ 15,731.00			$ 21,012.48
Subtotal	*80*	*20*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*48*	*148*	$ -	$ -	$ 104,496.88	$ -	$ -	**$ 137,466.80**
Task 3 - Infrastructure Modeling and Needs Assessment																																	
Stormwater Modeling	20	12							0	40	0	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	0	96	$ 245,931.00					$ 268,286.00
Stormwater Pump Stations	30	12						60	44		0	0	24	40	40	60	60	0	0	24	24	0	24	24	20	0	0	486	$ 103,898.00					$ 195,940.90
Stormwater Management System (Water Quality)	20	12						24		24																		80	$ 160,013.00					$ 179,664.72
Potable Water & Fire Water Distribution System & Sanitary Sewer System	20	12						24		16	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	152		$ 294,897.68				$ 332,728.68
Subtotal	*90*	*48*	*0*	*0*	*0*	*0*	*0*	*108*	*44*	*80*	*80*	*0*	*24*	*40*	*40*	*60*	*60*	*0*	*0*	*24*	*24*	*0*	*48*	*24*	*20*	*0*	*0*	*814*	$ 509,842.00	$ 294,897.68	$ -	$ -	$ -	**$ 976,620.30**
Task 4 - Project Definition and Phasing																																	
Project Definitions	24	8						24			0					24												104						$ 23,017.92
Construction Cost Estimate	8	8						16				88		40		24										24		208						$ 46,774.40
Proposed Project Sequencing and Phasing Review	24	8						24	16			24	8	16		16										24		160						$ 36,355.44
Subtotal	*56*	*24*	*0*	*0*	*0*	*0*	*0*	*64*	*16*	*0*	*0*	*112*	*8*	*80*	*0*	*64*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*48*	*0*	*472*						**$ 106,147.76**
Task 5 - Development of Basis of Design Report (BODR)																																	
Development of Basis of Design Report	8							184	32	40	40	144	58	180	180	196	88	36	22	72	36	36	124	44	44	24	0	1580	$ 72,573.00					$ 384,358.48
Utility Coordination and Conflict Identification	8																										0	0	$ 96,156.00					$ 98,224.24
Preliminary Evaluation of Water Quality Wells	8																										0	0	$ 116,594.00					$ 118,662.24
Subtotal	*24*	*0*	*0*	*0*	*0*	*0*	*0*	*184*	*32*	*40*	*40*	*144*	*58*	*180*	*180*	*196*	*88*	*36*	*22*	*72*	*36*	*36*	*124*	*44*	*44*	*24*	*0*	*1580*	$ 285,323.00	$ -	$ -	$ -	$ -	**$ 601,244.96**
Task 6 - Technical Support to Public Outreach (T&M)																																	
Technical Support during Implementation of the Public Outreach Plan	16		0	76	116	224	216	32	0	0	0	0	0	24	0	80	40	0	0	0	0	0	0	0	0	40	0	864	$ 45,357.00					$ 173,583.96
Subtotal	*16*	*0*	*0*	*76*	*116*	*224*	*216*	*32*	*0*	*0*	*0*	*0*	*0*	*24*	*0*	*80*	*40*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*40*	*0*	*864*	$ 45,357.00	$ -	$ -	$ -	$ -	**$ 173,583.96**
Task 7 - Field Studies																																	
Field Surveying and Topography	8	8	4					8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28				$ 203,215.00		$ 209,238.28
Subsurface Utility Exploration (SUE) (T&M)	8	8	4					8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28				$ 149,350.00		$ 155,373.28
Geotechnical Investigations	8	8	4					8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28					$ 22,694.52	$ 28,717.80
Subtotal	*24*	*24*	*12*	*0*	*0*	*0*	*0*	*24*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*84*				$ 352,565.00	$ 22,694.52	**$ 393,329.36**
Reimburable Expenses																																	
Travel: Subject Matter Expert out of Tri-County Area																												$ 3,000.00		$ 1,000.00				$ 4,000.00
Cost of Production and Preparation of Graphics for Community Workshops																												$ 500.00			$ 16,000.00			$ 16,500.00
Subtotal																												$ 3,500.00		$ 1,000.00	$ 16,000.00			**$ 20,500.00**
subtotal hours (Task 1 to 7)	620	252	44	76	116	224	216	428	100	120	120	256	98	332	244	408	188	36	22	96	60	36	172	68	64	112	48	4,332						
Subtotal Cost (Task 1 to 7)	$160,288.60	$49,593.60	$3,967.92	$14,956.80	$16,583.36	$25,665.92	$24,769.28	$108,064.72	$25,249.00	$30,298.80	$30,298.80	$64,637.44	$19,286.68	$61,639.12	$36,498.56	$80,284.40	$28,132.92	$7,084.80	$2,520.76	$18,892.80	$6,874.80	$9,089.64	$33,849.60	$7,791.44	$5,771.52	$22,041.60	$8,351.52	$904,964.52	$ 920,012.00	$ 32,081.20	$ 27,978.88	$ 324,602.56	$ 352,565.00	$ 22,694.52	**$ 2,653,819.46**
GRAND TOTAL - WO																																		**$ 2,653,819.46**

Attachment B: Project Schedule

City of Miami Beach
North Shore D Neighborhood Improvement Project
Phase 1 Proposed Schedule (May 31st, 2023)

ID	Task Name	Duration	Start	Finish
1	**North Shore D - Phase 1: Development of Basis of Design Report**	**205 days**	**Mon 7/10/23**	**Fri 4/19/24**
2	**Task 1 - Project Management and Coordination**	**200 days**	**Mon 7/10/23**	**Fri 4/12/24**
3	Project NTP	0 days	Mon 7/10/23	Mon 7/10/23
4	Project Planning	10 days	Mon 7/10/23	Fri 7/21/23
5	Data Collection	5 days	Mon 7/10/23	Fri 7/14/23
6	Project Management and Oversight	200 days	Mon 7/10/23	Fri 4/12/24
7	**Project Kickoff and Visioning Workshop**	**0 days**	**Fri 7/21/23**	**Fri 7/21/23**
8	Project Kickoff Meeting	0 days	Fri 7/21/23	Fri 7/21/23
9	**Project Field Visit/Assessment Review**	**15 days**	**Mon 7/24/23**	**Fri 8/11/23**
10	Plan and Coordinate Field Visit	5 days	Mon 7/24/23	Fri 7/28/23
11	Field Site Visits by Individual Disciplines	10 days	Mon 7/31/23	Fri 8/11/23
12	**Task 2 - Initial Stakeholder Communication, and Consensus Building**	**190 days**	**Mon 7/24/23**	**Fri 4/12/24**
13	Development of Communication Plan	40 days	Mon 7/24/23	Fri 9/15/23
14	Review of Outreach Plan	15 days	Mon 9/18/23	Fri 10/6/23
15	Submittal of Comments to Outreach Plan	0 days	Fri 10/6/23	Fri 10/6/23
16	Implementation of Communication Plan & Support (Task 7)	135 days	Mon 10/9/23	Fri 4/12/24
17	**Task 3 - Subsurface Modeling and Improvement Definition**	**120 days**	**Fri 7/21/23**	**Fri 1/5/24**
18	**Stormwater System Modeling**	**120 days**	**Fri 7/21/23**	**Fri 1/5/24**
19	Stormwater Modeling Criteria Definition and Meeting(s)	0 days	Fri 7/21/23	Fri 7/21/23
20	**Existing Stormwater Model and Analysis**	**45 days**	**Mon 7/24/23**	**Fri 9/22/23**
21	Development of Model	25 days	Mon 7/24/23	Fri 8/25/23
22	Presentation of Results	0 days	Fri 8/25/23	Fri 8/25/23
23	Review Model Based on Results	10 days	Mon 8/28/23	Fri 9/8/23
24	Finalize Model & Document Results	10 days	Mon 9/11/23	Fri 9/22/23
25	**Proposed Stormwater Model Scenarios and Analysis**	**75 days**	**Mon 9/25/23**	**Fri 1/5/24**
26	Development of Model	40 days	Mon 9/25/23	Fri 11/17/23
27	Presentation of Preliminary Results	0 days	Fri 11/17/23	Fri 11/17/23
28	Review Model Based on Comments	10 days	Mon 11/20/23	Fri 12/1/23
29	Finalize Model	20 days	Mon 12/4/23	Fri 12/29/23
30	Workshop to Present Modeling Results and Proposed Improvements	0 days	Fri 12/29/23	Fri 12/29/23
31	Development of TM for SW Modeling	5 days	Mon 1/1/24	Fri 1/5/24
32	**Potable Water System Modeling**	**120 days**	**Mon 7/24/23**	**Fri 1/5/24**
33	Potable Water Modeling Criteria Definition Meeting	15 days	Mon 7/24/23	Fri 8/11/23
34	**Existing Potable Water Model and Analysis**	**45 days**	**Mon 8/14/23**	**Fri 10/13/23**



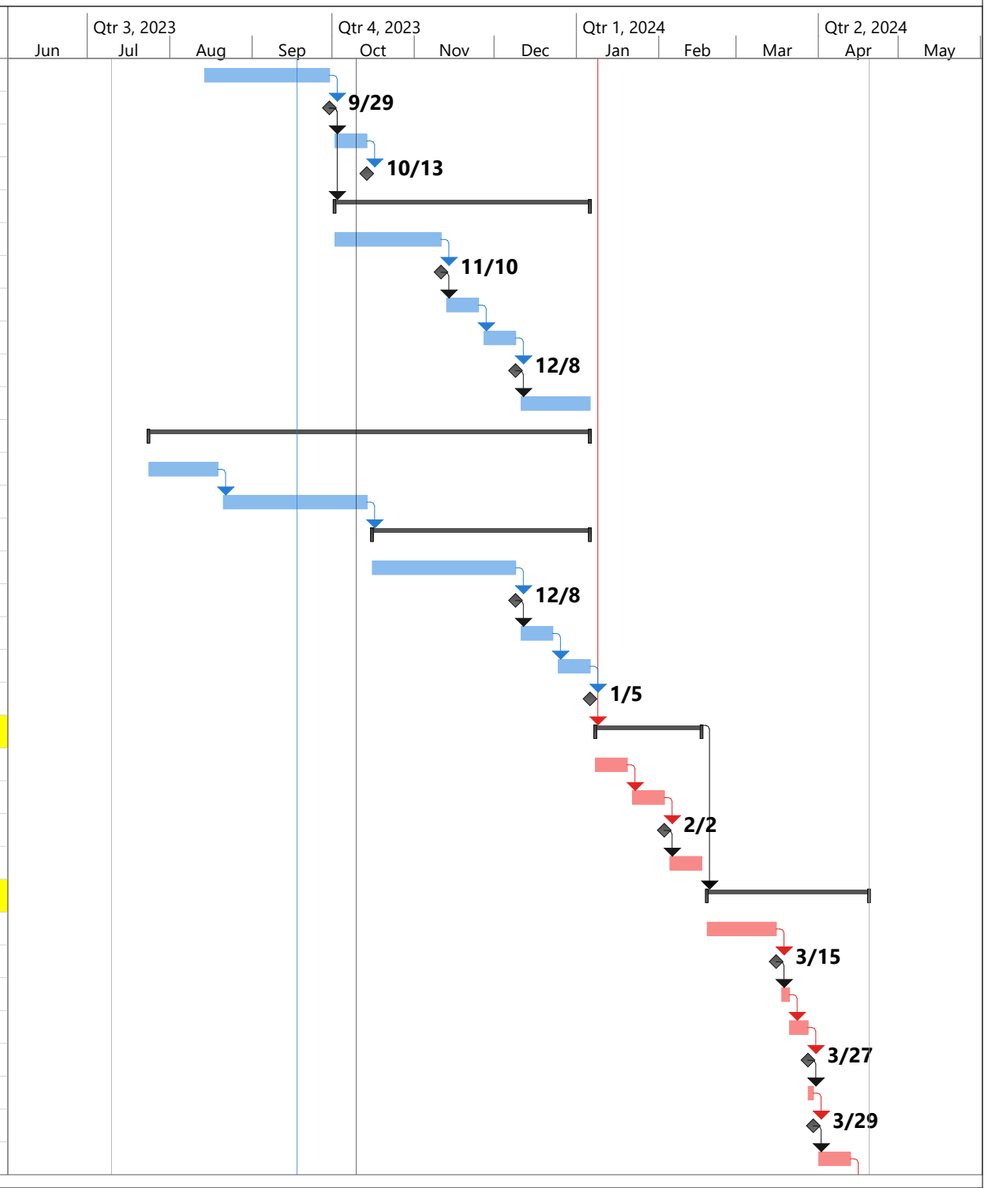
Project: CMB First Street_21121
Date: Tue 5/30/23

Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Critical
Critical Split
Progress
Manual Progress

For Discussion Purposes Only

City of Miami Beach
North Shore D Neighborhood Improvement Project
Phase 1 Proposed Schedule (May 31st, 2023)

ID	Task Name	Duration	Start	Finish
35	Development of Model	35 days	Mon 8/14/23	Fri 9/29/23
36	Presentation of Results	0 days	Fri 9/29/23	Fri 9/29/23
37	Review Model Based on Results	10 days	Mon 10/2/23	Fri 10/13/23
38	Finalize Model & Document Results	0 days	Fri 10/13/23	Fri 10/13/23
39	**Proposed Potable Water Model Scenarios and Analysis**	**70 days**	**Mon 10/2/23**	**Fri 1/5/24**
40	Development of Model	30 days	Mon 10/2/23	Fri 11/10/23
41	Presentation of Preliminary Results	0 days	Fri 11/10/23	Fri 11/10/23
42	Review Model Based on Comments	10 days	Mon 11/13/23	Fri 11/24/23
43	Finalize Model	10 days	Mon 11/27/23	Fri 12/8/23
44	Workshop to Present Modeling Results and Proposed Improvements	0 days	Fri 12/8/23	Fri 12/8/23
45	Development of TM for Potable Water Modeling	20 days	Mon 12/11/23	Fri 1/5/24
46	**Sanitary Sewer Water System Modeling**	**120 days**	**Mon 7/24/23**	**Fri 1/5/24**
47	Sanitary Sewer Modeling Criteria Definition Meeting	20 days	Mon 7/24/23	Fri 8/18/23
48	Existing Sanitary Sewer Model and Analysis (By Others)	40 days	Mon 8/21/23	Fri 10/13/23
49	**Proposed Sanitary Sewer Model Scenarios and Analysis (By Others)**	**60 days**	**Mon 10/16/23**	**Fri 1/5/24**
50	Development Model	40 days	Mon 10/16/23	Fri 12/8/23
51	Presentation of Preliminary Results	0 days	Fri 12/8/23	Fri 12/8/23
52	Review Model Based on Comments	10 days	Mon 12/11/23	Fri 12/22/23
53	Finalize Model	10 days	Mon 12/25/23	Fri 1/5/24
54	Workshop to Present Modeling Results and Proposed Improvements	0 days	Fri 1/5/24	Fri 1/5/24
55	**Task 4 - Project Definition and Phasing**	**30 days**	**Mon 1/8/24**	**Fri 2/16/24**
56	Complete Project Definition	10 days	Mon 1/8/24	Fri 1/19/24
57	Plan workshop for Project Defintion and Phasing	10 days	Mon 1/22/24	Fri 2/2/24
58	Workshop	0 days	Fri 2/2/24	Fri 2/2/24
59	Finalize Project Definition and Phasing	10 days	Mon 2/5/24	Fri 2/16/24
60	**Task 5 - Development of Basis of Design Report (BODR)**	**45 days**	**Mon 2/19/24**	**Fri 4/19/24**
61	Development of BODR	20 days	Mon 2/19/24	Fri 3/15/24
62	Drop Tools and Submittal for Internal Quality Review	0 days	Fri 3/15/24	Fri 3/15/24
63	Internal Quality Review	3 days	Mon 3/18/24	Wed 3/20/24
64	Development of OPCC and Schedule	5 days	Thu 3/21/24	Wed 3/27/24
65	Internal Submittal for Production	0 days	Wed 3/27/24	Wed 3/27/24
66	Production	2 days	Thu 3/28/24	Fri 3/29/24
67	Submittal Draft TM to CMB	0 days	Fri 3/29/24	Fri 3/29/24
68	Review Period by CMB	10 days	Mon 4/1/24	Fri 4/12/24

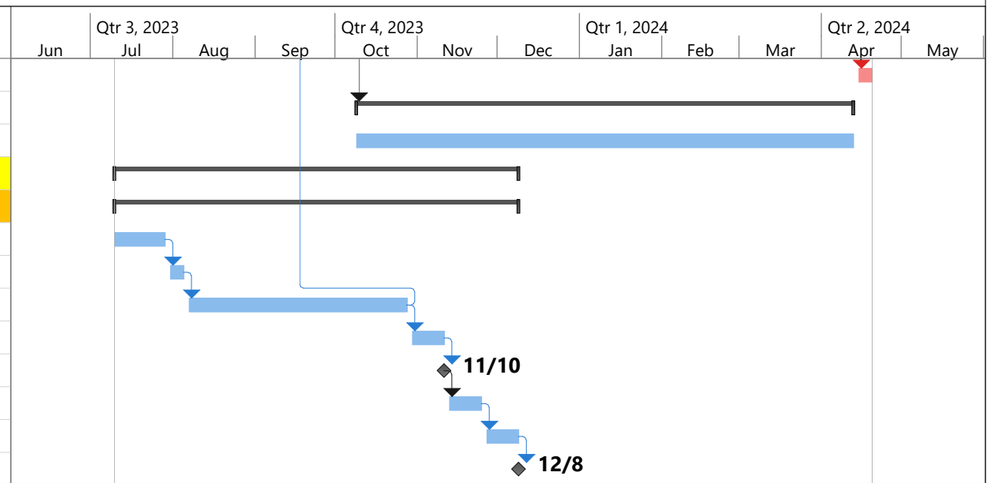


Project: CMB First Street_21121
Date: Tue 5/30/23

Task	Inactive Task	Manual Summary Rollup	External Milestone	Manual Progress
Split	Inactive Milestone	Manual Summary	Deadline	
Milestone	Inactive Summary	Start-only	Critical	
Summary	Manual Task	Finish-only	Critical Split	
Project Summary	Duration-only	External Tasks	Progress	

City of Miami Beach
North Shore D Neighborhood Improvement Project
Phase 1 Proposed Schedule (May 31st, 2023)

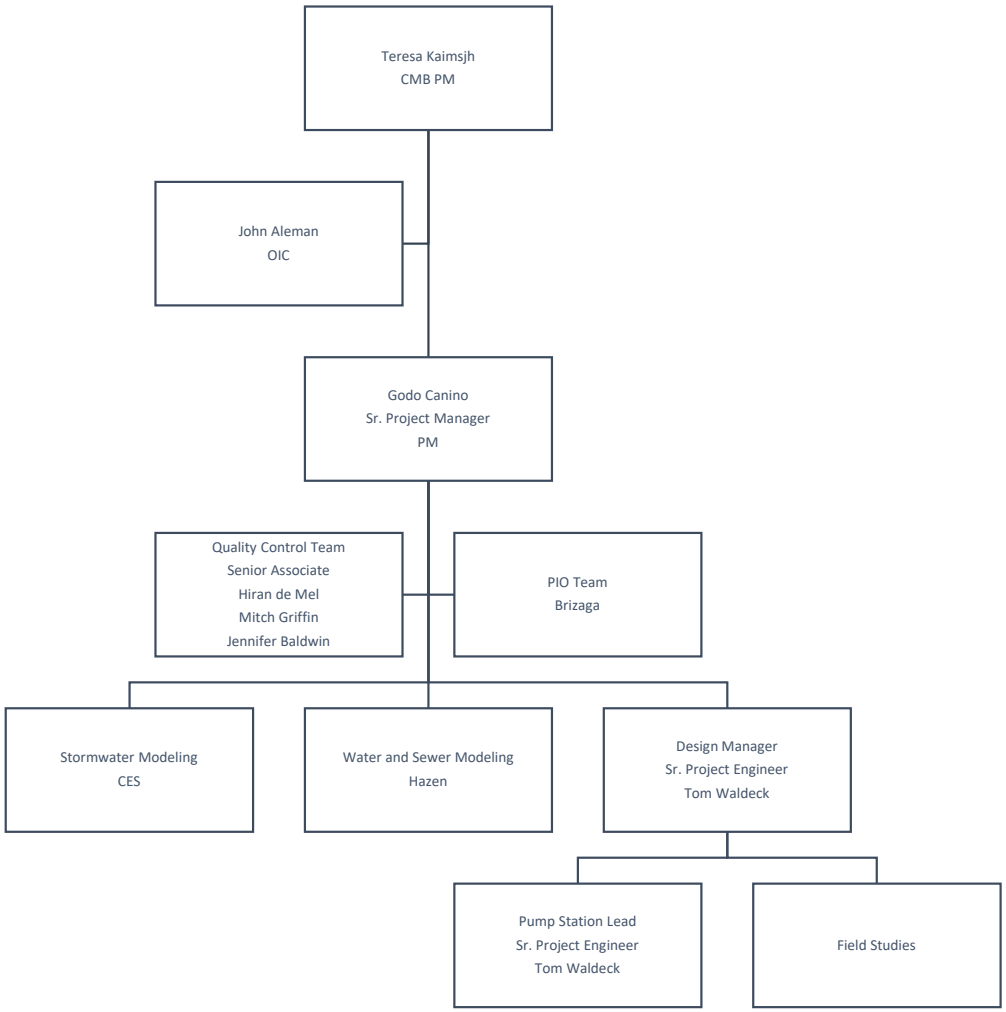
ID	Task Name	Duration	Start	Finish
69	Finalize Conceptual Design TM	5 days	Mon 4/15/24	Fri 4/19/24
70	**Task 6 Technical Support to Public Outreach**	**135 days**	**Mon 10/9/23**	**Fri 4/12/24**
71	Technical Support	135 days	Mon 10/9/23	Fri 4/12/24
72	**Task 7 - Field Studies**	**110 days**	**Mon 7/10/23**	**Fri 12/8/23**
73	**Topographical and Location Survey**	**110 days**	**Mon 7/10/23**	**Fri 12/8/23**
74	Planning of Field Work	15 days	Mon 7/10/23	Fri 7/28/23
75	Submit Plan and Discuss with City	5 days	Mon 7/31/23	Fri 8/4/23
76	Execute Field Work	60 days	Mon 8/7/23	Fri 10/27/23
77	Complete Draft Survey	10 days	Mon 10/30/23	Fri 11/10/23
78	Submit Draft	0 days	Fri 11/10/23	Fri 11/10/23
79	Review Draft	10 days	Mon 11/13/23	Fri 11/24/23
80	Incorporate Comments	10 days	Mon 11/27/23	Fri 12/8/23
81	Submit Final Survey	0 days	Fri 12/8/23	Fri 12/8/23



Project: CMB First Street_21121
Date: Tue 5/30/23

Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Critical
Critical Split
Progress
Manual Progress

Attachment C: Project Organizational Chart


Teresa Kaimsjh
CMB PM
John Aleman
OIC
Godo Canino
Sr. Project Manager
PM
Quality Control Team
Senior Associate
Hiran de Mel
Mitch Griffin
Jennifer Baldwin
PIO Team
Brizaga
Stormwater Modeling
CES
Water and Sewer Modeling
Hazen
Design Manager
Sr. Project Engineer
Tom Waldeck
Pump Station Lead
Sr. Project Engineer
Tom Waldeck
Field Studies

Attachment D: Proposals from Sub-Consultants

City of Miami Beach

Work Order 5A: North Shore D Neighborhood Improvement Project – Phase 1

Design Services

Scope of Services

Master Design Consultant for Integrated Water Management

RFQ No. 2018-312-KB; Resolution No. 2018-30613

May 30, 2023

Prepared By:

CES CONSULTANTS

880 SW 145th Avenue, Suite 106
Pembroke Pines, Florida 33027

INTRODUCTION

Miami Beach has designated the entire City as an Adaptation Action Area (AAA) in the City's Comprehensive Plan, which specifies resilient principles, goals, and adaptation strategies. AAA's are designated to prioritize actions and funding for flood prone areas. The Plan includes the objective to increase the City's resilience to the impacts of climate change and rising sea levels by developing and implementing adaptation strategies and measures to protect human life, natural systems and resources and adapt public infrastructure, services, and public and private property. The Plan calls for the City to prioritize strategies in areas, which currently experience or are projected to experience tidal flooding, storm surge, or both as a priority for the development and implementation of adaption strategies.

North Shore D Neighborhood, that includes the North Beach Town Center, as defined during the previous Neighborhood Project prioritization task of the Jacobs' Integrated Water Management Contract, is a priority flood mitigation project in the heart of a newly designated Community Redevelopment Area. The Center was created to address infrastructure needs and support economic investment and revitalization within North Beach. Figure 1 shows the project boundaries of the North Beach project, which include 73rd Street to the north, Collins Avenue to the east, 69th Street to the south and Indian Creek/Dickens Avenue to the west. Boundaries also includes the portion along 71st street between Indian Creek Drive and Bonita Drive. Figure 1 also shows the delimitations of the North Shore D Neighborhood area (red boundary).

The intent of this project is to address the risk of flooding and sea level rise by adapting the roads and drainage system in North Beach Town Center, in areas that are currently prone to frequent flooding by sea level rise and rain events that are exacerbated when the events occur at the same time. This project will improve flood resilience, by enhancing the stormwater conveyance and treatment system capacity of the entire basin, consisting of new stormwater drainage pipelines and new treatment systems. In addition, the project will also address improvements to the potable and fire water distribution system and the sanitary sewer system within the affected areas of the neighborhood. JACOBS has requested that CES Consultants, Inc. (CES) provide services in underground utility design and stormwater modeling technical reviews for the base alternative. The following is the scope of work for items that CES will provide for this project.

SCOPE OF WORK

JACOBS has requested that CES Consultants, Inc. (CES) develop a fee based on a base scope of services. The base scope is to provide an improved stormwater level of service to the neighborhood and replace the aging or undersized sanitary sewer and potable water pipes in the project area. The sizing of the sanitary sewer and potable water pipes will be based on modeling performed by Hazen and Sawyer under this project.

CES will provide the following services by Discipline.

1) Project Management and Coordination (Up to 6 progress meetings throughout the life of the project)
2) Public Involvement (Up to 5 stakeholder meetings throughout the life of the project)
3) Stormwater Model (Entire Project Basin)
    a. Develop an existing conditions model, 1 Ultimate conditions model, 1 interim conditions 1 model, and 1 interim conditions 2 model.
4) Pump Station sizing and locating
5) Existing Utilities and Conflict Resolution (Entire Project Route)

   a. Prepare an existing utility map utilizing as built and survey data. Utilize SUA to verify utility locations.
6) Water Quality Wells Systems (Entire Project Basin)
   a. Design sufficient water quality wells required for a DERM Class II permit. We will integrate the existing CMB drainage wells throughout the project basin and the vortex type filters at the pump stations into the water quality calculations.
7) Pump station discharge force main for all pump stations
   a. Design will include the route layout between the pump station, the dissipator box, and any required junction boxes to join the force main to either the pump station or the dissipator. The design does not include the design of the pump station, dissipator, or any junction boxes.

The following is a detailed description of each scope of service to be provided by CES by task.

Detailed Project Scope of Services

Task 1 – Project Management and Coordination

Task 2 – Support Stakeholder/Public Involvement, Information Gathering, and Consensus Building

Task 3 – Pre-Design Phase – Infrastructure Modeling and Needs Assessment

Task 5 – Development of Conceptual Design and BODR

Task 1.0 Project Management and Coordination

1.1 Project Management

CES (up to 2 members) will attend the project coordination and progress meetings with the Team and with CMB. These meetings will provide updates on the project progress, address potential project issues, and assure that the project team is meeting the expected goals. CES will participate in up to 6 monthly progress meetings with JACOBS and CMB (in person or virtual meetings). Meetings are estimated to take up to 2 hours each.

Meetings/Workshops

- Approximately 6 Monthly Progress Meetings (Virtual) with the CMB PM to discuss progress and discuss open action items.
- Approximately 26 Weekly Internal progress meetings (Virtual) with the JACOBS design team to discuss progress and discuss open action items.

Deliverables

- CES task specific Baseline Schedule delivered to JACOBS (MS Project) (electronic)
- Monthly Updates to CES task specific project schedule delivered to JACOBS (electronic)
- Progress Reports and Invoices delivered to JACOBS (electronic)

1.2 Project Kick-Off and Visioning Workshop

CES will participate in the kick-off meeting with the CITY to review project scope, deliverables, and schedule for the project. This meeting will include the discussion of the overall project communication plan, success factors, project risk register, change management plan, and performance indicators. Project success factors and intended outcomes will be defined, will guide the project execution, and will provide metrics to measure and track project

success for the CITY and for project stakeholders. The project goals will be revisited during public and stakeholder engagement to validate and refine success factors.

As part of the kickoff meeting, CES's subject matter experts in sustainability and resilience will provide design recommendations towards greater alignments and efficiencies to the project timeline, development brand, as well as potential opportunities in development investment return in the areas of:

1. Development and integration of resilience strategies

In addition to the kickoff meeting CES will attend a separate visioning half-day workshop. The purpose of the visioning workshop is to confirm CITY's objectives and success factors for the project. This workshop will include CITY's key personnel and other stakeholders and will include obtaining information on the project.

Meetings/Workshops

- In Person/Virtual Kickoff
- Visioning Workshop

Deliverables

- Support preparation of presentation for the City Kickoff Meeting
- Support preparation of presentation and facilitation of the visioning workshops
- Support preparation of draft and final Project Communication Plan (electronic)

1.3 Field Site Visit/Assessment Review

CES will conduct a Field Site Visit/Assessment review with CITY staff and Jacobs, including at least 2 members. CES will submit a site visit report with the summary of the major findings and observations collected during the site visit within 10 working days following completion of the site visit.

Meetings/Workshops

- Field Site Visit with City and Jacobs

Deliverables

- Draft and final site visit report (electronic).

Task 2.0 Support Stakeholder/Public Involvement, Information Gathering, and Consensus Building

2.1 Support development of Public Outreach Plan and Coordination

CES will participate in neighborhood association meetings and presentations. CES staff will provide technical support to JACOBS and CMB for the preparation of presentations and participation in neighborhood association meetings. Additionally, CES will provide technical support in the preparation of informational material that may be needed for postcards, newsletter(s) and/or fact sheet(s). CES will not be responsible for printing and mailing content. CES will not develop informational content for the presentations. CES will assist by providing updates on project progress, and CES will provide items developed during the design that can be used to develop presentation content. CES will participate in up to 5 stakeholder and neighborhood association meetings (in person or virtual meetings).

Deliverables

- Draft and final meeting materials as it pertains to the areas of responsibility for CES.

Task 3.0 Pre-Design Phase – Infrastructure Modeling and Needs Assessment.

3.1 Stormwater Management System (Water Quantity)

The conceptual design effort will include hydrologic and hydraulic stormwater modeling to determine the capacity of the proposed Pump Stations and the proposed stormwater system components. The following subtasks will be executed to complete the modeling and validation of the base project. During this Task CES will utilize the existing information to develop existing and future conditions scenarios, then complete stormwater modeling to be used for the proposed master plan system under different scenarios. Following each of these steps in the conceptual design, the design team will hold "milestone meetings" with the City and Jacobs to confirm the assumptions made in each step. Following each of these steps in the conceptual design, the design team will hold "milestone meetings" with the City to confirm the assumptions made in each step. The H&H modeling estimates runoff from the design storm (10-year, 24-hour 8.75-inch storm), and predicts the maximum hydraulic grade lines (HGL), pipe capacities and velocities, and peak stages throughout the drainage network. The modeling effort will include pre- and post-development scenarios to identify current deficiencies and how the proposed infrastructure improvements will address the needs.

Background

In 2019 AECOM prepared and presented to the City a basin study as part of the Capital Improvement Project for the North Shore and Town Center Neighborhood located in the City of Miami Beach. The level-of-service (LOS) used for this study was for no street flooding of the roads during a 10-year, 24-hour storm event and did not consider the City's Road Raising policy. The primary goal of the proposed drainage system was to significantly reduce or eliminate the deficiencies in the existing system. An Interconnected Pond Routing Version 3.0 (ICPR3) H&H model was used to size and evaluate the proposed drainage system. The model utilized available Light Detection and Ranging (LiDAR) surface topography data, Geographic Information System (GIS) geodatabase files, and record drawings of existing conditions provided by the City of Miami Beach to determine elevations of catch basins and inverts, existing pipe network location, pipe sizes and pump configurations.

Existing Stormwater Model Setup

CES will develop an existing conditions stormwater drainage model to evaluate the existing flooding conditions of the drainage system of the area. CES will use the Interconnected Channel and Pond Routing Model Version 4 (ICPR4) software, released in 2016, to develop the stormwater model using available existing information on the existing drainage network to be collected during the data gathering task. For model development the CES will use existing GIS data, and LIDAR data available and will be complemented with Topographic information, and Finish Floor Elevations collected as part of the Survey Scope for this project within the boundary area of the North Beach D Neighborhood. Please note that The CES will use the AECOM's model as a starting point to narrow down the boundaries of the model.

Existing Stormwater Drainage Analysis and Calibration

The CES will run the stormwater model for the existing condition and analyze the results to determine the water surface elevation and flooding patterns for the design rainfall. CES will identify approximate areas of flooding, structures within these areas, and roadway overtopping. Based on the model output comparisons to historical records of storm events (pictures and videos) provided by the CITY, CES will work to modify the existing model (calibrate) to represent the realistic drainage conditions more accurately.

Proposed Stormwater Drainage Modeling, and Analysis

The CES will develop a stormwater model to evaluate and determine the improvements required for North Shore D Neighborhood. CES will develop three (3) post development models. One Ultimate Conditions model, one Interim condition 1 model, and one Interim conditions 2 model. To complete the evaluation, CES will start with the existing model and use the proposed stormwater improvements identified by AECOM as the reference to develop the Ultimate Conditions model. The model will be analyzed and modified based on design criteria and the LOS put forth by the CITY. Interim Conditions 1 and 2 will be developed using the Ultimate Conditions model as the

basis. The interim conditions models will not necessarily meet the LOS requirements. CES will analyze and identify any additional improvements that are required for each of the post-development scenarios and within the project boundary areas. Table 1 and Figure 2 provides a description of the scenarios to be modeled as well as a graphical description of the preliminary boundary conditions of each scenario. The modeling of the scenarios will be iterative to determine/refine the design criteria for the required improvements such as pipe sizing and alignment, pump station location and capacity, and other potential solutions (storage).

The results of the post-development scenarios, as per Table 1, will be reviewed and compared to the existing conditions model to validate the impact to the LOS and the improvements required to meet the LOS. The development and results of each scenario will be summarized in a technical memorandum which will support the overall project basis of design. These same scenarios also apply to the stormwater pump stations and water quality assessment tasks.

A virtual workshop, "Milestone Meeting" will be held with CITY to be attended by up to two (2) CES staff at each phase (Existing model set up, Existing model analysis, Ultimate Condition Scenario set up, Ultimate Condition Scenario analysis, Interim Condition 1 set up, Interim Condition 2 set up, Interim Condition 1 analysis, Interim Condition 2 analysis) to obtain comments and verify assumptions being made in the model. Following receipt of comments on each phase, CES will proceed to the subsequent phase and incorporate said comments. CES will provide a draft Technical Memorandum (TM) summarizing the model development, model calibration, analysis, scenarios, and stormwater improvements. A virtual workshop will be held with CITY to be attended by up to two CES staff to discuss the TM and obtain comments. Following receipt of comments, CES will provide a final stormwater system TM.

Meetings

- Eight (8) Milestone Meetings (Virtual) to discuss modeling inputs and results.
- one (1) meeting (Virtual) to discuss the draft TM.

Deliverables

- Presentation material from the status meeting for the city to review (electronic).
- Pre vs Post Model Technical Memorandum (electronic)
- Hydrologic and Hydraulic Model and all native calculations, model logs etc.

Table 1 –Stormwater Modeling Scenarios

Scenario	Scenario Description	Development	Planning Horizon	Extent of Stormwater Upgrades
Existing Condition	Baseline/Existing Conditions	Current conditions	2023	NSD+
Ultimate Condition Scenario (Figure 2 Blue limit)	Ultimate build out condition, including: • All seawalls and barriers will be modeled as having been installed or upgraded per the "Resiliency Standards for Tidal Flood Protection." • Future storm drainage pipelines throughout the North Shore D basin will be modeled as having been installed or upgraded utilizing the 2019 AECOM stormwater basin study as a reference to select boundary conditions for smaller NSD Neighborhood model (interim conditions). • Boundary between the North Shore D Neighborhood basin and adjacent neighborhoods to the north and south will be modeled under the assumption that all northern and southern neighborhood improvement projects have been completed • Roads within the boundary will be modeled as having been raised per the CMB Road Raising Policy as applied and adopted in this project.	Highest land cover anticipated per zoning including known development projects at the NBTC	2055	NSD+

	• Modeling will assume the following contribution to the basin and smaller NSD Neighborhood basins: 33% for all waterfront properties with internal drainage systems; and 50% for all waterfront properties without internal drainage systems • Level of Service (LOS) – 10 Yr. 24 hour design storm and no residual flooding on the basin • Pipe sizing will be reassessed from the AECOM 2019 model based on the LOS and design criteria for this project			
Interim Condition 1 (Figure 2 Red Limit)	This scenario will utilize the Ultimate Condition Scenario as the reference for the model. The interim condition 1 is focused on the definition of the identification of improvements required to support the NSD neighborhood area including the identified NBTC planned developments meeting the desired LOS.	Known development projects across neighborhood	2055	NSD
Interim Condition 2 (Figure 2 Violet Line)	This scenario will build upon the results of the Interim Conditions 1 Scenario. This Scenario is focused on the definition of the identification of improvements required to support the proposed NBTC planned development	Known NBTC planned development projects	2055	NBTC

Notes:

- NBTC = North Beach Town Center
- NSD = North Shore D Neighborhood
- NSD+ = North Shore D Neighborhood expanded area to capture nearby connected/dependent infrastructure
- Interim condition 1 and 2 refers to the initial construction phases of the NSD project.

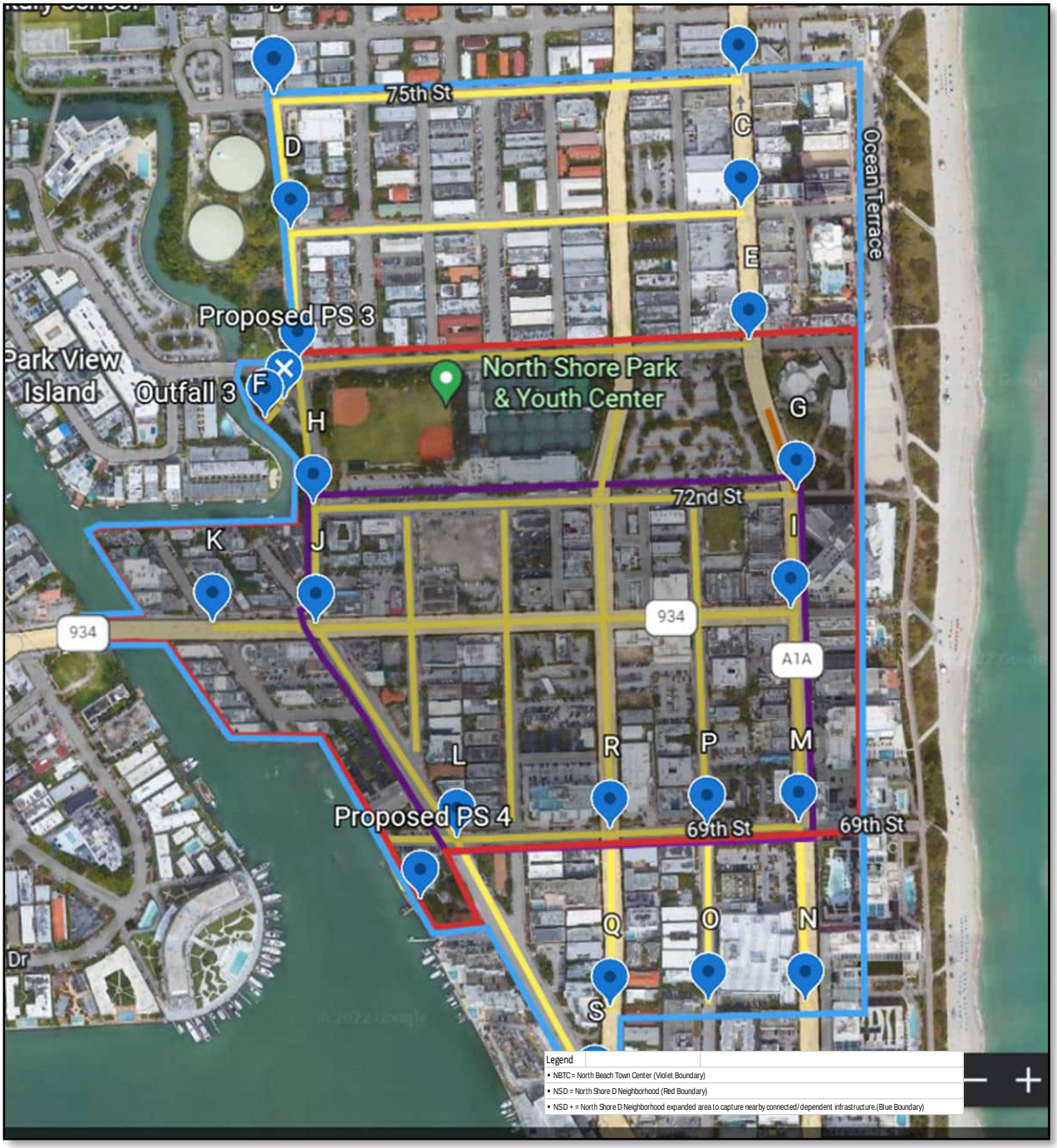


Figure 2. Post-Development Modeling Scenarios

3.2 Stormwater Pump Stations

CES will develop preliminary sizing, conceptual layouts, locations, configuration, and sizing of the Stormwater pump stations required to serve the project area. CES will evaluate options and develop a recommended alternative for each pump station. It is assumed that the area will be served by two (2) pump stations (Proposed PS 3 and Proposed PS 4) as defined in the AECOM Stormwater Master Plan, see Figure 2. CES will model and

compare alternate pump station locations as necessary. Please note that the final number and location of the proposed pump stations will be validated during the modeling task. The conceptual plan for each pump station will include:

- Potential to use only one pump station for the basin. Due to the water quality issues in the canal surrounding the Park View Island the City requested to explore not discharging at this corresponding location and use only one pump station for the whole basin.
- Potential for the use of underground storage to validate/optimize the number of pump stations.
- Preliminary sizing of the pump station wet well(s)
- Preliminary sizing of the above ground components
- Location siting/layout plan of the pump station and above ground components
- Access for necessary operations and maintenance

Meetings

- Five (5) status meetings (Virtual) with City Staff to discuss pump station capacity, location(s), and conceptual layouts

Deliverables

- Proposed conceptual layout for each individual stormwater pump station that includes site plan and location layout (electronic).

3.3 Stormwater Management System (Water Quality)

CES will perform a water quality analysis of the site. This will include performing engineering calculations to define the size of water quality structures and pumping requirements as well as performing a nutrient and pollutant-loading analysis for the PROJECT area basin. CES will utilize BMP trains for the nutrient and pollutant-loading analysis. CES will perform a nutrient and pollutant-loading analysis for the PROJECT area basin to identify possible hot spot land uses and contributors to known pollutants of concern identified for the Biscayne Bay Outstanding Florida Water. Known pollutants include trash, sediment, bacteria, nitrogen, phosphorus, heavy metals, and hydrocarbons, to name a few.

Based on the analysis CES will recommend required infrastructure to meet Current State Water Quality (WQ) requirements. The locations of WQ infrastructure will be included in the proposed system. As part of this effort CES will coordinate and attend a pre-application meeting with DERM for presentation of results and define WQ approach for the permitting phase of the project.

Deliverables

- Draft and Final Technical Memorandum describing the analysis and BMP Trains model report, which will be incorporated into the Basis of Design Report (electronic)

Task 5.0 Development of Conceptual Design and BODR

5.1 Utility Coordination and conflict resolution

CES will perform utility coordination and prepare an existing utility map. The utility coordination entails submitting design tickets, creating a utility tracking sheet, and contacting all utility owners with utilities in the project area. This process will help identify major conflicts with franchise utilities that will define the alignment of proposed utilities. CES is not responsible for any subsurface utility exploration or soft digs.

5.2 Preliminary evaluation of water quality wells

CES will perform the calculation and coordination necessary to determine the size and number of water quality structures necessary. An analysis of the existing wells will be performed to determine how they can be incorporated into the proposed design. CES will participate in an informal meeting with DERM to discuss conceptual design. CES will develop alternative options to satisfy the water quality needs. The location and number of the proposed wells will be determined based on site limitations and existing infrastructure. The drainage model will incorporate any existing wells determined to be functioning and impactful as well as incorporate any proposed wells. CES will identify possible conflicts and necessary resolutions to be noted in the BODR.

5.3 Basis of Design Report (BODR)

CES will aid in the preparation of a BODR that outlines the design constraints, considerations, and recommendations determined in the conceptual phase as it relates to each component to be designed by CES. The basis of design will include code and standards that will be followed, a permitting matrix with identification of regulatory agencies, CAD standards, table of contents of the technical specifications, and existing utility drawings. The stormwater model technical memorandum will be included as an appendix to the BODR.

Deliverables

- 5.1 Utility coordination and conflict resolution (Development of Existing utility map)
- 5.2 Preliminary evaluation of water quality wells
- 5.3 Basis of Design Report for the components under the direct responsibility of CES (Electronic)

Assumptions

The following are a list of assumptions utilized to prepare our fee and scope of work. The CES responsibility is limited to designing the following items.

- Project Management and Coordination is limited to 6 progress meetings throughout the life of the project.
- Public Involvement is limited to 5 neighborhood association meetings throughout the life of the project)
- Stormwater Model (Entire Project Basin)
  - CES will prepare an existing conditions model, 1 Ultimate conditions model, 1 interim conditions 1 model, and 1 interim conditions 2 model.
  - CES will calibrate the existing conditions model to assure accuracy.
- Stormwater Pump station
  - CES will determine the capacity of the pump station only. Pump station design is not included in this scope.
- Existing Utilities and Conflict Resolution (Entire Project Route)
  - CES will identify conflicts with proposed underground utilities. CES will work with the appropriate design group to identify solutions to the conflicts. The appropriate design team will provide final solution to their particular conflict.
- Construction Phase Services
  - Construction phase services are not considered for this proposal. This includes field visits during construction, review of shop drawings, certification of any component of the system, and permit close-out assistance.
- Permit Fees are not included in this fee proposal

FOR INTERNAL USE - BASIS FOR PRICE TOOL

Work Order 5 - North Beach Neighborhood Improvements Project - Fee Breakdown	**Principal -** Rudy Ortiz	**Senior Associate -** Jose Caraballo	**Associate -** David Hoot	**Project Manager -** Sergio Williams	**Project Engineer Senior -** Ernesto Fernandez	**Senior Engineer -** Kevin Albrecht Vanesa Mahoney	**Project Engineer -** Jocelyn Roman	**Engineer -** Carla Hernandez	**CADD Operator -** Mabel Villazon	**Draftsman -** Celia Suarez	**Administrator -** Gladys Canelo Francisco Reboredo	**Total Hours**	**Contingency**	**TOTAL COST**
	$292.54	**$252.49**	**$199.45**	**$205.81**	**$196.80**	**$185.66**	**$175.58**	**$142.96**	**$122.00**	**$76.38**	**$90.18**			
Task 1 - Project Management and Coordination														
Project Management	16	40	24	120	8	8	0	0	0	0	60	276		$52,735
Project Kick-off and Visioning Workshop	4	16	8	24	8	4	0	0	0	0	0	64		$14,062
Field Site Visit/Assessment Review	0	12	0	24	24	0	0	0	0	0	0	60		$12,693
Task 2 - Support Stakeholder/Public Involvement, Information Gathering, and Consensus Building														
Support development of Public Outreach Plan and Coordination	4	12	8	40	40	8	60	80	0	0	0	252		$45,357
Task 3 - Pre-Design Phase - Infrastructure Modeling and Needs Assessment														
Stormwater Management System (Water Quantity)	24	32	24	40	100	600	380	140	0	0	0	1340		$245,931
Stormwater Pump Stations	16	16	40	32	80	140	140	100	0	0	0	564		$103,898
Stormwater Management System (Water Quality)	16	40	56	80	64	200	240	180	0	0	0	876		$160,013
Task 5 - Development of Conceptual Design and BODR														
Basis of Design Report	16	16	24	80	24	80	66	80	0	0	0	386		$72,573
Utility coordination and Conflict identification	4	8	16	32	32	64	64	120	220	128	0	688		$96,156
Preliminary evaluation of Water quality wells	12	24	44	80	48	80	60	100	180	140	0	768		$116,594
Subtotal	***112***	***216***	***244***	***552***	***428***	***1184***	***1010***	***800***	***400***	***268***	***60***	***5274***		***$920,012***
subtotal hours (Task 1;2;3; and 5)	***112***	***216***	***244***	***552***	***428***	***1184***	***1010***	***800***	***400***	***268***	***60***	***5274***		
subtotal cost (Task 1;2;3; and 5)	$32,764	$54,538	$48,666	$113,607	$84,230	$219,821	$177,336	$114,368	$48,800	$20,470	$5,411	$920,012		***$920,012***

Hazen

SCOPE OF SERVICES

CITY OF MIAMI BEACH PUBLIC WORKS DEPARTMENT

North Shore D Neighborhood Improvement Project

Water and Sewer Modeling Services

PROJECT BACKGROUND

The intent of this project is to address the risk of flooding and sea level rise by adapting the roads and drainage system in the City of Miami Beach (City) North Shore D Neighborhood, in areas that are currently prone to frequent flooding by sea level rise and rain events that are exacerbated when these events occur at the same time. Refer to **Figure 1** (next page) for an illustration of the project limits.

This project will improve flood resilience by enhancing the stormwater conveyance and treatment system capacity of the entire basin, consisting of new stormwater drainage pipelines and new treatment systems. In addition, the project will also address improvements to the potable and fire water distribution system and the sanitary sewer management systems within the affected areas of the neighborhood.

The planning and design of the project will be divided in two phases. Phase 1 will focus on completing the project planning and conceptual design for the improvements related to the project. Phase 2 will include the full design of the improvements identified during Phase 1 of the project.

The scope of this service order focuses on water and sewer system hydraulic modeling analyses as part of the planning efforts under Phase 1.

Water System Hydraulic Modeling

The City is a wholesale water customer of Miami-Dade Water and Sewer Department (WASD), but owns, operates, and maintains the water distribution system within the City's service area. In 2019, Hazen and Sawyer (Hazen) completed an evaluation of the existing water system and developed a Water System Master Plan (Water Master Plan) to identify capital improvement projects to ensure reliable operation of the water system for a planning horizon of 25 years.

The intent of this effort is to use the City's most recent version of the water hydraulic model to evaluate the water system under the existing and various proposed future scenarios to define the improvements required to support the North Shore D project area.

Sewer System Hydraulic Modeling

The City owns, operates, and maintains the sewer collection and transmission system within the City's service area. Sewage is collected throughout the City and pumped through a single 60-inch connection to WASD's Central District Wastewater Treatment Plant (CDWWTP) for treatment and disposal. In 2019, Hazen completed an evaluation of the existing sewer system and developed a Sewer Master Plan (Sewer Master Plan) to identify capital improvement projects to ensure reliable operation of the system for a planning horizon of 25 years.

The sewer system hydraulic model included only gravity mains larger than 24-inches. However, various gravity pipeline segments have been added to the model since 2019 as a result of multiple developed connection request hydraulic analyses that have been performed by Hazen. The intent of this effort is to use the most recent version of the sewer hydraulic model and incorporate all of the local gravity sewers for the North Shore D project area basin, evaluate the sewer system within the North Shore D project area under the existing and various proposed system configurations, and define any improvements required to support the North Shore D project area for the various proposed system configurations.

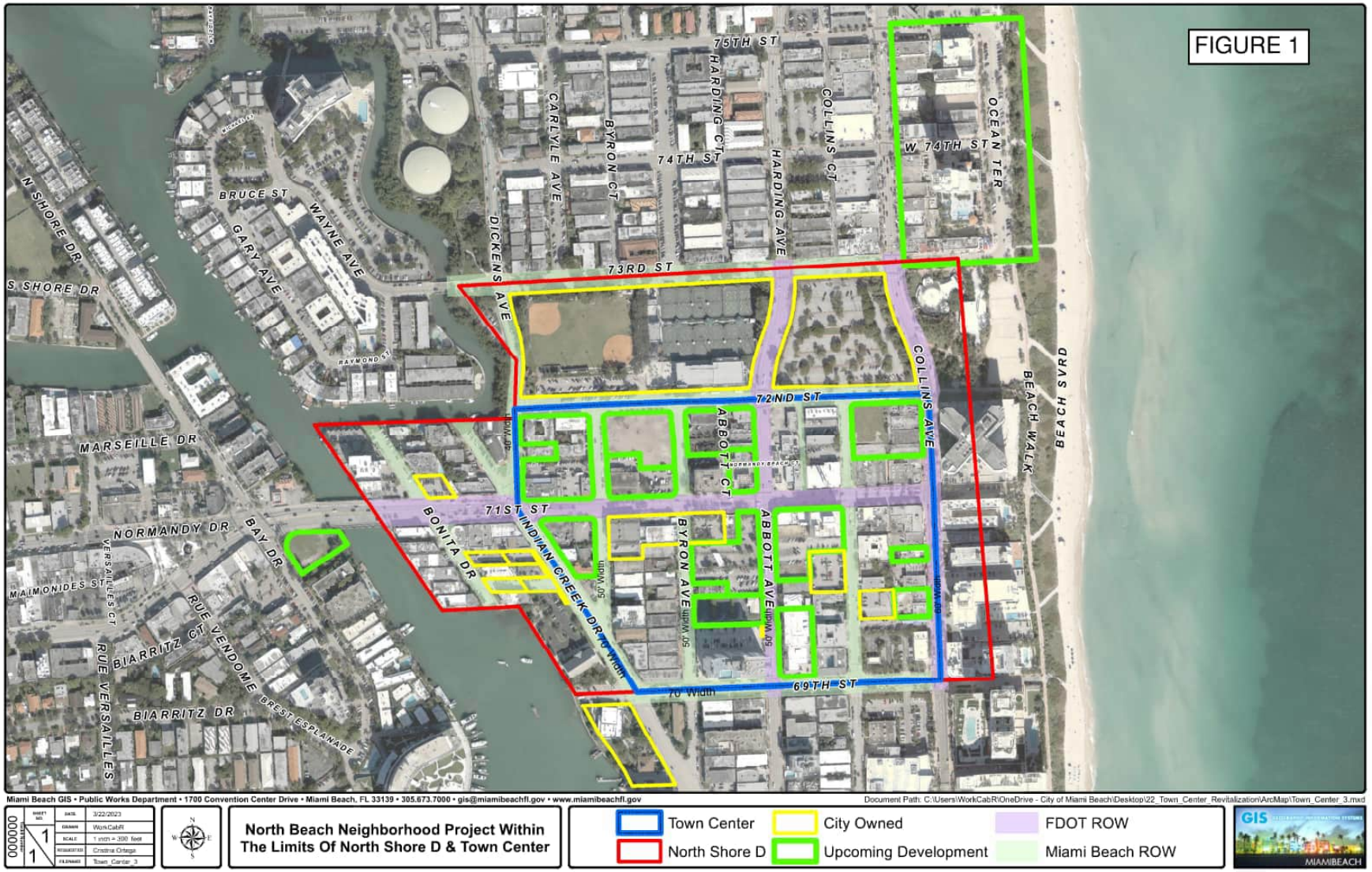


Figure 1: North Shore D Neighborhood Improvement Project Limits

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SCOPE OF SERVICES

Task 1 – Project Management

Hazen's project manager will be responsible for managing and administering the project, including:

- Preparing and administering Hazen's internal resources
- Monitoring project activities, budgets, and schedule
- Communicating with Jacob's project manager
- Scheduling and attending progress and review meetings, internal and external
- Ensuring that the Project Team follows Hazen's quality assurance and control (QA/QC) policies and procedures throughout the project

Task 1 Deliverables:

1. Submit a monthly project status memorandum with invoice per City requirements.

Task 2 – Baseline Model Analysis

Task 2.1 – Baseline Water Model Setup

The existing model scenarios will be used to identify near-term improvements . In order to adopt a more conservative approach, the demands from recent developer requests to the City will be included in addition to the original 2025 projected demands established as part of the master plan. The demands for 2045 will only include projected 2045 water demands established in the Master Plan. It is assumed that new developments proposed since the master plan are reflected in the systemwide projections.

- The model controls will be updated to reflect the changes in the operation of the system by the City with regards to operation of storage tanks and associated operation of the booster pump stations.
- The model will be updated to reflect any changes in large diameter pipes throughout the City (i.e. greater than or equal to 24 inches in diameter) since the development of the master plan model based on City's GIS. The model will also be updated for to reflect any network changes in the North Shore D area (regardless of pipe diameters) based on City's latest GIS.
- Within the North Shore D boundary, City will review GIS and as-builts and provide Hazen with any major interconnects that are missing in the current hydraulic model.
- The City will also provide recent fire flow data to Hazen for reference. With concurrence from the City, Hazen will make updates to areas of the City hydraulically impacted when appropriate. Note, data will be for reference only as many variables impact fire flow tests when compared to modeling results.
- Hazen will use the most current version of the InfoWater model, and request from the City the most current GIS files.

Task 2.2 – Potable and Fire Flow Modeling

Hazen will perform hydraulic modeling of the existing potable/fire flow protection water system to evaluate the capacity of the existing system components. The model runs will be used to identify any potential deficiencies identified within the specific North Shore D project boundaries for the scenarios defined in **Table 1**.

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Table 1

Scenario	Title	Description	Year
1.1	Existing Conditions	**Facility:** Existing facility network. **Demand**: Master Plan 2025 Demands + Estimated demands from recent developer requests (w/o North Shore D additional demands)	2025
1.2	Existing Conditions + Planned Capacity Improvements Identified During the Master Plan[1]	**Facility:** Existing facility network + Planned Master Plan Improvements **Demand**: Master Plan 2025 Demands + Estimated demands from recent developer requests (w/o North Shore D additional demands)	2025
1.3	Future Conditions + Proposed Capacity Improvements Identified During the Master Plan[2]	**Facility:** Existing facility network + Proposed Master Plan Improvements **Demand**: Master Plan 2045 Projected Demands (w/o North Shore D additional demands)	2045

1. Planned Master plan improvements to be modeled will be limited to the improvements in City's current 5 year Capital Plan . City to provide this list.
2. Proposed Master Plan Improvements to be included in the model will incorporate all the capacity related improvements identified in the Master Plan.

Hazen will run the hydraulic model and analyze the results to determine the water pressure and system capacity. Hazen will identify approximate areas of low pressures, issues meeting fire flow requirements, and infrastructure capacity issues, if any. In addition, Hazen will identify improvements as necessary to maintain local levels of service (LOS) for the project area.

Task 2.3 – Sewer Model Setup

The existing model scenarios will be used to identify near-term improvements. In order to adopt a more conservative approach, the flows from recent developer requests to the City will be included in addition to the original 2025 projected flows established as part of the master plan. The flows for 2045 will only include projected 2045 sewer flows established in the Master Plan. It is assumed that new developments proposed since the master plan are reflected in the systemwide projections.

- The model will be updated to reflect any changes in large diameter pipes throughout the City (i.e. greater than or equal to 24 inches in diameter) since the development of the master plan model based on City's GIS. The model will also be updated for to reflect any network changes in the North Shore D area (regardless of pipe diameters) based on City's latest GIS.

- Within the North Shore D boundary, City will review GIS and as-builts and provide Hazen with any major interconnects that are missing in the current hydraulic model.

- Hazen will use the most current version of the InfoWorks model, and request from the City the most current GIS files.

Task 2.4 – Sewer Modeling

Hazen will perform hydraulic modeling of the existing local sanitary sewer system in the North Shore D project area, including the entire PS 19 service area, to evaluate the capacity of the existing system components. The model runs will be used to identify any potential deficiencies identified within the specific North Shore D project boundaries for the scenarios defined in **Table 2**.

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Table 2

Scenario	Title	Description	Year
1.4	Existing Conditions	**Facility:** Existing facility network. **Flows**: Master Plan 2025 dry and wet weather flow + Estimated flows from recent developer requests (w/o North Shore D additional demands)	2025
1.5	Existing Conditions + Planned Capacity Improvements Identified During the Master Plan[1]	**Facility:** Existing facility network + Planned Master Plan Improvements **Flows**: Master Plan 2025 dry and wet weather flow + Estimated flows from recent developer requests (w/o North Shore D additional demands)	2025
1.6	Future Conditions + Proposed Capacity Improvements Identified During the Master Plan[2]	**Facility:** Existing facility network + Proposed Master Plan Improvements **Flows**: Master Plan 2045 Projected dry and wet weather flow (w/o North Shore D additional demands)	2045

1. Planned Master plan improvements to be modeled will be limited to the improvements in City's current 5 year Capital Plan . City to provide this list.
2. Proposed Master Plan Improvements to be included in the model will incorporate all the capacity related improvements identified in the Master Plan.

Refer to Figure 2 for the developer requests that are currently in the model for the North Shore D area and the gravity sewer piping that has been added to the model over the course of the various developer requests.

Hazen will run the existing conditions hydraulic model including the new gravity sewers added and analyze the results to determine the Basin 19 existing capacity, among other parameters necessary to evaluate the existing conditions of the sanitary sewer system within the project area. Hazen will identify areas with infrastructure capacity issues, if any. In addition, Hazen will identify improvements as necessary to maintain local levels of service (LOS) for the project area.

Task 2: Deliverables

1. Summary of baseline modeling results for the sewer system including:
    a. Sewer flow estimation summary for DWF, WWF; gravity sewer table with sewer diameters, inverts and MH rim/bottom elevations, sewer structural profile charts, pumps, control levels, PS 19 wet well levels.
    b. Sewer modeling results in sewer HGL charts, PS 19 performance in wet well levels, discharge pressures, impacts to the upstream and downstream stations.
2. Summary of baseline modeling results for the water distribution system including pdf maps/figures indicating system pressures, velocities, fire flow, etc.

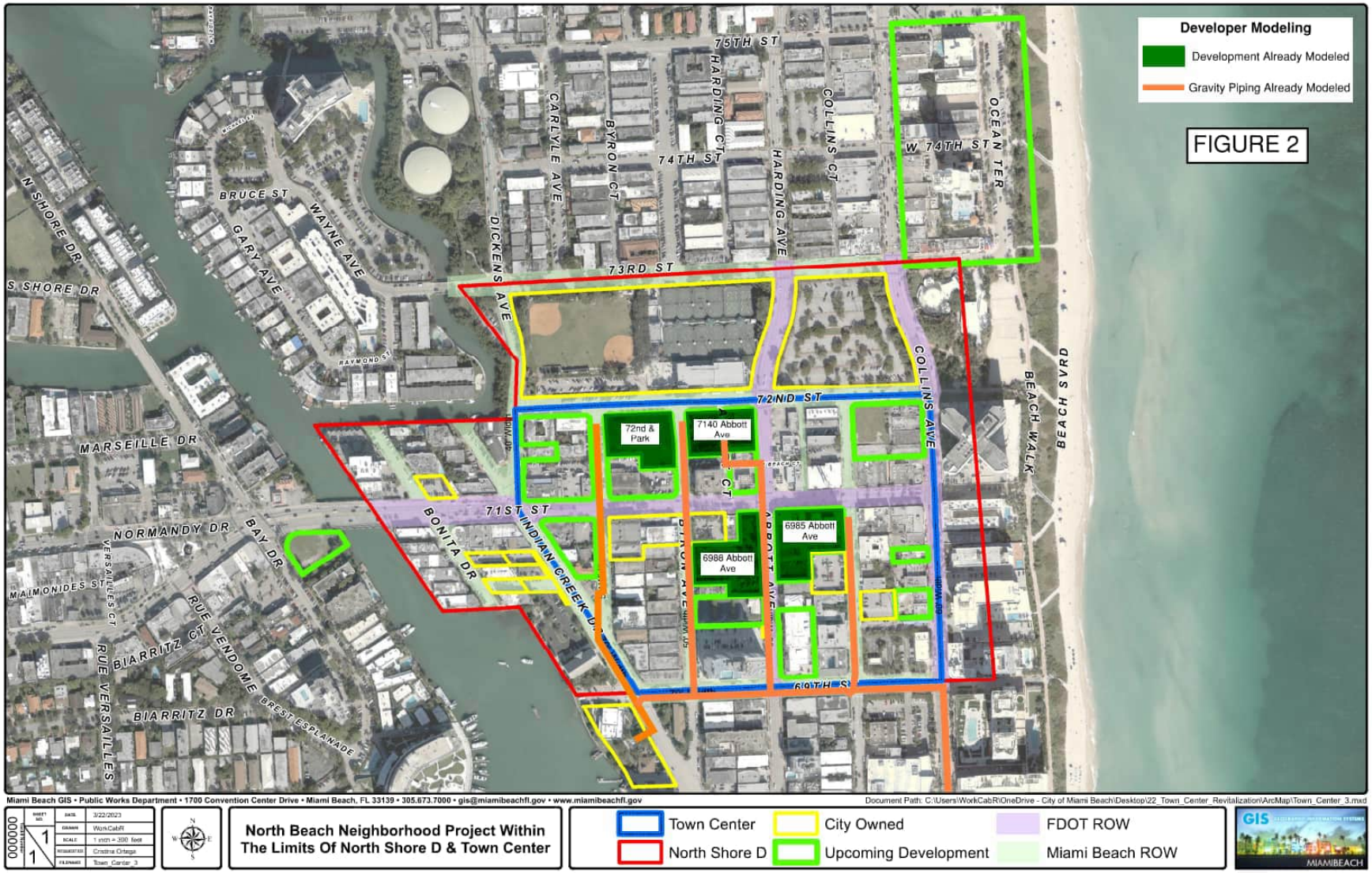


Figure 2: Developer requests that are currently in the model for the North Shore D area and the gravity sewer piping that has been added to the model over the course of the various developer requests.

Hazen

Task 3 – Proposed System Modeling and Analysis

The model scenarios developed in Task 2 will be updated to include built out demands for the proposed North Shore D developments based on latest planning and zoning documents for North Shore D area. These demand additions will be applied to both for 2025 and 2045 scenarios.

Task 3.1 – Potable and Fire Flow Modeling

Following the review and assessment of the baseline conditions, Hazen will modify the existing conditions model to assess the interim and build-out scenarios included in **Table 3**. Each configuration scenario will be modeled and evaluated against local level of service criteria, and its results compared with the existing conditions model to evaluate the improvements within the system. Each scenario will include LOS analysis for maximum demands, average demands, available fireflow, maximum and minimum pressures, high velocity / headloss, and pipe criticality for the project area.

Table 3

Scenario	Title	Description	North Shore D Demands	Year
2.1	Existing Conditions	**Facility:** Existing facility network. **Demand**: Master Plan 2025 Demands + Estimated demands from recent developer requests	**Ultimate Build -Out :** Estimated demands from recent developer requests + max population at NBTC (3.5 FAR)	2025
			Interim 1: Build out of NBTC planned developments	
			Interim 2: Only prioritized NBTC planned development (to be determined by Jacobs/City)	
2.2	Existing Conditions + Planned Capacity Improvements Identified During the Master Plan[1]	**Facility:** Existing facility network + Planned Master Plan Improvements **Demand**: Master Plan 2025 Demands + Estimated demands from recent developer requests	**Ultimate Build -Out :** Estimated demands from recent developer requests + max population at NBTC (3.5 FAR)	2025
			Interim 1: Build out of NBTC planned developments	
			Interim 2: Only prioritized NBTC planned development (to be determined by Jacobs/City)	
2.3	Future Conditions + Proposed Capacity Improvements Identified During the Master Plan	**Facility:** Existing facility network + Proposed Master Plan Improvements **Demand**: Master Plan 2045 Projected Demands	**Ultimate Build -Out :** Estimated demands from recent developer requests + max population at NBTC (3.5 FAR)	2045
			Interim 1: Build out of NBTC planned developments	
			Interim 2: Only prioritized NBTC planned development (to be determined by Jacobs/City)	

1. *Planned Master plan improvements to be modeled will be limited to the improvements in City's current 5 year Capital Plan . City to provide this list.*
2. *Proposed Master Plan Improvements to be included in the model will incorporate all the capacity related improvements identified in the Master Plan.*

Improvements and recommendations from the existing potable water system modeling and analysis will be assumed "active" for future planning horizons as well as previously proposed Citywide master planning

projects based on their recommended implementation schedules.

Task 3.2 – Sewer Modeling

Following the review and assessment of existing conditions, Hazen will modify the existing conditions model with updated flows to assess the interim and build-out configurations included in **Table 4**. Each scenario will be modeled and evaluated and its results compared with the existing conditions model to evaluate the proposed improvements within the system. Each analysis will include analysis of Pump Station 19 to ensure improvements to the system can be conveyed downstream.

Table 4

Scenario	Title	Description	North Shore D Flow	Year
2.4	Existing Conditions	**Facility:** Existing facility network. **Flow**: Master Plan 2025 dry and wet weather flow + Estimated demands from recent developer requests	**Ultimate Build -Out :** Estimated flows from recent developer requests + max population at NBTC (3.5 FAR)	2025
			Interim 1: Build out of NBTC planned developments	
			Interim 2: Only prioritized NBTC planned development (to be determined by Jacobs/City)	
2.5	Existing Conditions + Planned Capacity Improvements Identified During the Master Plan[1]	**Facility:** Existing facility network + Planned Master Plan Improvements **Flow**: Master Plan 2025 dry and wet weather flow + Estimated flows from recent developer requests	**Ultimate Build -Out :** Estimated flows from recent developer requests + max population at NBTC (3.5 FAR)	2025
			Interim 1: Build out of NBTC planned developments	
			Interim 2: Only prioritized NBTC planned development (to be determined by Jacobs/City)	
2.6	Future Conditions + Proposed Capacity Improvements Identified During the Master Plan[2]	**Facility:** Existing facility network + Proposed Master Plan Improvements **Flow**: Master Plan 2045 dry and wet weather flow	**Ultimate Build -Out :** Estimated flows from recent developer requests + max population at NBTC (3.5 FAR)	2045
			Interim 1: Build out of NBTC planned developments	
			Interim 2: Only prioritized NBTC planned development (to be determined by Jacobs/City)	

1. *Planned Master plan improvements to be modeled will be limited to the improvements in City's current 5 year Capital Plan . City to provide this list.*
2. *Proposed Master Plan Improvements to be included in the model will incorporate all the capacity related improvements identified in the Master Plan.*

Each configuration will be modeled and evaluated against local level of service criteria, and its results compared with the existing conditions model to evaluate the improvements within the system. Each scenario will include LOS analysis for depth to diameter ratios, surcharged pipes, backwater, SSO's, and freeboard, maximum and minimum pressures, headloss gradient, and pipe criticality for the project area.

Task 3: Deliverables

1. Summary of sewer system improvements with descriptions and before and after improvements results.
2. Summary of water main improvements with descriptions and before and after improvements results.
3. Copy of InfoWorks and InfoWater models including all scenarios developed and modeled by Hazen as part of this service order.

Task 4 – Identification of Capital Improvement Needs

Hazen will complete Tasks 2 and 3 to identify water and sewer improvements that are required for each scenario and within the North Shore D boundary areas. Hazen will provide a draft TM summarizing the model development, analysis, scenarios, and water distribution and sewer system improvements. A virtual workshop will be held to discuss the TM and obtain comments. Following receipt of comments, Hazen will provide a final water distribution and sewer system TM.

Task 4: Deliverables

1. One (1) electronic copy of the Draft TM.
2. One (1) electronic copy signed and sealed of the Final TM.
3. Workshop minutes and presentation materials.

ASSUMPTIONS

This scope of services is based on the following assumptions:

1. Responses to various inquires shall be made based on the best available information provided to HAZEN at the time of the review.
2. The latest water model used in the Water Master Plan (October 2019) will be used to assess the impacts of the proposed scenarios.
3. The latest sewer model used in the Sewer Master Plan (October 2019) will be used to assess the impacts of the proposed scenarios.
4. Hazen assumes that the models are considered calibrated and acceptable. Calibration would be considered an additional service not covered under this scope of work.
5. Pertinent GIS data necessary to input the gravity sewer system in Basin 19 into the model is readily available and Hazen is not responsible for collecting any survey data.
6. Only updated flows for the project area are included. No additional review for Citywide Master Plan projects will be recommended based on any change in wastewater flows. Hazen will notify the client of any insufficient Master plan project impacting the project area.
7. The CITY will provide operational data (such as but not limited to storage tank levels, pump on-off times, pump speeds, etc.) in excel / csv format.
8. The CITY will provide information about any major changes in pipe network due to construction, operational changes or corrections in GIS since the master plan development in 2019.
9. The CITY will provide available information and record drawings, as well as any other pertinent data requested by HAZEN.
10. The CITY acknowledges that HAZEN's scope is based on information made available at the time of this Task Order and data gathered during meetings.
11. The CITY will provide all requested information within a reasonable timeframe. It is assumed that all information provided by the CITY is complete and accurate.

12. HAZEN will follow the provisions of the City of Miami Beach Public Works Manual as relevant and appropriate.
13. Cost estimates for any identified improvements are not included in this scope of work.

PERFORMANCE SCHEDULE

The Notice to Proceed (NTP) defines the official commencement of HAZEN's contract. The work associated with this task order will be completed upon approval of modeling results and recommendations by the City or within 6 months of receipt of NTP whichever is sooner.

METHOD OF COMPENSATION

HAZEN shall perform the services defined in this scope of services for a lump sum fee of $326,978.88 with reimbursable expenses of $1,000 for a total of $327,978.88, refer to attached fee breakdown. Reimbursable expenses up to $1,000 have been included for office and travel expenses and shall only be utilized for actual travel related expenditures made by HAZEN's project team subject matter experts from outside the tri-County area in the interest of the project and as pre-approved by the City Project Manager. Travel reimbursement will be in accordance with the City's travel policy OD.20.01 "Travel on City Business."

Invoices will be submitted to the CITY monthly and will define the current percent complete for the project. The breakdown of fees per task is detailed in Appendix A – Fee Estimate.

Authorization

Jayson Page, PE
Vice President

Appendix A: Fee Estimate

City of Miami Beach
NORTH SHORE D WATER AND SEWER MODELING
Fee Estimate

Task No.	*Task Description*	Vice President	Vice President	Senior Associate	Senior Associate	Sr. Principal Engineer	Principal Engineer	Administrator	Total Hours	Cost
		Jayson Page	Guillermo Regalado	TJ Wang	Beth Waters	Nandita Ahuja	Hannah Borders	Peggy Jaime		
	LABOR									
1	**Project Management**									
	Project Management	40			80				120	$ 32,081.20
Subtotal Task 1		**40**	**0**	**0**	**80**	**0**	**0**	**0**	**120**	**$ 32,081.20**
2	**Baseline Model Analysis**									
2.1	Baseline Water Model Setup		16			120	40		176	$ 33,057.20
2.2	Potable and Fire Flow Modeling		8			100			108	$ 20,623.40
2.3	Sewer Model Setup									
	Gravity Sewer Additions		4	30			100		134	$ 24,782.90
	Force Main Updates		4	16			50		70	$ 13,238.04
2.4	Sewer Modeling		16	80			160		256	$ 50,584.00
Subtotal Task 2		**0**	**48**	**126**	**0**	**220**	**350**	**0**	**744**	**$ 142,285.54**
3	**Proposed System Modeling and Analysis**									
3.1	Potable and Fire Flow Modeling		16	40		160	60		276	$ 53,659.60
3.2	Sewer Modeling		16	120			200		336	$ 67,091.60
Subtotal Task 3		**0**	**32**	**160**	**0**	**160**	**260**	**0**	**612**	**$ 120,751.20**
4	**Identification of Capital Improvement Needs**									
	Identification of Capital Improvement Needs		2	24		60	80	16	182	$ 31,860.94
										$ -
Subtotal Task 4		**0**	**2**	**24**	**0**	**60**	**80**	**16**	**182**	**$ 31,860.94**
	REIMBURSABLES									
	Office and Travel Expenses									$ 1,000.00
Reimbursable Sub-total										**$ 1,000.00**
	TOTALS	**40**	**82**	**310**	**80**	**440**	**690**	**16**	**1,658**	**$ 327,978.88**
	Labor Rates Used	$297.05	$297.05	$252.49	$252.49	$182.47	$160.20	$90.18		

Scope of Services

Strategic Communications and Public Outreach for Modeling and Planning of the Stormwater, Potable Water, and Wastewater Systems in the North Shore Neighborhood

TASK 1 – PROJECT MANAGEMENT AND COORDINATION

Task 1.1 – Project Kick-Off

Brizaga will attend the project kick-off meeting with the City which includes discussion of the proposed Project Communication Plan. Brizaga will present a preliminary strategy and tactics based on its specific local knowledge and previous work within the City of Miami Beach. An overview of the proposed outreach schedule will also be presented. Ideas and feedback from the City and Jacobs will be collected and incorporated as appropriate into the draft version of the Project Communication Plan, further detailed under Task 2.1.

Deliverables:

- *None*

TASK 2 – STAKEHOLDER AND PUBLIC INVOLVEMENT, INFORMATION GATHERING, AND CONSENSUS BUILDING

Task 2.1 – Development of Public Communications Plan

The Public Communications Plan will be a comprehensive strategy that outlines how Brizaga and Jacobs will effectively communicate with project stakeholders to provide clarity and transparency and foster trust and buy-in from stakeholders. The Public Communications Plan will focus on an organized approach to tiered stakeholder engagement, inclusive of all phases of the project. This tiered approach considers each stakeholder group separately and how the communications efforts must be crafted to reach and appeal to that specific audience. This strategy focuses on goals and objectives, with each group sharing the same goals but with different objectives.

In coordination with the City, Brizaga will expand upon the list of primary and secondary stakeholders already identified, including, at a minimum:

- Existing residents and businesses
- Homeowner associations
    - Altos Del Mar
    - Normandy SUD
    - Biscayne Point
    - Biscayne Beach
    - Stillwater
- Business organizations

  - NoBe CRA Committee
  - Normandy Fountain Business Association
  - Miami Beach Life Magazine
- Developers for adjacent construction projects
- City department representatives for City planned projects
  - GO #1: 72nd Street Civic Center / Haskell
  - GO #13: North Shore Park and Youth Center
  - Capital Improvements projects
- Florida Department of Transportation (FDOT)

From this expanded stakeholder list, Brizaga will work with the City to establish a Project Steering Committee, comprised generally of leaders within the key stakeholder groups identified as well as other key City personnel. After the Steering Committee has been established, a meeting will be help to discuss the project overview and identify goals and objectives of the various stakeholder groups.

Once objectives are recognized and adopted, Brizaga will work alongside Jacobs and the City to identify the most appropriate tactics to reach the various stakeholder groups. These tactics may include tools, methods, frequencies, channels, messaging strategies, and other elements to ensure consistent and effective outreach. To maintain continuity and consistency in communications, Brizaga will work with the City and Jacobs to establish project definitions, terms, and narratives to be utilized by all members of the project team.

The Public Communications Plan will identify communications touch points and will be supplemented with an outreach schedule to support the design activities and maximize community engagement. The outreach schedule will specify when meetings would be held, and what would be the purpose and intended audience of each meeting. The schedule will also include target dates for promotional and educational outreach content including website and social media updates. This content will be developed to align with the production of deliverables by the technical team. The Project Communications Plan will also include guidelines for how each outreach activity shall be carried out, including timelines, approval procedures, responsible parties, and desired outcomes. This approach will facilitate an active stakeholder base and allow for timely adjustments by the design team or communications team.

Following a review of the draft plan by Jacobs and the City, Brizaga will hold a second Steering Committee meeting to review the communications plan, discuss tactics, and make adjustments as necessary for the successful advancement of the Project.

Upon receipt of recommended revisions and approval by the City and Jacobs, Brizaga will produce a Final Public Communications Plan for implementation through the completion of the Schematic Design.

Deliverables:

- *Expanded list of key stakeholders*
- *Steering Committee Kickoff Meeting*
- *Communications Plan*

Task 2.2 – Community Meetings

To engage the community from the outset of the Project, Brizaga will plan and produce two (2) introductory meetings with residents and business organizations within the affected project area. Meetings will generally be set up in a hybrid format. The option of attending the meetings in person or remotely via an online platform will be given to stakeholders to ensure maximum participation and engagement.

The intent of the community introduction meetings is to provide stakeholders with an overview of the proposed infrastructure project. The meetings serve as an opportunity to inform the community about the purpose, scope, and potential impact of the project, as well as to gather feedback, concerns, and questions from the stakeholders. The specific timing and content of the meetings will be discussed and determined in coordination with the Project Steering Committee as part of Task 2.1.

To maximize meeting attendance, a mailing and social media campaign will be planned and executed. The mailing will include a brief introduction to the project, the date, time, and location of the meeting, and a request for RSVPs. A social media campaign will also be created to spread the word across various platforms, with provisions for collecting community feedback further detailed under Task 2.6.

Brizaga will provide and set up audio-visual equipment including microphones, speakers, projectors, and screens, to ensure effective broadcasting of the meeting. The meeting will be facilitated by the project team, who will present the project and answer any questions from the stakeholders. The production of these meetings will include provision of educational flyers, sign in sheets, presentations, and display boards. The City will be responsible for translation and ADA services if needed.

The meetings aim to create awareness and generate interest in the project, to ensure that stakeholders are informed and engaged throughout the development process. Additionally, the meeting serves as a platform for the project team to establish a dialogue with the community and demonstrate their commitment to transparency, collaboration, and responsiveness to stakeholder needs. This will foster a positive relationship between the project team and the community, build trust and credibility, and ensure that the project is aligned with the community's priorities and values. By involving stakeholders in the development process, the project team can ultimately improve the quality and success of the project and minimize potential conflicts or negative impacts.

Brizaga will collect and distribute meeting notes to Jacobs and the City for consideration throughout the Schematic Design phase of the project.

Deliverables:

- *Meeting Promotion Social Media post*
- *Meeting Promotion Direct Mailer*
- *Comment Cards*
- *Informational Flyer*
- *Four (4) informational posters (specific content TBD)*
- *Two (2) Community meetings (specific timing TBD)*
- *Meeting Minutes*

Task 2.3 – Developer Introduction Meetings

The development teams working on the various private projects within the area are one of the stakeholders critical to the success of this project. This plan includes the development and implementation of a special outreach program with the goal of aligning and communicating with the developers within the area with needs for improvements and subsequently achieve a continued communication and coordination between the developers and the City.

Brizaga will work closely with Jacobs and the City to understand and coordinate different department plans and projects from current developers. The intent is to understand and coordinate project timing of new construction, harmonization, their infrastructure needs from the City, infrastructure included in the proposed development project, and opportunities to leverage and optimize schedule in a manner that is mutually beneficial. Individual profiles documenting the details of each proposed development will be created for reference by the design team.

Specific City departments that will be consulted include, but are not limited to:

- Public Works
- Planning
- Environment and Sustainability
- Transportation and Mobility
- Parking
- Urban Forestry
- Capital Improvements
- Economic Development
- Communications

Separately, Brizaga will engage with the Florida Department of Transportation to discuss project objectives and solicit feedback, specifically as it relates to proposed pump station locations and typical roadway sections.

Brizaga will collect and distribute development profiles and meeting notes to Jacobs and the City for consideration throughout the Schematic Design phase of the project.

Deliverables:

- *Developer Profile Database*

Task 2.4 – Brand Development

The North Beach Neighborhood Improvements Project should have a distinct project brand to create awareness, generate interest, and establish a positive reputation for the project. A project brand is a unique identity that distinguishes the project from others and communicates its purpose, values, and benefits to stakeholders.

A unique brand will make the project more visible and recognizable to the public, increasing awareness and generating interest in the project. It will differentiate the project from other infrastructure projects, creating a unique identity that sets it apart. It will help establish a positive reputation for the project, demonstrating its credibility, reliability, and commitment to stakeholder needs. It will ensure consistency in the project's messaging and communication, ensuring that stakeholders receive clear, accurate, and consistent information about the project.

Brizaga will develop initial brand concepts for the project as a part of the City's primary Rising Above brand, which will be shared with and selected by the City in partnership with the project Steering Committee. Brizaga will develop a final branding kit based on feedback received, and the brand will be utilized on all project materials following the formal adoption of the project brand. Community participation in the development and selection of a project brand will engage stakeholders and create a sense of ownership and community around the project, further encouraging participation and feedback from the community.

Deliverables:

- *Brand Kit*

Task 2.5 – Visioning Workshop

Brizaga will participate in a half-day visioning workshop with Jacobs and the City. The purpose of the visioning workshop is to confirm the City's objectives and success factors for the project. This workshop will include the City's key personnel and key stakeholders. Brizaga will prepare a sign-in sheet, collect meeting notes, and prepare meeting minutes documenting the project objectives and verifying which City standards apply to this project. Critical success factors and other pertinent issues discussed during the workshop will be recorded. Brizaga will distribute the draft meeting minutes to all meeting attendees. Attendees' comments will be incorporated into the meeting summary and a final summary will be issued.

Deliverables:

- *Meeting Minutes*

Task 2.6 – Project Updates and Stakeholder Coordination

For continued transparency and ease of information access, Brizaga will establish a project hotline that will provide callers with a project status. The project status message will indicate the date recorded and will be updated regularly with new information as the project progresses. At a minimum, the project hotline will be updated on a biweekly basis. If no new information is available, the recording date will be updated. Proposed language will be provided to the City for approval prior to any hotline update. Callers will also be provided with an opportunity to leave a message, which will be routed appropriately for response either by Brizaga, Jacobs, or the City.

The fees for this task are based on an estimate of 3 months. The continuation of this Task is expected to part of the next Work Order.

Deliverables:

- *Project Hotline and biweekly updates*
- *Database detailing communications with residents*
- *Monthly social media updates*

Task 2.7 – Pump Station Meetings

It is expected that pump station location alternatives will be initially identified by engineering constraints, but will be driven in large part by community input.

Brizaga will attend up to three (3) virtual status meetings with Jacobs and the City to document the evolution of the pump station conceptual design. This information will be critical to share with the project stakeholders once alternative locations are identified to help stakeholders understand the challenges faced as part of the design and decision-making processes. Brizaga will virtually attend up to two (2) meetings with the Commissioners to record notes, quotes, questions, and other pertinent information that may provide value as part of the discussion with the community.

Brizaga will plan and produce two (2) public meetings with stakeholders for the purpose of presenting pump station location and layout alternatives, as well as to present the locations of the water quality monitoring wells. These meetings will be set up in a hybrid format. The option of attending the meetings in person or remotely via an online platform will be given to stakeholders to ensure maximum participation and engagement.

Brizaga will provide and set up audio-visual equipment including microphones, speakers, projectors, and screens, to ensure effective broadcasting of the meeting. The meeting will be facilitated by the project team, who will present the project and answer any questions from the stakeholders. The production of these meetings will include provision of educational flyers, sign in sheets, presentations, and display boards. The City will be responsible for translation and ADA services if needed.

Brizaga will collect and distribute meeting notes to Jacobs and the City to document the meetings. A final outreach report detailing the communication efforts and results will be prepared for the project.

Deliverables:

- *Meeting Promotion Social Media post*
- *Meeting Promotion Direct Mailer*
- *Comment Cards*
- *Informational Flyer*
- *Four (4) informational posters (specific content TBD)*
- *Two (2) Community meetings (specific timing TBD)*
- *Meeting Minutes*
- *Final Outreach Report*

TASK 5 – DEVELOPMENT OF CONCEPTUAL DESIGN (CDR)

Task 5.1 – Conceptual Design Executive Summary

Brizaga will support Jacobs in the development of the Conceptual Design Report (CDR) for the project by reviewing it for consistency with the Project Communications Plan. The CDR is a communications document that that will be utilized to obtain project approval from the City Commission prior to starting the next phase of the project, and it is critical that the terminology and messaging remain consistent through the completion of construction.

Additionally, Brizaga will prepare a graphically designed executive summary of the CDR that will serve as a public-facing project profile to communicate to stakeholders the details of the project concept. This abridged CDR will generally be limited to:

- Design Criteria
- Pump Stations
    - Locations and Layouts
    - Landscape Architecture and Screening
- Water Quality Monitoring Wells
    - Locations and Layouts
    - Landscape Architecture and Screening
- Construction Sequencing Evaluation
- Engineer Opinion of Probable Cost

Deliverables:

- *Conceptual Design Executive Summary*

Summary of Fees

Description	Type	HOURS & RATES							Fees	Expenses
		Principal	Project Manager	Senior Principal Scientist	Senior Field Coordinator	Engineer	Designer	Technician		
		$292.54	$205.81	$173.99	$151.77	$142.96	$114.58	$73.20		
Task 1 – Project Management and Coordination										
Task 1.1 – Project Kick-Off	Lump Sum	0	2	2	0	0	2	2	$ 1,135.16	$ -
Task 2 – Stakeholder and Public Involvement, Information Gathering, and Consensus Building										
Task 2.1 – Development of Public Communications Plan	Lump Sum	0	30	0	0	0	97	104	$ 24,901.36	$ -
Task 2.2 – Community Introduction Meetings	Lump Sum	0	27	2	0	0	40	86	$ 16,783.25	$ 8,200.00
Task 2.3 – Developer Introduction Meetings	Lump Sum	0	27	0	0	0	32	38	$ 12,005.03	$ -
Task 2.4 – Brand Development	Lump Sum	0	14	0	0	0	48	12	$ 9,259.58	$ -
Task 2.5 – Visioning Workshop	Lump Sum	0	4	4	0	0	5	12	$ 2,970.50	$ -
Task 2.6 – Project Updates and Stakeholder Coordination	Lump Sum	0	6	0	0	0	6	51	$ 5,655.54	$ 600.00
Task 2.7 – Pump Station Meetings	Lump Sum	0	32	2	0	0	49	104	$ 20,161.12	$ 7,200.00
Task 5 – Development of Conceptual Design (CDR)										
Task 5.1 – Conceptual Design Executive Summary	Lump Sum	0	12	16	0	0	48	68	$ 15,731.00	$ -
TOTAL		0	154	26	0	0	327	477	$ 108,602.54	$ 16,000.00
GRAND TOTAL										$ 124,602.54

Friday, May 12, 2023

Mr. Juan F. Aceituno, P.E.
Senior Project Manager
juan.aceituno@jacobs.com
Jacobs
3150 Southwest 38 Avenue, Suite 700
Miami, FL 33146
305.905.3492

RE: Surveying, Mapping, and Subsurface Utility Engineering (SUE) services for North Beach Neighborhood located in Miami Beach, FL.

Dear Mr. Aceituno,

Pursuant to your request regarding a fee estimate for Surveying, Mapping, and Subsurface Utility Engineering (SUE) services for the above-referenced project, LONGITUDE SURVEYORS, LLC (LS) is pleased to submit the following proposal for your consideration.

A. SCOPE OF WORK A – TOPOGRAPHIC/TREE SURVEY

- Longitude will show rights-of-way computing field evidence, plats, deeds, and other documentation relative to the project. All lot lines and ownership lines, inclusive of locations, bearings, and dimensions, within the survey limits will be shown graphically.
- LS will show any easements, covenants, restrictions, etc. that can be found on plats, deeds, and other public records relative to the project. However, without a Title Commitment or Title Search there is no guarantee that all easements, covenants, restrictions, etc. will be shown on the survey.
- Longitude will establish horizontal and vertical control within the limits of the survey.
- The survey will be geo-referenced to the Florida State Plane Coordinate System based on the North American Datum of 1983/2011 (NAD83/11).
- All elevations will be referenced to the North American Vertical Datum of 1988 (NAVD88).
- LS will collect all significant aboveground improvements including but not limited to; pavement, sidewalks, curb and gutters, driveways, parking spaces, medians and median islands, building facades, doorways, guardrails, trash receptacles, benches and chairs, bus stops, hedges and general limits of shrubbery, trees and palms, ramps, stairwells, planters, guy wires, guy anchors, valves, valve boxes, electrical boxes, signs, fences, walls, bike racks, parking meters, fire hydrants, fire connectors, post boxes, newspaper stations, bollards, poles, overhead lines, and any other significant above-ground improvements and utilities within the survey limits.
- Elevations will be collected equivalent to a twenty-five (25) foot grid throughout the survey limits and will include, at a minimum, the crown of road, edge of pavement, top of curb and driveway elevations at right-of-way lines. Additional elevations will be collected sufficient to identify all grade changes and features of interest within the survey limits.
- Longitude will collect Finish Floor Elevations (FFE) for all structures/buildings that have doorways or building entrances along the right-of-way within the survey limits.
- LS will locate all trees and palms having a three (3) inch diameter or greater at breast height (DBH) or being six (12) feet in height or greater to include the following for each: scientific name, common name, diameter at breast height (DBH), height of tree, and canopy. A Tree Table will be provided.
- Longitude will collect existing drainage and sanitary structures and will show rim elevation, structure bottom elevation, pipe size, pipe material, pipe direction, direction of water flow, and inverts.
- A Digital Terrain Model (DTM) will be created and provided.

A. SCOPE OF WORK B (OPTIONAL) – SUBSURFACE UTILITY ENGINEERING (SUE) QUALITY LEVEL "B" DESIGNATING:

- LS will perform Quality Level "B" SUE Designation services according to the American Society of Civil Engineers' (ASCE) standards within the survey limits, as per the attached exhibit provided by the Client, to determine if there are any underground utility conflicts.
- Longitude will use surface detection equipment such as Electromagnetic Locator and Ground Penetrating Radar (GPR).

- Please note factors such as soil composition, moisture, and the type and depth of utility controls the effectiveness of the GPR. Saturated soils severely limit the effectiveness of the GPR signal. In addition, confined or obstructed areas that restrict the scanning pattern can impede the data collected and reduce the accuracy of the desired results. Designated utility lines will be collected and shown on our deliverable. Any designated utility lines provided will be within two (2) feet horizontally of either side of the depicted line.

➢ LS will collect any utility lines found. Longitude will prepare a Civil 3D CAD file with the collected utilities geo-referenced to the Florida State-Plane Coordinate System.

B. SURVEY LIMITS:

North Beach Neighborhood located in Miami Beach, FL, extending twenty-five (25) feet beyond the public right-of-way wherever possible, as per the attached exhibit provided by the Client.

C. DELIVERABLES:

Designated utilities will be delineated on the ground using spray paint and a color-coordinated system. LS will add its findings and provide a digitally signed and sealed PDF and a CAD of the resulting survey. Signed and sealed hardcopies can be provided upon request.

D. TIME & COST:

The total professional fee to complete the **Scope of Work A** described herein shall be a lump sum of **$203,215.00.**

The total professional fee to complete the **Scope of Work B** described herein shall be a cost of time and materials based on a not to exceed amount of **$149,350.00.**

Scope of Work A: Longitude has estimated seventy-five (75) business days from the date of Notice to Proceed (NTP) to complete.
Scope of Work B: LS has estimated forty-five (45) business days from the date of Notice to Proceed (NTP) to complete.
Notice to Proceed (NTP) is considered effective twenty-four (24) hours after this proposal agreement has been executed and returned to the undersigned.

I agree that by signing below "I APPROVE AND ACCEPT" this proposal as a legal binding contract.

By: _____ Date: _____
(Authorized Signature)

_____ Title: _____
(Typed or printed name)

On behalf of the firm, I thank you for the opportunity to present this proposal. We look forward to utilizing our best professional efforts on your behalf on this very important project.

Respectfully Yours,

Eduardo M Suarez

Eduardo M. Suarez, PSM/President

TERMS AND CONDITIONS

1. **Time of Delivery:** "LS" intends to deliver requested surveys within the approximate calendar days specified on the Letter of Proposal from receipt of written Authorization to Proceed from "Client". The delivery date may change if "Client" does not deliver all requisite documents within the specified time, such as title documents (including but not limited to the title commitment and all necessary supportive documents). "LS" requires a minimum of 5 business days to deliver the first draft of survey after receipt of title and supporting documentation. It is understood that delays may be encountered for weather (or acts of God), property line conflicts, excessive items in title commitments, delays in receiving title commitments and review of comments from title examiner/attorneys. If "LS" experiences any delay in complying with this deadline, "LS" will advise "Client" in a timely manner.

    a) **Delivery/Receipt of Title Commitments:** Two (2) hard copies of the current title commitment or one copy by email (including copies of all supportive documents, vesting deeds and ad joiner deeds) upon which to base the surveys will be delivered to "LS" within one (1) week after authorization to proceed. In the event title reports are delayed, then the time of delivery noted in each Letter of proposal shall be extended one day for every day the title report is late. "LS" will require a minimum of 5 business days to deliver the first draft of survey after receipt of title and supporting documents.

    b) **Survey Delivery Procedure:** Up to six (6) first draft prints of survey will be delivered or forwarded via email to "Client" or as directed by "Client" to other parties in the transaction. If requested by "Client" and if possible, the first draft of survey will be delivered or emailed whether or not title commitments are available. If the title commitment is not available, that fact will be noted on the survey draft. Prints of survey of a second draft incorporating all of "LS's" review comments will be delivered to "Client", or as directed by "Client" to other parties in the transaction. Up to six (6) prints of the FINAL survey bearing the Surveyor's original seal and signature will be delivered to "Client", or as directed by "Client" to other parties in the transaction. Any versions or copies of the survey beyond those referenced above will be delivered in electronic format (.PDF or .TIF). "LS" WILL NOT provide AUTOCAD drawing files for surveys.

2. **Client Comments:** "Client" will collect and consolidate survey review comments from all parties with an interest in the survey and will submit one round of comments per survey site to "LS" within thirty (30) days after their receipt of the first draft of survey. The comments will be delivered to "LS" in a Word document, PDF, or Excel Spreadsheet. "LS" will then coordinate all necessary edits, revisions, redrafts, etc. under the original scope of work and redistribute the final survey. If comments are submitted to "LS" after thirty (30) days, additional charges may be charged at the discretion of "LS".

3. **Survey Fees:** "LS's" fees for providing each survey are to be itemized on the Letter of Proposal. The applicable fees are Lump Sum or Not-to-exceed amounts based upon the survey requirements, terms and conditions stated herein. The stated fees do not include sales tax, overnight delivery charges (five maximum per site), reproduction costs, telephone calls, and labor and materials incidental to the performance, preparation, and delivery of the surveys. All telephone, U.S. Mail, and overnight delivery charges to "Client" and others involved in this transaction shall be included in the survey fees for the performance of the survey work per the specification stated herein. Unless otherwise and mutually agreed to prior to acceptance by client of this proposal, LS's fees quoted herein are valid for no more than 30 days from the date noted above. A credit card deposit may be assessed for services less than two thousand dollars ($2,000.00).

4. **Additional Services and Fees:** The following items will be subject to additional fees:

    a) Revisions to surveys due to revised and/or proforma title commitments or to new title commitments issued by another title insurer.

    b) Additional lands beyond the scope outlined in the original proposal.

    c) Inclusion of appurtenant easements into a revised Schedule A of the title commitment.

    d) Changes to the form of Surveyor's Certification subsequent to delivery of the first draft.

e) It is understood that others, including the title company, their agents and/or branch offices, will be involved in this transaction. Any additional services requested by these others will be paid for by "Client" but only if such additional services were first approved by "Client". Such additional services may include, but are not limited to, revisions to Surveyor's certifications; reporting facts for determining compliance to zoning codes; adding and deleting areas from the scope of surveys; communicating with other parties involved in this transaction; or supplying additional copies of surveys.

5. **Payment of Fees:** The fee for each survey will become due and payable upon "Client's" receipt of the partial or complete survey and "LS's" invoice. Payment will be made within thirty (30) days of date of invoice or within five (5) days of closing. Pay-when-Paid clauses are not applicable, unless otherwise agreed to by "LS" prior to approval of this proposal. If payment is not received within said time period, then there will be an additional charge of 1.5% per month. "Client" and "LS" understand the payment for said fee is not subject to any pending real estate transaction and "LS" will be paid regardless if any pending real estate transaction closes or not. The payment for each survey shall not be contingent upon the receipt of any other survey involved in this project. It is further understood that "Client" is to satisfy "LS" invoice and shall pay "LS" directly and not the independent surveyor.

6. At times, it is possible that a work item for a site will be submitted to "Client" and completed to the extent possible based upon the information provided to "LS" by "Client". If the information provided by "Client" is incomplete, the survey may not be completed pursuant to the requirements for the services provided in this agreement due to missing documents or other information. If "Client" has not provided the missing document(s) and/or information to "LS" within 30 days after receiving the work item(s), the work item will be considered final and complete, and "LS" shall be paid in full at this time (unless otherwise agreed to in writing between the parties).

7. **Limits of Survey:** The limits of the property(ies) to be surveyed are as outlined in the information provided by "Client" with their request for proposal and as outlined in "LS's" proposal. In the event the lands included in the Schedule "A" upon receipt of the current title commitment are in conflict with the limits of said outlined property(ies) "LS" will revise their fee accordingly and seek approval from "Client" for the revised fee. If the Schedule "A" of the title commitment contains off-site appurtenant easements, then the Surveyor shall show the limits of said easements on the survey for information use only, and the limits and improvements contained therein shall not be subject to the survey requirements contained herein.

8. **Liability/Insurance:** It is understood that "LS" is employed to acquire surveys on behalf of "Client" and the actual performance of said surveys may, at "LS's" discretion, be provided via internal licensed surveyors, or use of independent surveyors licensed to practice in each corresponding state. In such instances where "LS" will act as survey coordinator on behalf of "Client", "LS" will coordinate surveys from licensed surveyors performing in accordance with state minimum standards and the. "LS's" liability will be limited to managing the procurement of independent surveyors, monitoring all survey progress, communicating surveying needs to the surveyors, reviewing surveys for compliance with requirements, and delivery of final surveys to parties involved in the transaction. "LS" shall not be liable nor held responsible for data or information shown or not shown by the independent surveyors on said surveys. However, this does not limit the liability of the independent surveyor. It is also understood that "LS" will obtain evidence or certificates of insurance from each independent Surveyor prior to the commencement of any surveying work which state the independent Surveyor and his employees are covered by workmen's compensation insurance and general liability insurance (and the amounts thereof). Evidence or certificate of insurance for professional liability insurance is not a requirement for "LS" or each independent Surveyor.

9. **Parties:** It is understood that only the parties named within the Surveyor's Certification are entitled to rely on the survey and the certificate. The liability of the independent surveyor and that of "LS' is only extended to those parties.

10. **Right to Cancel:** It is understood "Client" reserves the right to cancel some or all survey orders at any time upon the following terms and conditions:

a) "Client" will notify "LS" in writing of cancellation by email, certified mail, overnight package, or messenger delivery, which notice will be effective on the date on which it is received by "LS" (the "Cancellation Date");

b) In the event of cancellation, "LS" will be compensated on the basis of:

i. reasonable charges for work performed to the date which is ONE (1) business day after the Cancellation Date; and

ii. reasonable costs and expenses for incidentals to the date which is one (1) business day after the Cancellation Date.

11. **Right to Lean:** "LS" shall, at its sole discretion and when legally applicable, reserves the right to lean a property, in the event that payment to "LS" remains uncollected past 90 days.

12. **Confidentiality:** The information contained in this agreement and related to this project is confidential, may be attorney-client privileged, may constitute inside information, and is intended only for the use of the parties to this agreement. Unauthorized use, disclosure or copying is strictly prohibited and may be unlawful.

Acceptance: "Client" agrees with all the terms and conditions herein by their acceptance of "LS" proposal to coordinate surveys and by acknowledging Section 2 of the Survey requirements for the specific project which references these terms and conditions and the date hereof.

LONGITUDE SURVEYORS

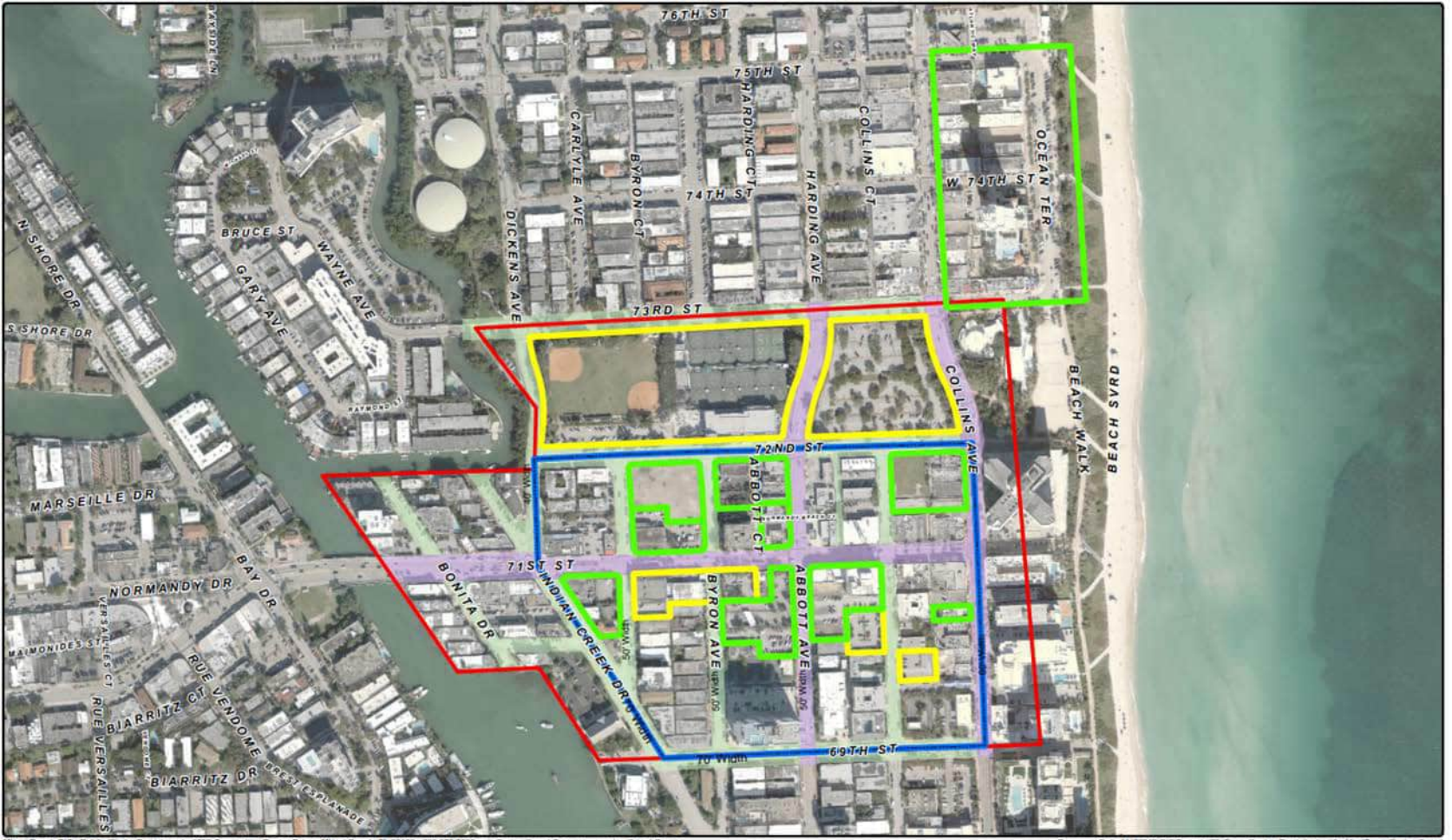
Client Information: Jacobs/City of Miami Beach
Estimate Prepared By: Eduardo M. Suarez
Project Area: Topographic Survey
Project Length: Approximately 14,159 Linear Feet

Job Description	Position	Rate/Hour	Hours	Total Cost
Overall Management	Principal-in Charge	$175.00	30	$5,250.00
Prepare Job	Survey and Mapping Computer Technician	$90.00	30	$2,700.00
Horizontal & Vertical Control	Survey Crew (Party of Three) Conventional	$150.00	240	$36,000.00
Horizontal & Vertical Control Process	Survey and Mapping Computer Technician	$90.00	40	$3,600.00
Horizontal & Vertical Control Compute	Project Surveyor	$120.00	124	$14,880.00
Topographic Survey	Survey Crew (Party of Three) Conventional	$150.00	512	$76,800.00
Topographic Survey Process	Survey and Mapping Computer Technician	$90.00	51	$4,585.00
Topographic Survey Drafting	Survey and Mapping Computer Technician	$90.00	512	$46,080.00
DTM	Survey and Mapping Computer Technician	$90.00	64	$5,760.00
QA/QC	Project Surveyor	$120.00	36	$4,320.00
QA/QC Edits/Drafting	Survey and Mapping Computer Technician	$90.00	36	$3,240.00
			Total	$203,215.00

LONGITUDE SURVEYORS

Client Information: Jacobs/City of Miami Beach
Estimate Prepared By: Eduardo M. Suarez
Project Area: Sub-surface Utility Engineering (SUE)
Project Length: Approximately 14,159 Linear Feet

Job Description	Position	Rate/Hour	Hours	Total Cost
Overall Management	Principal-in Charge	$175.00	10	$1,750.00
Prepare Job	Survey and Mapping Computer Technician	$90.00	10	$900.00
SUE Designation	Ground Penetrating Radar (Party of Three)	$300.00	456	$136,800.00
SUE Designation Process	Survey and Mapping Computer Technician	$90.00	82	$7,380.00
QA/QC	Project Surveyor	$120.00	12	$1,440.00
QA/QC Edits/Drafting	Survey and Mapping Computer Technician	$90.00	12	$1,080.00
			Total	$149,350.00



Miami Beach GIS • Public Works Department • 1700 Convention Center Drive • Miami Beach, FL 33139 • 305.673.7000 • gis@miamibeachfl.gov • www.miamibeachfl.gov

Document Path: M:\$COMB\GIS\Projects\22_Town_Center_Revitalization\ArcMap\Town_Center_2.mxd

SHEET NO.	1	
OF	1	
DATE	2/24/2022	
DRAWN	wolfmann	
SCALE	1 Inch = 300 feet	
REVISED BY	Cristina Ortega	
FILENAME	Town_Center_2	

North Beach Neighborhood Project Within The Limits Of North Shore D & Town Center

Town Center	Upcoming Development	FDOT ROW	
North Shore D	City Owned	Miami Beach ROW	

Professional Service Industries, Inc.
7950 N.W. 64th Street
Miami Beach, FL 33166
Office: (305) 593-1915

April 4, 2023

Jacobs Engineering
643 SW 4th Avenue, Suite 400
Gainesville, Florida 32601

Attn: Mr. Juan F. Aceituno, P.E. – Senior Project Manager
(305) 905-3492
juan.aceituno@jacobs.com

Re: Proposal for Geotechnical Engineering Services
North Shore D Neighborhood Improvement Project - Pump Stations PS 3 and PS 4
73rd St and Dickens Ave (PS 3)
69th St and Indian Creek Dr (PS 4)
City of Miami Beach, Florida
PSI Proposal No. 0397-100322

Dear Mr. Aceituno:

Professional Service Industries, Inc. (PSI), an Intertek company, is pleased to submit a proposal to conduct a geotechnical exploration and corresponding Data Report for the above reference project located in Miami Beach, Florida. PSI thanks you for the opportunity to propose provide Geotechnical Engineering Services to Jacobs Engineering and looks forward to being part of the design team. A review of project information, along with a proposed scope of services, schedule and fee are provided below.

Aerial photos of the general location of the site and project area, marked in yellow, are shown below from Google Earth (2022) in **Figure 1**, **Figure 2 and Figure 3**, respectively:

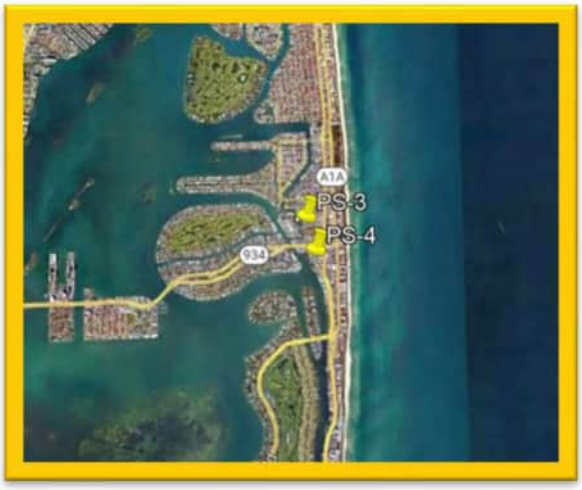


FIGURE-1: SITE VICINITY, MIAMI BEACH, FL

FIGURE-2: PS-3 PROJECT AREA

FIGURE-3: PS-4 PROJECT AREA

PROJECT UNDERSTANDING

Based on PSI's review of North Shore D Neighborhood Improvement Project Task 3 Pre-Design Phase – Infrastructure Modeling and Needs Assessment document, a summary of our understanding of the proposed project is provided below in the following Project Description table.

TABLE 1: PROJECT DESCRIPTION AND PROPOSAL BASIS

Project Items	Construction of two new stormwater pump stations for PS-3 and one new stormwater pump station for PS-4.
Existing Grade Change within Project Site	± Two feet estimate (Google Earth Pro)

The following table provides a generalized description of the existing site conditions based on available information.

TABLE 2: SITE DESCRIPTION

Site Location	PS 3: The site is located within the southwest quadrant of the intersection of 73rd St and Dickens Ave in Miami Beach, FL (Latitude: 25.857889°; Longitude: -80.125411°). PS 4: The site is located within the southwest quadrant of the intersection of 69th St and Indian Creek Dr in Miami Beach, FL (Latitude: 25.853581°; Longitude: -80.124064°).
Site History	Based on our review of Google Earth Pro Aerial Photographs from 1995 through 2022, the site appears to have been occupied by the existing structures.
Existing Site Ground Cover	Pavement and grass.
Site Boundaries/Neighboring Development	PS 3: North boundary: 73rd Street. East boundary: Dickens Avenue. West and South boundaries: Water.

	PS 4: North boundary: existing building. East boundary: existing building and pavement. West boundary: water South boundary: pavement area.
Site Access	Site appears to be accessible to truck-mounted drilling equipment and may require MOT

Should the above information be inconsistent with planned construction, Mr. Aceituno should contact the PSI office and allow necessary modifications to be made to the proposal.

SCOPE OF SERVICES

The geotechnical engineering scope of services will include the following items that will be covered in more detail further.

- Desktop review of generally available public information, i.e., NRCS, USGS databases.
- Field exploration consisting of drilling four SPT soil borings and sampling of the subsurface materials including rock core samples, and observation of current groundwater levels at the site.
- Laboratory testing of the subsurface materials including sieve analyses, Atterberg limits (clayey soils if present), moisture content, organic content, and corrosion series.

Field Exploration:

PSI proposes that the subsurface conditions be explored by four SPT soil borings. The table below summarizes the exploratory boring program as requested by **Jacobs Engineering**.

TABLE 3: SUMMARY OF SPT BORINGS

Design Element	Quantity	Soil Drilling SPT (ft)	Total (ft)
PS 3	2	100	200
PS 4	2	100	200
		Total:	**400**

PSI will locate the boring locations, provided by Jacobs Engineering, in the field in order to reduce MOT requirements; once borings relocation in the field is completed, PSI will send the resulting borings location plan for Jacobs Engineering approval. The final locations will be shown in our data report. The borings locations will be identified in the field using available natural landmarks or recreational GPS coordinates. Surveying of the boring locations to obtain surface coordinates and elevations is beyond the scope of work. However, PSI will coordinate with Jacobs Engineering regarding the completed boring locations for the final surveyed locations completed by others. References to depths of various subsurface strata will be based on depths below existing grade at the time of drilling. Below are general considerations about the drilling activities and follows exploration description in **Table 4**.

- During the field activities, the subsurface conditions will be observed, logged, and visually classified. Field notes will be maintained to summarize soil types and descriptions, water levels, changes in subsurface conditions, and drilling conditions.
- Final depths of the borings may be extended (because of weak/soft soils) or reduced (because of refusal) depending on the subsurface materials identified during field activities.

- PSI will contact Local Utility Clearance Entity, i.e., Sunshine 811 prior to the start of drilling activities. It is our experience that these companies do not mark the locations of privately-owned utilities. This proposal is based on private utility lines and other subsurface appurtenances are located in the field by others prior to field activities.
- PSI will also provide GPR scans at each of the boring locations, as required by City of Miami Beach in order to obtain road closure permit and to further mitigate the risk of drilling through underground utilities.
- PSI will exercise reasonable caution to avoid damages to underground utilities by contacting local utility companies prior to the field activities. However, private utility locations are often unknown by public utility companies and by the utility owners. Therefore, PSI will not be responsible for damage to the site or any buried utilities that are not made known to us.
- Some damage to the ground surface may result from the drilling operations near the work areas and along ingress/egress pathways. The field crew will attempt to limit such damage, but no restoration other than grouting the entire borehole with cement-bentonite and applying asphalt patches at the borings located within pavement areas is included in this proposal. Excess auger cuttings and drilling spoils will be hand-swept and removed from all surface soils.
- Maintenance of traffic will be provided for the duration of the field activities.

TABLE 4: ANTICIPATED FIELD EXPLORATION DESCRIPTION

Drilling Equipment	Truck-mounted drilling equipment
Drilling Method	Mud Rotary
Field Testing	Standard Penetration Test - SPT (ASTM D1586)
Sampling Procedure	Soils: ASTM D1587/1586
Sampling Frequency	Continuously (two-foot intervals) to a depth of 10 feet, and at five-foot intervals thereafter for SPT borings.
Frequency of Groundwater Level Measurements	During drilling
Boring Backfill Procedures	Soil cuttings and grouting
Sample Preservation and Transportation Procedure	General accordance with ASTM D4220

The field exploration program will be performed in general accordance with the designated ASTM procedures considering local and regional standard of care practices.

Laboratory Testing

Representative soil samples obtained during the field exploration program will be transported to the PSI laboratory in Miami for testing. The nature and extent of this laboratory testing program will be dependent upon the subsurface conditions identified during the field exploration program. The laboratory program will be performed in general accordance with the applicable ASTM procedures considering local and regional standard of care practices. The laboratory program may include the following tests shown in **Table 5** below.

TABLE 5: LABORATORY TESTING GENERAL PROCEDURES

Laboratory Test	Applicable ASTM / General Procedures	Quantity
Visual Classification	ASTM D2488	4
Moisture Content	ASTM D2216	8
Organic Content	ASTM D2974	8
Sieve Analysis	AASHTO T-27	8
Material Finer than 200 Sieve	ASTM C-117	8
Soil Resistivity	ASTM G57	4
Soil pH	ASTM G51 or ASTM D4972, or EPA SW-846 Test Method 9045D	4
Sulfate Content	EPA Sulfate E375.4 or EPA SW-846 Test Method 9056A	4
Chloride Content	EPA Chloride E-325 or EPA SW-846 Test Method 9056A	4

Portions of any samples that are not altered or consumed by laboratory testing will be retained for 30 days after the issuance of the geotechnical report and will then be discarded.

Data Report

The results of the field exploration, and laboratory testing will be included in a Data Report and summarized on convenient tables; no geotechnical engineering analyses nor recommendations are needed at this time.

A pdf version of the geotechnical data report will be prepared and submitted by email to **Jacobs Engineering** and design team. If requested by **Jacobs Engineering**, additional hard copies can be provided. The data geotechnical report will be reviewed, signed, and sealed by a registered Professional Engineer in the State of Florida.

Schedule based on the site accessibility, drilling can commence approximately three weeks after the right of way permit is granted and we are authorized to proceed, weather permitting. Please note that the permit process duration is out of PSI's control and can take anywhere from a week to four months. The final data report will be provided within two weeks of completion of our subsurface exploration. If desired, preliminary geotechnical data information can be provided to the design team once the exploration advance and laboratory testing are complete.

Delays sometime occur due to adverse weather, utility clearance requirements, site clearing requirements for drill rig access, obtaining drilling permits, obtaining Right of Entries and other factors outside of PSI's control. In this event, PSI will communicate the nature of the delay and provide a schedule as soon as possible.

FEE

PSI proposes that the fee for performance of the scope of services be charged as a lump sum. Based on the scope of our **geotechnical services** (SPT borings, laboratory testing and engineering data report) provided in this proposal, the cost of services will be **$22,694.52** as detailed in our base services cost break down **Table 6** below.

TABLE 6: GEOTECHNICAL SERVICES COST BREAKDOWN

ENGINEERS ESTIMATE FOR GEOTECH SERVICES						
North Shore D Neighborhood Improvement Project Pump Stations PS-3 and PS-4						
4/4/2023						
Line	**Description**	**Est. Qty.**	**Unit**	**Multiplier**	**Rate**	**Total**
						$ 22,694.52
	Field Investigation					**$ 14,924.24**
1.A	Mobilization/Demobilization (Up to 100 ft of borings per day; 1275'/100'=13)	4	Ea	N/A	$ 378.56	$ 1,514.24
1.B	SPT Borings (0-50 feet) (2 borings to 50')	200	LF	N/A	$ 21.63	$ 4,326.00
1.B	SPT Borings (50 -75 feet) (2 borings to 25' = 50')	100	LF	N/A	$ 25.96	$ 2,596.00
1.B	SPT Borings (75-100 feet) (2 borings to 25' = 50')	100	LF	N/A	$ 30.28	$ 3,028.00
1.I	Closing Holes with Grout (SPT Borings)	400	LF	N/A	$ 8.65	$ 3,460.00
	Laboratory Testing					**$ 2,742.88**
3.G	Moisture Content	8	Ea	N/A	$ 41.10	$ 328.80
3.H	Organic Content	8	Ea	N/A	$ 54.08	$ 432.64
3.I	Grain Size per (AASHTO T-27)	8	Ea	N/A	$ 69.22	$ 553.76
3.O	Material Finer than 200 Sieve per ASTM C-117	8	Ea	N/A	$ 48.67	$ 389.36
3.K	Soil Classification per ATSM D-2487	4	Ea	N/A	$ 103.83	$ 415.32
3.U	Resistivity Test in Accordance with California Method 643-7 (pH, sulfates, resistivity and chlorides)	4	Ea	N/A	$ 155.75	$ 623.00
	Engineering Management and Geotech Report					**$ 5,027.40**
24.C	Non Registered Technical Staff	8	Hr	2.85	$ 50.00	$ 1,140.00
24.A	Senior Technical Engineer Scientists	4	Hr	2.85	$ 67.00	$ 763.80
24.B	Senior Project Manager/Registered Technical Staff	16	Hr	2.85	$ 63.00	$ 2,872.80
24.F	Engineering Technician	4	Hr	2.85	$ 22.00	$ 250.80
Notes: Unit rates in accordance with Miami-Dade County Water and Sewer Contract No. E15-WASD-13						
NC: Rate not in contract						

Depending on the size of the project and project schedule, partial billing may be performed monthly based on Project Item progress to date prior to the completion of the final report.

The estimated fee is based on the boring locations being accessible to truck mounted drilling equipment and the client obtaining and providing permission for PSI to enter and access the site.

It should be noted that fees associated with locating private underground utilities, reviewing construction drawings, executing traffic control services, preparing construction specifications, attending special conferences, providing environmental consulting, and any other work requested after submittal of the report is not included in the proposed fee.

AUTHORIZATION

PSI will proceed with the geotechnical services based on written authorization. The service will be performed pursuant to the attached General Conditions enclosed and incorporated into this proposal.

Please sign the authorization sheet and return one copy of this proposal. When returning the proposal, please also complete the attached Project Data Sheet, and provide a scaled-current site plan so that PSI may best serve the project. By executing this authorization, permission is being provided for PSI to access the project site.

CLOSING

We at PSI appreciate the opportunity to offer professional services for this project and look forward to being part of the design team. If there are any questions, please feel free to contact us at your convenience.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

Lucrèce E. Regisme
Staff Engineer – Geotechnical Services
lucrece.regisme@intertek.com

Jose N. Gómez, PE, D.GE
Chief Engineer – Geotechnical Services
Jose.n.gomez@intertek.com

Appendix A: Proposal Authorization and Payment Instructions
Project Data Sheet
General Conditions

LER/JNG/ler

Proposal Authorization & Payment Instructions

Authorization

To execute this proposal, please sign and complete the authorization information below, along with applicable payment instructions, and return one copy of the authorized proposal to the PSI office.

_____ _____
Authorized By (please print) Signature

_____ _____
Title Firm

_____
Address

_____ _____ _____ _____
City State Zip Code Telephone

_____ _____ _____
Email Address Date Purchase Order No. / Project Tracking No. (if applicable)

Payment Instructions

If invoice payment is to be made by a party other than the authorizing party above, please provide the following information for whom the invoices are to be billed:

_____ _____
Firm Attention

_____ _____
Address Title

_____ _____ _____ _____
City State Zip Code Telephone

_____
Authorizing Party's Relationship to Invoice Payment Party

If invoices are to be approved other than by the payment party above, please provide the following information for whom the invoices are to be mailed for approval:

_____ _____
Firm Attention

_____ _____
Address Title

_____ _____ _____ _____
City State Zip Code Telephone

_____
Authorizing Party's Relationship to Invoice Approval Party

Project Data Sheet

Please complete the following Project Data Sheet so that PSI may best serve your project.

Project Name

Architect | Project Manager | Phone Number

Structural Engineer | Project Manager | Phone Number

Civil Engineer | Project Manager | Phone Number

Construction Type | Plan Area | Number of Floors

Interior Column Spacing | Exterior Column Spacing

Exterior Column Load | Live | Dead

Interior Column Load | Live | Dead

Floor Slab Load | Slab-on-Grade | Basement/Depth

Will Elevation of site be raised by filling | How much?

Septic Tank | Storm Water Drainage

Pavement Type | Traffic Load | Traffic Type

Other pertinent Information/Subsurface Information

GENERAL CONDITIONS - FLORIDA

1. **PARTIES AND SCOPE OF WORK**: Professional Service Industries Inc. ("PSI") shall include said company or its particular division, subsidiary or affiliate performing the work. "Work" means the specific service to be performed by PSI as set forth in PSl's proposal, Client's acceptance thereof and these General Conditions. Additional work ordered by Client shall also be subject to these General Conditions. "Client" refers to the person or business entity ordering the work to be done by PSI. If Client is ordering the work on behalf of another, Client represents and warrants that it is the duly authorized agent of said party for the purpose of ordering and directing said work. Unless otherwise stated in writing, Client assumes sole responsibility for determining whether the quantity and the nature of the work ordered by the client is adequate and sufficient for Client's intended purpose. Client shall communicate these General Conditions to each and every third party to whom Client transmits any part of PSI's work. PSI shall have no duty or obligation to any third party greater than that set forth in PSI's proposal, Client's acceptance thereof and these General Conditions. The ordering of work from PSI, or the reliance on any of PSI's work, shall constitute acceptance of the terms of PSI's proposal and these General Conditions, regardless of the terms of any subsequently issued document.

2. **TESTS AND INSPECTIONS**: Client shall cause all tests and inspections of the site, materials and work performed by PSI or others to be timely and properly performed in accordance with the plans, specifications and contract documents and PSI's recommendations. No claims for loss, damage or injury shall be brought against PSI by Client or any third party unless all tests and inspections have been so performed and unless PSI's recommendations have been followed. Client agrees to indemnify, defend and hold PSI, its officers, employees and agents harmless from any and all claims, suits, losses, costs and expenses, including, but not limited to, court costs and reasonable attorney's fees in the event that all such tests and inspections are not so performed or PSl's recommendations are not so followed.

3. **PREVAILING WAGES**: This proposal specifically excludes compliance with any project labor agreement, labor agreement, or other union or apprenticeship requirements. In addition, unless explicitly agreed to in the body of this proposal, this proposal specifically excludes compliance with any state or federal prevailing wage law or associated requirements, including the Davis Bacon Act. It is agreed that no applicable prevailing wage classification or wage rate has been provided to PSI, and that all wages and cost estimates contained herein are based solely upon standard, non-prevailing wage rates. Should it later be determined by the Owner or any applicable agency that in fact prevailing wage applies, then it is agreed that the contract value of this agreement shall be equitably adjusted to account for such changed circumstance. Client will reimburse, defend, indemnify and hold harmless PSI from and against any liability resulting from a subsequent determination that prevailing wage regulations cover the Project, including all costs, fines and attorney's fees.

4. **SCHEDULING OF WORK**: The services set forth in PSI's proposal and Client's acceptance will be accomplished by PSI personnel at the prices quoted. If PSI is required to delay commencement of the work or if, upon embarking upon its work, PSI is required to stop or interrupt the progress of its work as a result of changes in the scope of the work requested by Client, to fulfill the requirements of third parties, interruptions in the progress of construction, or other causes beyond the direct reasonable control of PSI, additional charges will be applicable and payable by Client.

5. **ACCESS TO SITE**: Client will arrange and provide such access to the site and work as is necessary for PSI to perform the work. PSI shall take reasonable measures and precautions to minimize damage to the site and any improvements located thereon as the result of its work or the use of its equipment.

6. **CLIENT'S DUTY TO NOTIFY ENGINEER**: Client warrants that it has advised PSI of any known or suspected hazardous materials, utility lines and pollutants at any site at which PSI is to do work, and unless PSI has assumed in writing the responsibility of locating subsurface objects, structures, lines or conduits, Client agrees to defend, indemnify and save PSI harmless from all claims, suits, losses, costs and expenses, including reasonable attorney's fees as a result of personal injury, death or property damage occurring with respect to PSI's performance of its work and resulting to or caused by contact with subsurface or latent objects, structures, lines or conduits where the actual or potential presence and location thereof were not revealed to PSI by Client.

7. **RESPONSIBILITY**: PSI's work shall not include determining, supervising or implementing the means, methods, techniques, sequences or procedures of construction. PSI shall not be responsible for evaluating, reporting or affecting job conditions concerning health, safety or welfare. PSI's work or failure to perform same shall not in any way excuse any contractor, subcontractor or supplier from performance of its work in accordance with the contract documents. Client agrees that it shall require subrogation to be waived against PSI and for PSI to be added as an Additional Insured on all policies of insurance, including any policies required of Client's contractors or subcontractors, covering any construction or development activities to be performed on the project site. PSI has no right or duty to stop the contractor's work.

8. **SAMPLE DISPOSAL**: Test specimens will be disposed immediately upon completion of the test. All drilling samples will be disposed sixty (60) days after submission of PSI's report.

9. **PAYMENT**: The quantities and fees provided in this proposal are PSI's estimate based on information provided by Client and PSI's experience on similar projects. The actual total amount due to PSI shall be based on the actual final quantities provided by PSI at the unit rates provided herein. Where Client directs or requests additional work beyond the contract price it will be deemed a change order and PSI will be paid according to the fee schedule. Client shall be invoiced once each month for work performed during the preceding period. Client agrees to pay each invoice within thirty (30) days of its receipt. Client further agrees to pay interest on all amounts invoiced and not paid or objected to for valid cause in writing within said thirty (30) day period at the rate of eighteen (18) percent per annum (or the maximum interest rate permitted under applicable law), until paid. Client agrees to pay PSI's cost of collection of all amounts due and unpaid after thirty (30) days, including court costs and reasonable attorney's fees. PSI shall not be bound by any provision or agreement requiring or providing for arbitration of disputes or controversies arising out of this agreement, any provision wherein PSI waives any rights to a mechanics' lien, or any provision conditioning PSI's right to receive payment for its work upon payment to Client by any third party. These General Conditions are notice, where required, that PSI shall file a lien whenever necessary to collect past due amounts. Failure to make payment within 30 days of invoice shall constitute a release of PSI from any and all claims which Client may have, whether in tort, contract or otherwise, and whether known or unknown at the time.

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10. **ALLOCATION OF RISK, LIMITATION OF LIABILITY, AND RELEASE OF INDIVIDUAL EMPLOYEES AND AGENTS**: PURSUANT TO FLORIDA STATUE § 558.0035, AN INDIVIDUAL EMPLOYEE OR AGENT OF PSI MAY NOT BE HELD INDIVIDUALLY LIABLE FOR NEGLIGENCE.

SHOULD PSI OR ANY OF ITS EMPLOYEES BE FOUND TO HAVE BEEN NEGLIGENT IN THE PERFORMANCE OF ITS WORK, OR TO HAVE MADE AND BREACHED ANY EXPRESS OR IMPLIED WARRANTY, REPRESENTATION OR CONTRACT, CLIENT, ALL PARTIES CLAIMING THROUGH CLIENT AND ALL PARTIES CLAIMING TO HAVE IN ANY WAY RELIED UPON PSI'S WORK AGREE THAT THE MAXIMUM AGGREGATE AMOUNT OF THE LIABILITY OF PSI, ITS OFFICERS, EMPLOYEES AND AGENTS SHALL BE LIMITED TO $25,000.00 OR THE TOTAL AMOUNT OF THE FEE PAID TO PSI FOR ITS WORK PERFORMED ON THE PROJECT, WHICHEVER AMOUNT IS GREATER. IN THE EVENT CLIENT IS UNWILLING OR UNABLE TO LIMIT PSI'S LIABILITY IN ACCORDANCE WITH THE PROVISIONS SET FORTH IN THIS PARAGRAPH, CLIENT MAY, UPON WRITTEN REQUEST OF CLIENT RECEIVED WITHIN FIVE DAYS OF CLIENT'S ACCEPTANCE HEREOF, INCREASE THE LIMIT OF PSI'S LIABILITY TO $250,000.00 OR THE AMOUNT OF PSI'S FEE PAID TO PSI FOR ITS WORK ON THE PROJECT, WHICHEVER IS THE GREATER, BY AGREEING TO PAY PSI A SUM EQUIVALENT TO AN ADDITIONAL AMOUNT OF 5% OF THE TOTAL FEE TO BE CHARGED FOR PSI'S SERVICES. THIS CHARGE IS NOT TO BE CONSTRUED AS BEING A CHARGE FOR INSURANCE OF ANY TYPE, BUT IS INCREASED CONSIDERATION FOR THE GREATER LIABILITY INVOLVED. IN ANY EVENT, ATTORNEY'S FEES EXPENDED BY PSI IN CONNECTION WITH ANY CLAIM SHALL REDUCE THE AMOUNT AVAILABLE, AND ONLY ONE SUCH AMOUNT WILL APPLY TO ANY PROJECT.

NEITHER PARTY SHALL BE LIABLE TO THE OTHER IN CONTRACT, TORT (INCLUDING NEGLIGENCE AND BREACH OF STATUTORY DUTY) OR OTHERWISE FOR LOSS OF PROFIT (WHETHER DIRECT OR INDIRECT) OR FOR ANY INDIRECT, CONSEQUENTIAL, PUNITIVE, OR SPECIAL LOSS OR DAMAGE, INCLUDING WITHOUT LIMITATION LOSS OF PROFITS, REVENUE, BUSINESS, OR ANTICIPATED SAVINGS (EVEN WHEN ADVISED OF THEIR POSSIBILITY).

NO ACTION OR CLAIM, WHETHER IN TORT, CONTRACT, OR OTHERWISE, MAY BE BROUGHT AGAINST PSI, ARISING FROM OR RELATED TO PSI'S WORK, MORE THAN TWO YEARS AFTER THE CESSATION OF PSI'S WORK HEREUNDER, REGARDLESS OF THE DATE OF DISCOVERY OF SUCH CLAIM.

11. **INDEMNITY**: Subject to the above limitations, PSI agrees not to defend but to indemnify and hold Client harmless from and against any and all claims, suits, costs and expenses including reasonable attorney's fees and court costs to the extent arising out of PSI's negligence as finally determined by a court of law. Client shall provide the same protection to the extent of its negligence. In the event that Client or Client's principal shall bring any suit, cause of action, claim or counterclaim against PSI, the Client and the party initiating such action shall pay to PSI the costs and expenses incurred by PSI to investigate, answer and defend it, including reasonable attorney's and witness fees and court costs to the extent that PSI shall prevail in such suit.

12. **TERMINATION**: This Agreement may be terminated by either party upon seven days' prior written notice. In the event of termination, PSI shall be compensated by Client for all services performed up to and including the termination date, including reimbursable expenses.

13. **EMPLOYEES/WITNESS FEES**: PSI's employees shall not be retained as expert witnesses except by separate, written agreement. Client agrees to pay PSI's legal expenses, administrative costs and fees pursuant to PSI's then current fee schedule for PSI to respond to any subpoena. For a period of one year after the completion of any work performed under this agreement, Client agrees not to solicit, recruit, or hire any PSI employee or person who has been employed by PSI within the previous twelve months. In the event Client desires to hire such an individual, Client agrees that it shall seek the written consent of PSI, and shall pay PSI an amount equal to one-half of the employee's annualized salary, without PSI waiving other remedies it may have.

14. **FIDUCIARY**: PSI is not a financial advisor, does not provide financial advice or analysis of any kind, and nothing in our reports can create a fiduciary relationship between PSI and any other party.

15. **RECORDING:** Photographs or video recordings of the Client's own project may be taken by and used for the Client's own internal purposes. Photographs or video recordings may not be used for marketing or publicity, or distributed to a third party or otherwise published without PSI's prior review and consent in writing. Taking photographs of other Clients' samples, test setups, or facilities, or recording in any manner any test specimen other than the test specimen related to the Client's project is prohibited; and the Client agrees to hold in strict confidence and not use any proprietary information disclosed either advertently or inadvertently. The Client shall defend, hold harmless, and indemnify PSI for any breach of this clause.

16. **CHOICE OF LAW AND EXCLUSIVE VENUE**: All claims or disputes arising or relating to this agreement shall be governed by, construed, and enforced in accordance with the laws of Illinois. The exclusive venue for all actions or proceedings arising in connection with this agreement shall be either the Circuit Court in Cook County, Illinois, or the Federal Court for the Northern District of Illinois.

17. **PROVISIONS SEVERABLE**: The parties have entered into this agreement in good faith, and it is the specific intent of the parties that the terms of these General Conditions be enforced as written. In the event any of the provisions of these General Conditions should be found to be unenforceable, it shall be stricken and the remaining provisions shall be enforceable.

18. **ENTIRE AGREEMENT**: This agreement constitutes the entire understanding of the parties, and there are no representations, warranties or undertakings made other than as set forth herein. This agreement may be amended, modified or terminated only in writing, signed by each of the parties hereto.