



CONSULTANT WORK ORDER

Date:	September 14, 2021
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1. PROJECT INFORMATION:

Project Title:	Clearwater Beach Marina Replacement	
City Project Number:	21-0008-MA	
City Plan Set Number:	2021015	
Consultant Project Number:	211223	

2. SCOPE OF SERVICES:

This scope of services is for the Moffatt & Nichol Team to provide planning, permitting, and design for the City of Clearwater (City) for the replacement of the Clearwater Beach Marina. The marina replacement will consist of a new floating and fixed dock marina with associated marina utility upgrades, sidewalk replacement, minor drainage and minor architectural improvements including a potential collocated ticket sale kiosk for the commercial users. This scope includes the planning, permitting, and design of a new PSTA water taxi / ferry landing integrated into the marina redevelopment as outlined in RFQ 24-21.

Moffatt & Nichol (M&N) and subconsultants will provide the City with the following services related to the redevelopment: planning and targeted stakeholder outreach; permitting; geotechnical, civil, coastal, structural, electrical, and mechanical engineering; architecture; and landscape architecture. The team will also provide technical support to the City during their preparation of a Request for Qualifications to select a Construction Manager at Risk (CMAR) for this project.

Construction documents will be developed for the full scope of the project. The design plans shall be compiled using the City of Clearwater CAD standards, as attached.

I PRE-DESIGN PHASE:

Task I.1. Project Kick Off

The Project Team will attend a kick-off meeting and site visit with the City to review the project scope, key project goals, schedule, responsibilities, etc.

- Key members of the Project Team will attend one (1) kick-off meeting at the marina. Following the meeting, the team will walk the site.
- Prepare meeting agenda and initial project design schedule prior to kick-off meeting. Project schedule will be prepared using Microsoft Project and updated throughout the duration of the project.
- Prepare meeting minutes following kick-off meeting using City's preferred template.
- Perform a detailed review of available documentation (studies, surveys, record drawings, etc.) and identify any data gaps.

Task I.2. Fieldwork

M&N will coordinate the fieldwork needed for planning and design of the project. This includes the geotechnical exploration and the marine resource survey as further outlined below.

The City has recently completed topographic and bathymetric surveys for the project site. No survey work is included in this proposal.

A. Geotechnical Exploration

Driggers Engineering Services (DESI) will complete the geotechnical field exploration for the project.

- Complete a geotechnical field exploration inclusive of:
 - 12 in-water soil borings, drilled to a depth of 50 feet at key locations around the marina basin. Water borings will be used for the design of the marina structures.
 - 6 upland SPT borings, drilled to a depth of 30 feet (or 180 total feet if deeper or shallower borings are determined to be necessary) at key locations inside the project limits. Landside borings will be used for the design of upland foundation structures, utility trench, and analysis of the existing seawall to implement repairs.
 - Collect dredge samples for contaminant testing as needed for permitting
- Collect and test field samples to determine the soil classifications and properties to be used for the design of the marina structures.
- Prepare a geotechnical report summarizing the findings from the exploration and recommendations for the design of the marina structures. Report to be

electronically signed/sealed by a Registered Professional Engineer and delivered in PDF format.

B. Marine Resource Survey

Wood Consulting, supported by Environmental Consulting & Technology (ECT), will complete an environmental resource survey of the project limits to identify the type, limits, and density of protected marine resources such as seagrass, mangroves, oysters, corals, etc. observed within the project limits. Survey to be delivered in PDF format.

Task I.3. Utility Assessment

M&N's marina utility team consisting of three engineers representing electrical, water, and sanitary disciplines will conduct a one (1) day site visit to evaluate the existing marina utility infrastructure. Site visit will include the evaluation of the existing marina utilities and upland utility services for preparation of demolition drawings and coordination of new utility services. Site visit will be a non-destructive, visual assessment of the utilities supported by available as-built drawings provided by the City, as outlined below. No investigation or mapping of below ground utilities, building MEP, or life safety (within buildings) is included.

- Investigate existing Duke Energy service and service entrance equipment. Coordinate with Duke Energy regarding available capacity to existing service.
- Identify existing upland electrical loads/services which may need to be maintained and/or backfeed from new marina design.
- Visual assessment of future/anticipated utility locations and routing.
- Record specific vessel requirements including shore power and connection types. City to provide list of existing commercial vessel shore power requirements, preferences, and other utility needs (fuel, pumpout, etc.) (to be supplemented by survey – see Outreach section of proposal).
- Identify existing communications/data provider service locations
- Evaluate existing security/CCTV/access control infrastructure.
- Evaluate current equipment condition and performance for sewage pumpout, potable water, fire water, and fuel.
- Investigate lift station #81 which serves the marina sewage pumpout system, Bait House, and associated restrooms.
- Evaluate the existing fuel system for reconfiguration and potential expansion.
- Prepare a brief technical memorandum summarizing our observations from the utility assessment with an existing condition plan which will be used as the basis for the utility demolition drawings. Memorandum will be delivered electronically in PDF format.

Task I.4. Marina Market Analysis:

M&N will evaluate the existing local boating market as it relates to slip size, distribution, and occupancy for use in planning the replacement of the Clearwater Beach Marina. M&N will conduct a limited marina market study of the regional commercial, transient, and recreational boating market and prepare a report summarizing the current market trends.

- Define the competing market area using geographic and use type determinations.
- Survey competing wet slip marinas within the market area to establish typical slip sizes, occupancy, dock types, fees, and amenities. The marina research will include a broad representation of wet slip marinas of similar size, scale, and function. Research will be limited to internet-based research, phone interviews with marina staff, and local knowledge (including City provided information for the Downtown and Beach Marinas). The survey will focus on the following:
 - The size and demand for slips in the region
 - The types of end users (transient, long term lease, seasonal, live aboard, etc.) that frequent the facility
 - Available amenities at existing facilities
 - Occupancy rates and waitlists
- Prepare a summary report with results of the marina market survey with target slip mix, recommended amenities, and market rates, where available. The report will include documentation of the data sources as well as graphical representation of the data and results. Report will be delivered in PDF format.
- Analysis will be based on existing conditions and existing regional competing marinas. Forecasting future demand and revenues for marina slips is not included in this scope of work.

Task I.5. Master Planning

The project team will work with the City of Clearwater to develop a Master Plan for the marina replacement. The Master Plan will incorporate the findings and recommendations from the other tasks in this scope of work. The Team will develop alternative marina concept layouts incorporating proposed docking facilities, pedestrian traffic flow, commercial ticket sale kiosks, commercial slip signage, and marina security.

- Attend monthly meetings with the City to review project progress. M&N will prepare meeting agenda and update project design schedule prior to meetings and prepare meeting minutes following meetings.
- Develop a preliminary marina program based on preliminary City, Harbormaster, and stakeholder's input and considering prior reports and concepts provided by the City. The preliminary marina program will:

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- Evaluate size and general location and integration of waterside and landside elements with consideration of environmental permitting constraints for the project site.
 - Consider user types and how they are located throughout the marina.
 - Consider visitor and user experience.
- Lead one (1) design meeting with City Representatives and key design team members to present, review, and expand on the preliminary marina program. Meeting is expected to last four hours and can be hosted at the marina or other appropriate City venue.
- The results of the design meeting will be used to generate marina concept layouts for City review and comment. M&N will prepare three (3) marina layouts. Up to three (3) iterations of the preferred layout are budgeted. Marina concepts will evaluate:
 - Slip distribution and dimensions using current market trends
 - Dock types (fixed and floating)
 - Compliance with environmental permitting regulations
 - Constructability and phasing considerations for the proposed layouts
 - Potential locations for a ferry dock.
- A master plan concept will be developed using the input from the design meeting, the preferred marina layout, and with the consideration of the following:
 - Support facilities and amenities including fueling operations, marina utilities, security, and ADA-accessibility.
 - Stormwater requirements for landside development options.
 - Concept level utility impacts for proposed improvements.
 - Pedestrian circulation and options to reconfigure the ticket sale kiosks and improve flow and wayfinding on the sidewalk along the marina and Coronado Dr.
- Prepare Master Plan Figures and Renderings that capture the project vision.
 - One (1) draft rendered master plan will be prepared based on input from design team during the master planning phase for City's review and comment.
 - One (1) final rendered master plan will be prepared based on input from the City to use as the selected Master Plan for the project.
 - Two (2) rendered views highlighting specific components of interest will be prepared using the preferred concept. Renderings will not be photorealistic.
- Prepare a concept-level Engineer's Opinion of Probable Construction Cost (EOPCC) with Rough Order of Magnitude (ROM) Costs for primary master plan elements.

Task I.6. Stakeholder Outreach

The Project Team will prepare presentation materials and attend stakeholder meetings

during the master planning phase to present the project and gather input. Stakeholder outreach will include:

- Prepare PowerPoint presentation and up to four (4) presentation boards for meetings.
- Conduct in-person meetings with up to three (3) end user groups.
 - Meetings will be held at the marina offices
 - Meetings will solicit input from commercial users regarding their needs and concerns.
 - Evaluate marina access for commercial patrons and ticket kiosks.
- Prepare a survey for the City to distribute electronically to existing marina tenants, specifically the commercial vessels, to identify their vessel requirements and preferences. Interpret survey results and prepare summary of tenant input.
- Attend up to two (2) Marine Advisory Board meetings.
 - The first meeting is anticipated to occur at the beginning of the master planning phase to garner input that will be evaluated and incorporated into the master plan where appropriate.
 - The second meeting is anticipated to occur at the conclusion of the master planning phase to review the City's selected plan.
- Attend one (1) City council work session.
- Attend one (1) City council meeting.
- Prepare meeting minutes for the stakeholder meetings.

II DESIGN PHASE:

Task II.1. Coastal Engineering

M&N will evaluate Meteorological and Oceanic (Metocean) conditions at the project site and develop a hydrodynamic model to evaluate tidal currents and water quality and to develop the performance criteria for the floating docks. Results of the analysis will be summarized in the Design Criteria Memorandum in Section II.3.

- Review available metocean data from public sources including:
 - NOAA wind, tidal and current data.
 - Historical tidal data for operational water level ranges
 - Projected NOAA and USACE Sea Level Rise (SLR) rates
 - FEMA Flood Insurance Study and identify potential storm surge conditions for available/published return periods
- Determine extreme and operational design wave conditions using existing data and analytical methods. Wave modeling is not included in this scope of work.

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- Develop a hydrodynamic model to evaluate tidal currents in the project vicinity for design consideration. Using the MIKE 21 HD model, develop a model grid using available bathymetric and topographic data of the site and surrounding areas. No new data collection is included.
- Complete a flushing analysis (required for permitting) to estimate the tidal flushing capability and residence time of the marina basin based on bathymetry and water level data using the MIKE21 HD/AD model.
 - The hydrodynamic model developed for the hydraulic analysis will be used in conjunction with the advection/dispersion model to evaluate flushing.
 - A theoretical non-decaying tracer will be used in the model within the marina basin. Tidal exchange will be simulated over a four-day period to determine the remaining tracer vs. the original tracer in accordance with FDEP requirements.
 - Existing conditions and proposed conditions will be simulated (if different) and compared to demonstrate impacts of the proposed marina development on flushing.
 - Calibrating the model with field collected data is not included in this scope of services. Field data may be requested by the permitting agencies to measure current flow data to verify the inputs of the hydrodynamic flushing model.

Task II.2. Seawall Repair & Dredging Permit Drawings

A 2020 seawall inspection report identified the need for seawall repair and replacement with general recommendations and approximate repair extents. The repairs recommended in the report consisted of cap repair and installation of soil anchors. These above water repairs should qualify as exempt activities from the state. M&N will complete 30% design of the seawall repairs and prepare a permit drawing set to be submitted with the FDEP exemption request under Task II.4.

Other components of the project that are considered exempt activities from the state are maintenance dredging and demolition. M&N will also complete 30% dredge and demolition drawings for incorporation with the permit drawings for the permit exemption request.

- Conduct a site visit and make wall observations using kayaks during low tide to observe the above water portion of the seawall.
 - Observe the above water condition of the seawall and confirm the applicability and extents of the recommended repairs.
 - Collect field data, including stationing and size of repair, needed for preparation of seawall repair drawings.
 - Site visit includes two (2) people for (2) days. Additional inspection (above and below water) is not included in this scope of work.

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- Complete preliminary structural design of the seawall repairs. The repairs are anticipated to include select replacement of the existing seawall cap in-kind and installation of new tieback system with soil anchors to restrain the wall. Bulkhead replacement design, if required, is not included in this scope.
- Complete preliminary dredge design and dredge quantities using AutoCAD Civil3D to remove “high spots” in marina basin.
- Prepare permit drawings with the necessary level of detail to commence the environmental permitting process (permit exemption request) and refine project budget. Drawings are anticipated to include:
 - Coversheet and Index of Drawings
 - General Notes
 - Environmental notes and details
 - Existing conditions plan
 - Demolition plan and typical details
 - Overall site plan
 - Maintenance dredge plan and typical sections
 - Dredged Material Disposal
 - Seawall repair plan(s) and typical sections

Task II.3. 30% Submittal

The M&N team will provide preliminary design services and prepare 30% construction documents for the project based on the approved master plan developed in Section 1. Drawings will include suitable detail to initiate the environmental permitting phase, upland utility coordination, and for inclusion in the City’s upcoming RFQ for selection of a Construction Manager at Risk (CMAR). The project team will complete the following scope of work for 30% Design Submittal:

- Attend monthly meetings with the City to review project progress. M&N will prepare meeting agenda and update project design schedule prior to meetings and prepare meeting minutes following meetings.
- Update EOPCC for 30% design.
- Develop project phasing plans based on anticipated construction sequencing and available budget.
- Prepare a Design Criteria Memorandum which will serve as the Basis of Design for this project. The memorandum, which will serve as a living document throughout the design phase of the project, will include the results of the coastal engineering analysis completed in Task II, and summarize the initial marina programming decisions including dock geometry and phasing as well as spatial, environmental, sustainability/resiliency, and other requirements for upland support amenities,

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utilities, and materials. The project's sustainability goals will be guided by the City's published sustainability plan, Greenprint 2.0.

- Prepare 30% level construction drawings. The following drawings are anticipated for all disciplines:
 - Coversheet and Index of Drawings
 - General Notes
 - Environmental notes and details
 - Existing Conditions Plan(s)
 - Demolition Plans and Sections
 - Overall Site Plan
 - Phasing Plan
 - Structural Plan(s) and Typical Sections
 - Electrical Routing Plans and Single Line Diagrams
 - Marina Water and Sanitary Plans and Typical sections
 - Marina Utility Routing Plans
 - Grading and Drainage Plans and Details
 - Onsite Utility Plans
 - Site Hardscape Plan
 - Landscape Development Plan and Details
 - Irrigation Head Layout and Details
 - Architectural Site Plan
 - Building Plans, Sections and Elevations

A. Marina Structures

Design of the marina structures will be completed by M&N and includes the horizontal marina components from the seawall and waterward. 30% design of the marina structures includes:

- Evaluate dock type and material alternatives for dock system based on environmental exposure and City's preferences. The results of the coastal analysis and consideration of vessel needs will inform the dock selection and final marina configuration. M&N will evaluate the suitability of floating and fixed dock types as well as the orientation of the docks based on the results of the coastal analysis. If concrete floating docks are not suitable based on the environmental exposure at the project site, alternatives will be provided to the City for review and decision. Additionally, M&N will evaluate the feasibility of a building on a floating platform to support fuel sales operations.
- Refine marina layout and detail overall dock geometry. Minor revisions to optimize the master plan layout are included.
- Prepare demolition plans for docks and dock utilities reflecting phasing.

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- Complete preliminary design of the fixed structures which are anticipated to include:
 - Pile-support gangway platforms at the marina access points. One platform design is assumed.
 - Fixed dock structure. One dock structure type (one material and typical width) is included.
 - Design of a pile supported building foundation is not included. The building, if deemed feasible given the exposure, is assumed to be attached to a floating platform. Building load criteria will be specified for final design of the platform and structural connections by the dock manufacturer.

B. Marina Utilities

Design of the marina utilities will be completed by M&N, and the scope of the marina utilities is from the seawall waterward except where specified otherwise. The marina utilities are anticipated to consist of shore power, solar lighting, CCTV, access control, communications/Wi-Fi, water, fire protection, sewage pumpout, and fuel. A utility duct bank installed landside of the seawall, if required, will be considered part of the marina utilities and included in this scope. 30% design of the marina utilities includes:

- Develop utility routing plans to initiate coordination with utilities/service providers, considering the phasing defined in the selected master plan.
- Estimate water, sewer, and fire water demands for the marina and coordinate utility requirements with upland design.
- Estimate power demands for the proposed marina slip layout and prepare a Utility Service Demand Letter as required to begin coordination with Duke Energy.
- Specify marina power requirements at each slip.
- Identify major pieces of electrical distribution equipment. Coordinate landside utility service locations and estimated footprint with the Project Team for incorporation into the overall site design. This includes coordination with the Authority Having Jurisdiction (AHJ) for utility service elevation requirements.
- Define fuel system modifications and routing. Fuel system will service dispensers on new fuel dock as well as provide fueling options for fueling the larger commercial vessels along the seawall.
- Initiate coordination with the City's preferred communications/Wi-Fi and CCTV vendors to understand their infrastructure requirements. M&N will coordinate with these vendors during the final design phase and incorporate infrastructure provisions for these services.
- Attend one site visit and up to two (2) coordination meetings with Duke Energy to discuss service size and locations. Meetings with other utility departments are included in other subtasks.

C. Civil Engineering / Landscape Architecture

Civil engineering/Landscape Architecture will be completed by Kimley-Horn and includes the horizontal components of the project landside of the seawall. 30% design of civil engineering and landscape architecture includes:

- Preliminary site grading and drainage design. Coordinate with the design team to establish desired site grades for the features identified in approved master plan.
- Preliminary design of upland water, sewer, and fire lines. Offsite utilities outside the marina parking lot are not included.
- Limited hydraulic modeling for water demand for the new marina. Estimated marina demands based on slip mix will be used in overall demand calculations.
- Collaborate with the City and make recommendations on preferred plant species for specified areas within the project limits.
- Prepare preliminary landscape/hardscape layout and a board/summary of proposed hardscape and plant palette material to be used in different zones.

D. Architecture

Architecture scope will be completed by WJA and includes the vertical elements of the project including architecture, building structural, mechanical, electrical, and plumbing (MEP). 30% design for architecture includes:

- Architecture site plan.
- Demolition plan for existing structures:
 - Overwater buildings.
 - Minor landside structures.
- Preliminary design of the vertical structures:
 - Minor renovations to existing building such as lighting upgrades and shade canopies to exterior of existing building.
 - Ticket kiosks. One ticket kiosk design is assumed (approximately 10' x 10' footprint) with minor architectural tweaks for up to 3 different locations.
 - Prefabricated shade structures.
 - Overwater fuel dock office with restroom.
- Incorporate photovoltaic elements such as solar lighting on docks and walkways and electric vehicle charging stations in the parking lot. Evaluate the feasibility of additional photovoltaic design elements such as solar panels. A simple system such as flexible peel and stick PV modules will be incorporated into kiosk or shade structure design at the 60% design stage if deemed feasible for this project. More complex systems beyond solar lighting, charging stations, and peel and stick modules will be considered additional services and can be provided in a separate scope of work.

Task II.4. Permitting

M&N and Woods Consulting will attend pre-application meetings and prepare environmental permit application packages for the marina replacement to submit to Federal, State, and Local (County) regulatory agencies, and coordinate with the regulatory agencies throughout the review process. Upon completion of the construction documents, Kimley-Horn will provide upland permitting services with the City and State for the stormwater system.

A. Environmental Permitting

- Prepare for and attend pre-application meetings and/or phone calls with the following regulatory agencies to review the project and develop a permitting strategy for the project.
 - Federal - U.S. Army Corps of Engineers (USACE)
 - State – Florida Department of Environmental Protection (FDEP)
 - Local - Pinellas County Water and Navigation Control Authority (PCWNCA)
- Attend one (1) call with the project team following regulatory meetings to review strategy and steps forward.
- Woods Consulting will prepare and submit an FDEP exemption request for the seawall-repairs/replacement and other exempt activities which are anticipated to include maintenance dredging and demolition.
- Woods Consulting will prepare permit application packages for the Federal, State, and County permitting with technical input from M&N based on established permitting strategy. Application packages will be submitted to the City for review and signature prior to submittal to agencies for review and processing.
- Prepare a temporary permit application for temporary mooring of displaced vessels during construction. This scope of work assumes the temporary mooring facility will be located within the footprint of the proposed marina facility.
- Confer with regulatory staff to further advise them of the details of the Project and to address staff comments or requests for additional information (RAIs). Woods Consulting will coordinate with M&N and the City to address technical questions, drawing/design revisions, and/or additional items that may be required by agency staff.
- Permit drawings, marine resource survey, and hydrodynamic flushing study required for environmental permitting process will be provided by the project team under Fieldwork (I.2) and Coastal Engineering (II.1) tasks. Water quality testing or other testing/surveys not known at this time are not included in this scope of work. The City will be advised of any additional scope/fees required due to unanticipated environmental impacts, design changes, or other issues.

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- The scope of this task assumes that the proposed marina footprint will be located within the City's property boundary and the total quantity of proposed slips will not exceed what is existing.
 - Submerged land lease: If the marina extends onto state owned submerged lands, a submerged land lease will be required. Submerged land lease coordination or preparation is not included in this task.
 - Protected species impact reviews: Manatee impacts and biological impact statements/minimization measures, or negotiations with USFWS are not included in this task, but will be required if expansion results in more wet slips.
- Permitting for civil utilities and stormwater, as needed, is included under other tasks.
- An allowance of \$10k has been included for environmental permitting fees for FDEP permit application fee and temporary mooring permit application fee.

B. Upland Civil Permitting

- Prepare and submit an FDEP/SWFWMDC exemption request for the proposed upland improvements.
- Prepare and submit a City of Clearwater Site Civil Permit.
- Submit application packages to the City for review and signature prior to submittal to agencies for review and processing.
- Review and respond to up to two (2) requests for information during the agency review process for obtaining the upland permits.

Task II.5. Grant Services

M&N will identify potential Federal and State grant sources for the proposed marina redevelopment. A number of funding sources, e.g. grants, are available for recreational boating facilities and other publicly accessible waterfront developments. M&N will prepare a grant matrix summarizing potential grant sources and associated application contacts, deadlines, probabilities, disbursement schedule, and requirements.

The scope of this task includes assisting the City with applications for the FDEP Clean Vessel Act grant program for public pumpout facilities (assumes current pump-out facility is not already encumbered under a CVA grant) and one (1) of the U.S. Fish and Wildlife Service boating grants; either the Boating Infrastructure Grant (BIG) Program for transient boat docks or Florida Boating Improvement Program (FBIP) grant for the public access docks which are administered by the Florida Fish and Wildlife Conservation Commission (FFWCC). These grants require a minimum 25% match by the City. If other grants are identified in the grant research portion of this task, applications for these grants may be provided under a separate scope of work.

M&N will prepare the technical writeup, construction cost estimates, and supporting exhibits for the two (2) grant applications identified above. The City is responsible for signing applications and for providing property ownership, financial, operations, and insurance information requested by grant agencies. M&N cannot guarantee a successful grant award, but will work with the Client and grant agencies to leverage project components to maximize available ranking points.

Task II.6. City Planning & Permitting

- Attend one (1) comprehensive pre-application meeting with the following City departments: Fire department, Public Utilities Department, Stormwater Engineering, building, zoning, and planning during preliminary design stage. Prepare meeting minutes following the meeting.
- Attend up to two (2) Beach by Design meetings to coordinate architectural design information and project vision.
- Attend up to two (2) Public Art meetings.
- Assumes CMAR will be responsible for obtaining other local permits such as building permits and trade permits, based on the EOR developed Construction Documents. M&N will provide technical support to CMAR including responses to requests for information and drawing revisions, as applicable. Scope includes up to four (4) requests for information from building department review.

III FINAL DESIGN PHASE:

Task III.1. 60% Submittal

The M&N team will advance the design and detailing of architectural, structural, civil, utility, and landscape components to 60% design and prepare and 60% level design documents for City review. The 60% design submittal will build from the 30% design submittal and incorporate the City's comments. The submittal will also be coordinated with the selected CMAR, and the documents will be provided to the CMAR to update the project budget. The project team will complete the following scope of work for 60% Design:

- Attend monthly meetings with the City to review project progress. M&N will prepare meeting agenda and update project design schedule prior to meetings and prepare meeting minutes following meetings.
- Update project phasing plans based on anticipated construction sequencing and CMAR budget.
- Update Design Criteria Memorandum to include the following design decisions.
 - Dock loading (dead, live, wind, berthing, etc.)

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- Environmental design parameters (wind, wave, etc.) for the design of dock structures.
 - Material Selection and finishes
 - Final marina program including spatial, environmental, and other requirements for upland support amenities and utilities.
- Prepare list of technical and performance specifications for primary project components.
- Prepare 60% construction drawings for City review and comment based on 30% design layout. The following drawings are anticipated for all disciplines:
 - Coversheet and Index of Drawings
 - General Notes
 - General Arrangement Plan
 - Phasing Plans
 - Existing Conditions Plans
 - Demolition Plans, Sections, and Details
 - Demolition Plan and Details
 - Overall Site Plan
 - Maintenance dredge Plan, Notes, and Sections
 - Dredged Material Disposal Plan and Containment Area Details
 - Overall Marina Structural Plan
 - Seawall repair Plans, Sections, and Details
 - Enlarged Marina Plans
 - Dock Sections and Details
 - Electrical Plans, Notes, Details, Single Line Diagrams, and Schedules
 - Marina Utility Routing Plans
 - Marina Potable Water, Fire Water, and Sanitary Plans, Notes, and Details
 - Fuel System Modification Plans and Details
 - Grading and Drainage Plans and Details
 - Stormwater Pollution Prevention Plans
 - Onsite Utility Plans and Details
 - Site Hardscape Plan and Details
 - Landscape Development Plan and Details
 - Lighting Plans, Details, and Luminaire Schedules
 - Irrigation Head Layout and Details
 - Architectural Site Plan and Details
 - Diagrammatic Layouts for Building Systems
 - Building Plans, Sections and Elevations
 - Photovoltaic Plan and Details
- Update EOPCC for 60% design stage.

A. Marina Structures

60% design of the marina structures includes:

- Progress dock layout and detailing to 60% level including locating primary dock equipment and appurtenances such as pedestals, gangway landings, seating, fishing cleaning stations, dock boxes, cleats, ladders, life rings, etc.
- Develop performance criteria for floating dock marina to be incorporated in the technical and performance specifications in the final design phase.
- Complete 60% design of the fixed gangway platforms and dock structures.
- Following approval of the FDEP exemption, M&N will complete final design of the seawall repairs, maintenance dredging, and demolition. These project elements will be detailed to 100% construction document level to allow construction to commence.

B. Marina Utilities

60% design of the marina utilities includes:

- Update the utility demands for potable water, fire protection, sewage pump-out, and electrical loads for the marina utilities.
- Progress utility routing to 60% level design and size major dock equipment such as pedestals, pipes, conduits, etc.
- Develop hydraulic models of utility systems and hydraulic calculations to validate sizing of proposed water, sewer, and fire water systems. The utility demand for the marina utilities will be provided to the upland civil engineer (Kimley-Horn) who will coordinate the utility connections with the City.
- Coordinate with pump-out vendors to size an appropriate system for the design vessels. Coordinate sewer and pump out connections for overwater restroom associated with fuel sales building.
- Design fire protection system in accordance with NFPA 303 and NFPA 14. The design is anticipated to consist of a Class 1 manual dry or wet standpipe system with one or more fire department connections (FDC) located landside.
- Calculate electrical equipment sizes/ratings. Electrical distribution is assumed to be at 480V, 3Phase. Additional utilization voltages (120/240V, 208Y/120V) will be transformed, as required.
- Define dispenser locations, routing, and general performance requirements for fuel system modifications. The fuel system will be a performance specified system for a fuel vendor to complete the final engineering design and installation.
- Design utility duct bank landside of seawall, if required.

C. Civil and Landscape

60% design of the civil engineering and landscape architecture includes:

- Progress grading, drainage, onsite utility, irrigation, and landscape design to 60% level.
- Progress planting plan to include different plant palettes for use in the various zones as requested by the Client. The planting plan will identify canopy trees, accent/flowering trees, palms, and areas of shrubs and groundcover and include rough spacing and quantities.
- Prepare a stormwater pollution prevention plan.

D. Architecture

60% design of architecture includes:

- Progress architectural and building design to 60% level to illustrate and describe the development to 60% design.
- Prepare diagrammatic layouts of building systems necessary to convey the character of the project.
- Progress photovoltaic integration design including PV system performance, solar panels, inverter specification, and PV A/C integration.

Task III.2. Final Design & Construction Documents

The M&N team will complete the final design and detailing of architectural, structural, civil, utility, and landscape components and prepare draft-final (90% level) and final (100%) construction documents. The final design will incorporate City comments from 60% submittal and build on the approved master plan. The design will be coordinated with the selected CMAR and the documents will be provided to the CMAR to finalize their construction budget. The construction documents will include a combination of drawings, technical specifications, and performance specifications detailing final dock geometry, facility function design requirements, final utility routing, civil grading/drainage, final landscape/hardscape, and architectural details as outlined below. The project team will complete the following scope of work for final design:

- Attend monthly meetings with the City to review project progress. M&N will prepare meeting agenda and update project design schedule prior to meetings and prepare meeting minutes following meetings.
- Finalize project phasing plans based on anticipated construction sequencing and CMAR budget.
- Finalize Design Criteria Memorandum with final performance requirements, material selections, finishes, etc.
- Prepare technical and performance specifications for primary project components.
- Prepare construction drawings at draft (90%) and final (100%) level design for City review and contractor pricing. Upon approval of final construction drawings, provide signed/sealed drawings for City permitting and construction.

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- One comprehensive drawing set with Marine Structural, Marina Utilities, Civil, Landscape, Irrigation, Architectural, Building Structural, and MEP will be provided for entire project including phasing. CMAR is responsible for separating the disciplines as desired for bidding to qualified contractors.
- Update EOPCC at 90% and 100% design stages.

A. Marina Structural [M&N]

Final design of the marina structures includes:

- Prepare performance specifications for a floating dock vendor to complete the final engineering design of the floating docks, floating building platform (if applicable), and gangways based on the selected system of floating docks. Drawings will detail overall geometry, ADA compliant access, and location of utilities and appurtenances. Performance Specifications will incorporate data from design criteria memorandum, final material selections, and requirements for the dock restraint system (i.e. guide piling).
- Complete final design and detailing of the fixed structures.

B. Marina Utilities [M&N]

Final design of the marina utilities includes:

- Complete final design of the marina electrical system including shore power to each boat slip, security level lighting on docks, and required electrical distribution equipment. Design will include infrastructure provisions for vendor supplied systems such as CCTV, Wi-Fi, and access control in the marina construction documents. These systems will be selected and integrated into the marina management system by the City.
- Complete final design of potable water, sewage pump-out, fuel, and fire protection systems for the marina. Prepare final hydraulic calculations to validate sizing of proposed utility systems.

C. Civil and Landscape [KH]

Final design of the civil engineering and landscape architecture:

- Complete final design of the grading and drainage components.
 - Driveways, parking lots, sidewalks, bike lane, and roadway improvements, as applicable. Staking information and dimensions will be provided to assist the contractor in site layout and provide horizontal control of the proposed improvements.
 - Signage and Striping.
 - Spot elevations in critical areas, proposed contour lines interpolated between spot elevations, and building pad finished floor elevations will be shown within

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the proposed grading plan. Storm drainage pipes and stormwater management facilities will be sized and specified in accordance with City requirements.

- Prepare final stormwater Pollution Prevention Plans per State and City requirements. The location and identification of specific erosion and sediment control measures, or Best Management Practices (BMPs) will be delineated within the plans and will include proposed grading and drainage improvements. Additional measures may be required during various phases of construction.
- Complete final design of the onsite water and sewer utilities to connect marina potable water, sanitary sewer, and fire water systems to the City's water and sewer main. Drawings will contain horizontal and vertical (sanitary sewer) information of the proposed system, as well as the City's typical standard utility details and specifications.
 - The proposed water and sewer utilities will be designed in accordance with the current Florida Department of Environmental Protection and City requirements. The water service to existing and/or future buildings is not included in this task. It is assumed that no new lift station will be required.
 - Final design of fire water line includes hydrant and marina FDC, sized using water demands calculated by M&N in marina utilities task. Fire water design does not include building fire protection.
- Complete final planting plan and tree mitigation plan. Tree mitigation plan will include tree mitigation notes, specifications and tree protection fencing limits and details.
- Prepare final irrigation plan identifying locations and types of equipment and materials including mainline, lateral lines, valve boxes, controllers, spray heads and drip tubing.
- Complete final design of hardscape, miscellaneous site structures, and amenities and incorporate details provided by the Architect into final landscape architectural drawings. Hardscape and amenity details are anticipated to include:
 - Pavers, concrete, decorative concrete or similar for pedestrian and vehicular areas.
 - Site furnishings and installation details
 - Utility slab foundations
 - Stairs, Seat walls and low retaining walls
 - Fences and railings
- Prepare lighting concept package, design narrative, electrical site plan, and luminaire schedule with images of proposed fixture types in coordination with the Client and the overall project design aesthetic.

D. Architecture [WJA]

Final design of architecture includes:

- Complete final architectural and building design and prepare detailed construction drawings and specifications that describe requirements for construction of the work. Final design does not include life cycle cost, energy analysis (FLEET), or LEED consultation.
- Prepare diagrammatic layouts of building systems necessary to convey the character of the project.
- Define signage for wayfinding and commercial slips. Commercial slip signage is assumed to include one typical design in accordance with City code. Scope includes coordination with one (1) signage company.

IV BIDDING PHASE:**Task IV.1. CMAR RFQ Support**

The Project Team will assist the City during the CMAR selection process. It is assumed that the City will lead this process with the following technical input from the Project Team:

- Provide list of qualified construction managers and marine contractors
- Prepare scope of work description for RFQ
- Review contractor qualifications section and recommend edits, if needed
- Provide responses to requests for additional information pertaining to the technical scope of work during the RFQ period.

3. PROJECT GOALS:

- Meeting minutes in MS Word and PDF format
 - 1 Kick-off meeting
 - 12 City project progress meetings (monthly)
 - 7 stakeholder outreach meetings and work sessions.
- Fieldwork:
 - Geotechnical Report (signed and sealed) in PDF format
 - Marine Resource Survey in PDF and CAD format
 - Utility Assessment Memorandum in PDF format
- Marina Market Analysis Report in PDF format
- Marina master plan and renderings in PDF format
- Concept level EOPCC based on Master Plan in PDF format
- Design Criteria Memorandum in PDF format
- 30% Submittal (drawings) in PDF format

- 30% EOPCC in PDF format
- Permit Application Packages in PDF format
- Grant Applications in PDF format
- 60% Submittal (drawings, list of specifications) in PDF format
- 60% EOPCC in PDF format
- 90% Submittal (drawings, specifications) in PDF format
- 100% Construction Documents (drawings, specifications) in PDF format
- 100% Construction Documents (signed & sealed) in Hard Copy (Arch D, 5 copies)
- 100% EOPCC in PDF Format
- CMAR RFQ Scope Narrative in MS Word and PDF format

4. FEES:

See Attachment "A".

This price includes all labor and expenses anticipated to be incurred by Moffatt & Nichol for the completion of these tasks in accordance with Professional Services Method "B" – Lump Sum – Percentage of Completion by Task, for a fee not to exceed One Million Four Hundred Eighty-Four Thousand, One Hundred Seventy-four Dollars and Fifty Cents (\$ 1,484,174.50).

The permit application fees will be paid by the consultant and invoiced to the City as a reimbursable.

5. SCHEDULE:

The project is to be completed in 12 months from issuance of notice-to-proceed. The project deliverables are to be phased as follows:

Master Plan:	70 calendar days
30% Submittal:	84 calendar days
Permit applications:*	14 calendar days
60% Submittal:	84 calendar days
90% Submittal:	84 calendar days
Final Construction Documents:	28 calendar days

*Permitting review/approvals are not included in this schedule. The permit applications will be used to initiate the environmental permitting process; however, duration of this process varies by project and agency reviewer and is outside of the Consultants' control.

6. STAFF ASSIGNMENT:

Consultant Team

Moffatt & Nichol (M&N) – Project management, marina planning and design, coastal engineering, marine structural engineering, marina utility (mechanical, plumbing, electrical) engineering.

Wannemacher Jensen Architects (WJA) – Architecture and building S/MEP.

Kimley-Horn and Associates (KH) – Civil engineering, landscape architecture, onsite utility engineering

Woods Consulting (Woods) – Environmental Permitting

Driggers Engineering Services (DESI) – Geotechnical engineering

City of Clearwater Staff:

Jeff Walker, P.E. Project Manager

Ed Chesney, P.E. Marine & Aviation Director

7. CORRESPONDENCE/REPORTING PROCEDURES:

Consultant's project correspondence shall be directed to:

Moffatt & Nichol

501 E. Kennedy Blvd, Suite 1910

Tampa, FL 33602

813.258.8818

Project Manager

Nicole Pauly, P.E.

npauly@moffattnichol.com

305.393.1939

Project Director

Michael Herrman, P.E.

mherrman@moffattnichol.com

813.463.4423

All City project correspondence shall be directed to:

Jeff Walker, P.E.

100 S. Myrtle Ave.

Clearwater, FL 33756

727.562.4827

Jeff.Walker@myclearwater.com

With copies to others as appropriate.

8. INVOICING/FUNDING PROCEDURES:

City Invoicing Code: _3327332-530100-C1905

For work performed, invoices shall be submitted monthly to:

**City of Clearwater
Engineering Department
Attn: Brooke Freeman, Accountant
PO Box 4748
Clearwater, Florida 33758-4748.**

Contingency services will be billed as incurred only after written authorization provided by the City to proceed with those services.

9. INVOICING PROCEDURES:

At a minimum, in addition to the invoice amount(s) the following information shall be provided on all invoices submitted on the Work Order:

1. Purchase Order, Project and Invoice Numbers and Contract Amount.
2. The time period (begin and end date) covered by the invoice.
3. A short narrative summary of activities completed in the time period.
4. Contract billing method – Lump Sum or Hourly Rate.
5. If Lump Sum, the percent completion, amount due, previous amount earned and total earned to date for all tasks (direct costs, if any, shall be included in lump sum amount).
6. If Hourly Rate, hours, hourly rates, names of individuals being billed, amount due, previous amount earned, the percent completion, total earned to date for each task and other direct costs (receipts will be required for any single item with a cost of \$50 or greater or cumulative monthly expenses greater than \$100).
7. If the Work Order is funded by multiple funding codes, an itemization of tasks and invoice amounts by funding code.

10. CONSIDERATIONS:

Consultant acknowledges the following:

1. The Consultant named above is required to comply with Section 119.0701, Florida Statutes, where applicable.
2. All City directives shall be provided by the City Project Manager.

3. "Alternate equals" shall not be approved until City Project Manager agrees.
4. All submittals must be accompanied by evidence each has been internally checked for QA/QC before providing to City.
5. Consultants/Contractors are not permitted to use City-owned equipment (i.e. sampling equipment, etc.).
6. Documents posted on City website must ADA accessible.

11. ADDITIONAL CONSIDERATIONS:

All work orders should include considerations for the following:

1. Sea Level Rise and Flood Resilience, as applicable.
2. Submittal of a Critical Path Method (CPM) Schedule(s).
3. Submittal of a Project Catalog with the following items, as appropriate:
 - a. Data requests, assumptions, critical correspondence, meeting agenda, sign-in sheets, meeting minutes, document comment-response log(s), technical memorandum/reports, addenda, progress reports, regulatory correspondence, and other project-related documents.
 - b. If construction project, also include design plans, conformed plans, change orders, field orders, RFIs, work change directives, addenda, progress reports, shop drawing and progress submittals, as-builts, record drawings, and other project-related documents such as O&M manuals and warranty information.
 - c. At the conclusion of the project, ENGINEER will combine this information into a Project Catalog and submit to the City for review and comment.
4. Arc Flash labeling requirements:
 - a. All electrical designs and construction shall adhere to NFPA 70 E "Standard for Electrical Safety in the Workplace".
 - b. Updated calculations of Fault and Arc Flash, and provisions for new or updated Arc Flash equipment labeling shall be included in the contract documents.

12. SPECIAL CONSIDERATIONS:

The M&N Team does not issue environmental or construction permits and cannot control agency permit review and issuance timelines. The project schedule is predicated on assumed agency responsiveness but delays due to permitting agency processing are outside of the Consultants' control.

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13. SIGNATURES:

PREPARED BY:

APPROVED BY:

Michael Herrman, P.E.
Vice President
Moffatt & Nichol

Tara Kivett, P.E.
City Engineer
City of Clearwater

Date

Date

ATTACHMENT "A"**CONSULTANT WORK ORDER – PROJECT FEES TABLE**

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CONSULTANT WORK ORDER

PROJECT FEES TABLE

Task	Description	Subconsultant Services	Labor	Total
1.0	Pre-Design			
1.1	Project Kick-off	\$ 7,843.00	\$ 11,274.00	\$ 19,117.00
1.2	Fieldwork	\$ 91,718.00	\$ 5,264.00	\$ 96,982.00
1.3	Utility Assessment	\$ -	\$ 17,148.00	\$ 17,148.00
1.4	Marina Market Analysis	\$ -	\$ 13,996.00	\$ 13,996.00
1.5	Master Planning	\$ 94,303.00	\$ 50,532.00	\$ 144,835.00
1.6	Public Outreach	\$ 20,817.50	\$ 22,576.00	\$ 43,393.50
Pre-Design Total:				\$ 335,471.50
2.0	Design			
2.1	Coastal Engineering	\$ -	\$ 42,386.00	\$ 42,386.00
2.2	Seawall Repair Permit Drawings	\$ -	\$ 34,932.00	\$ 34,932.00
2.3	30% Submittal	\$ 75,212.50	\$ 115,822.00	\$ 191,034.50
2.4	Permitting	\$ 64,768.00	\$ 31,690.00	\$ 96,458.00
2.5	Grant Services	\$ -	\$ 23,832.00	\$ 23,832.00
2.6	City Planning & Permitting	\$ 20,471.00	\$ 10,032.00	\$ 30,503
Design Total:				\$ 419,145.50
3.0	Final Design Plans and Specifications			
3.1	60% Submittal	\$ 69,162.50	\$ 176,892.00	\$ 246,054.50
3.2	Final Design & Construction Documents	\$ 97,471.00	\$ 224,268.00	\$ 321,739.00
Final Design Plans and Specifications Total:				\$ 567,793.50
4.0	Bidding			
4.1	CMAR RFQ Support	\$ 15,741.00	\$ 11,098.00	\$ 26,839.00
Bidding Services Total:				\$ 26,839.00
SUBTOTAL, LABOR, AND SUB-CONTRACTORS				\$ 1,349,249.50
5.0	Contingency (~10% project budget)			\$ 134,925.00
GRAND TOTAL				\$ 1,484,174.50

ATTACHMENT "B"

CONSULTANT WORK ORDER – CITY DELIVERABLES

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CITY DELIVERABLES

1. FORMAT:

The design plans shall be compiled utilizing the following methods:

1. City of Clearwater CAD standards.
2. Datum: Horizontal and Vertical datum shall be referenced to North American Vertical Datum of 1988 (vertical) and North American Datum of 1983/90 (horizontal). The unit of measurement shall be the United States Foot. Any deviation from this datum will not be accepted unless reviewed by City of Clearwater Engineering/Geographic Technology Division.

2. DELIVERABLES:

The design plans shall be produced on bond material, 24" x 36" at a scale of 1" = 20' unless approved otherwise. Upon completion the consultant shall deliver all drawing files in digital format with all project data in Autodesk Civil 3D file format.

NOTE: If approved deviation from Clearwater CAD standards are used the Consultant shall include all necessary information to aid in manipulating the drawings including either PCP, CTB file or pen schedule for plotting. The drawing file shall include only authorized fonts, shapes, line types or other attributes contained in the standard release of Autodesk, Inc. software. All block references and references contained within the drawing file shall be included. Please address any questions regarding format to Mr. Tom Mahony, at (727) 562-4762 or email address Tom.Mahony@myClearwater.com.

All electronic files (including CAD and Specification files) must be delivered upon completion of project or with 100% plan submittal to City of Clearwater.