



**HUMISTON
& MOORE
ENGINEERS**

COASTAL
ENGINEERING DESIGN
AND PERMITTING

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FAX: 239 594 2025
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November 11, 2025

Sent via E-mail

Justin Martin, P.E.
Director, Public Works
City of Marco Island
1310 San Marco Rd.
Marco Island, FL 34145

**Regarding: Review of The Coastal Habitat and Water Quality (C-HAWQ) Initiative
Unsolicited Public-Private Partnership Proposal / HM File No. 33-002**

Dear Justin,

In accordance with section 255.065(3)(a)5., F.S., Humiston & Moore Engineers (Humiston and Moore) was retained on behalf of the City of Marco Island to provide professional review and evaluation of the C-HAWQ Unsolicited P3 Proposal. Section 255.065(3)(a)5., F.S. states, "If the responsible public entity chooses to evaluate an unsolicited proposal involving architecture, engineering, or landscape architecture, it must ensure a professional review and evaluation of the design and construction proposed by the initial or subsequent proposers to assure material quality standards, interior space utilization, budget estimates, design and construction schedules, and sustainable design and construction standards consistent with public projects. Such review shall be performed by an architect, a landscape architect, or an engineer licensed in this state qualified to perform the review, and such professional shall advise the responsible public entity through completion of the design and construction of the project."

This review is performed in advance of an Interim Agreement or Comprehensive Agreement contemplated in section 255.065(6) and (7), F.S. respectively.

Humiston & Moore, with subcontractor Turrell, Hall & Associates and Gunster, reviewed the C-HAWQ Unsolicited P3 Proposal and summarized questions in a letter dated July 17, 2025. On September 3, 2025, Humiston & Moore met with City staff and the C-HAWQ proposer team to discuss the questions and C-HAWQ proposer's responses. On

September 11, 2025, C-HAWQ proposer provided those responses to the City and Humiston & Moore. The Proposal and the September 11, 2025, responses have been reviewed, and Humiston & Moore offers the professional review and evaluation of the C-HAWQ proposal below, in accordance with section 255.065(3)(a)5., F.S.

I. The C-HAWQ Proposal Provides Some Assurance of Material Quality Standards, but the Information Provided Is Incomplete.

The basis of the proposal is to use locally sourced dredged material from canals to create spoil islands scattered throughout the Marco Island Canal system. Creating the islands within the canals would allow for less expenses associated with the transportation and disposal of the dredged material because the islands are proposed in the locations relatively nearby where the dredging is to occur and the dredged material would not have to be transported away and disposed of at an off-site location. The Proposal would also create what the proposal calls living shorelines within the canals. Both of these efforts (dredging and shoreline creation) are aimed at improving water quality within the Marco Island canal system. Materials to be used in the project will include dredged material from the canals, sand, vinyl sheet piles, riprap, and plantings.

- The proposal does not provide a lot of specific details about the materials proposed, but the types of construction materials (vinyl seawall, riprap, plant types) discussed are consistent with the types of materials expected for a public project.
 - Sand and sediment quality remain outstanding questions. The sediment from the canals has not been characterized at a scale to understand the material quality and stability. The project includes capping the islands with sand, but the source, volume, material availability and cost were not specified, other than that no outside material will be brought in.
 - The proposal makes a general assumption that all of the dredge material will be suitable for the islands' creation. There does not appear to have been a lot of comprehensive testing to determine if this is a valid assumption. If the dredged material is not suitable for island creation, the proposal does not explain the cost or disposal location for unsuitable materials.
- Questions were raised by the review team about the applicability of mechanical dredging as opposed to hydraulic dredging to meet the project intent of removing organic sediments from the canals. Organic sediments are often very fluid and not easily collected with standard mechanical dredging techniques. The proposer's response was that hydraulic dredging was impractical. Specific methods of dredging and containment of the fluid material will need to be clarified. The

proposal will need to detail how the material excavation and disposal will be managed without impact and spreading fine sediment to adjacent areas both at the removal and disposal ends of the operation.

- The proposal states that no outside material will be brought in but responses to questions mention capping of the islands with sand which may need to be imported, along with the rip rap. Clarification as to the source of the sand and rip rap will need to be provided.

II. The Budget Estimate Presented Is a Not-to-Exceed Cost With Little Few Details to Provide Assurances.

The proposal states that the proposer is taking financial responsibility for the design and permitting costs associated with the proposed project.

- Design and construction will be C-HAWQ's responsibility. The "not to exceed" cost is stated as \$60 million. There is no detail in the proposal as to how that amount was determined.
- The City will have to commit to a pre-agreed funding amount or percentage. There is no detail on how this amount will be determined or if it will be consistent with the requirements of grants which have not yet been obtained or applied for.
- With respect to payments, the proposal outlines a 1% retention of payment amounts until completion. This is a lower retention rate industry standard for dredging and marine related construction projects. A minimum of 5% should be considered.
- Long-term operation and maintenance costs will be the City's responsibility. No budget or cost estimate was provided, other than a narrative explaining that long term operation and maintenance costs are expected to be minimal for the mangrove islands because once the native vegetation is established it requires little maintenance. Consideration as to the performance and stability of the shoreline stabilization through use of vinyl sheet piling will need to be considered. A multi-year monitoring and maintenance of the performance and stability of the islands should remain the responsibility of the proposer.
 - Costs to consider for long term operation and maintenance include maintenance of the vinyl sheet piling, vegetation maintenance, post-hurricane or tropical event inspection and repair, and future canal dredge maintenance.

III. Design and Construction Schedules Have Been Proposed Generally, but Detail Will Be Unclear Until the Permit Design and Means and Methods Are Fully Proposed.

Design and construction schedules were provided generally, with one to two years for design and permitting and two years for dredging and island construction, one year for planting the islands, and three years of post-construction island vegetation monitoring.

- For the scale of the project, the design and permitting timeframe appears optimistic but potentially achievable depending on the location of the islands, if they will be on state lands or privately owned submerged lands. If on state land, easements will be required from the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida.
- The proposed timeframe of three years for island creation and vegetation planting appears feasible.
 - Canal dredging will be occurring at the same time as island creation.
- Monitoring requirements from agencies often requires five years of monitoring and reporting. With the proposer only proposing three years of post-construction island vegetation monitoring, the City could be required to be responsible for the remaining two years, in addition to long-term operation and maintenance costs.

Note that these timeframes appear to be best case scenario construction timeframes given the proposed number of canals, equipment proposed, and the construction of the islands. This will be dependent on the means and methods and geotechnical conditions impacting vinyl sheet piling installation.

IV. Assurance of Sustainable Design and Construction Standards Consistent with Public Projects Is Unclear Due to the Conceptual Nature of the Proposal.

The design is conceptual. In general, the concept of dredging the canals and creating mangrove islands from the dredged material could work to reduce nutrient levels within the canals. However, the proposal assumes a lasting water quality benefit from the work that cannot be guaranteed. There are not any other like-kind projects that we are aware of that could be used to verify long-term benefits of this type of project. Some of the questions that need to be answered to determine if this project has a sustainable design and benefit include:

- Will the dredging make the flushing of the canals worse? Deepening the canals could reduce the already low flushing capacity of the canals which could result in accumulation of new sediments in a shorter time frame. Deepening dead-end canals is typically a regulatory concern due to impacts on flushing.

- Additional organic material will be placed in the canals with the establishment of the plantings. Will the islands add to the bioaccumulation of sediment/nutrients in the canals? This could be through deposition of vegetative material or attracting wildlife (birds) into the canals that are not currently present.

V. Conclusion

The review team recognizes the environmental challenges that are facing the City of Marco Island and the proposer's efforts to contribute to improving water quality in the City's canals. Removing part of the bottom sediment in the existing canals and repurposing the sediment to create living shoreline islands could be beneficial to water quality within the canal system. However, the provided proposal and the responses to the review team requests for additional information do not provide adequate information to assess the project beyond a conceptual review.

Questions remain about the potential benefits versus risks and the viability of implementing the project. The proposer indicated that many of the questions raised by the review team will be addressed during the permitting process.

The following items are listed to summarize the basis for the above conclusion:

1. **Design concept:** the design concept as presented is based on potential for water quality improvement within the Marco Island canals. However, the proposal does not provide quantitative analysis of the expected water quality improvement and its sustainability post construction.
2. **Water Quality objective:** The role of bottom sediment on water quality in Marco Island canals is only one of several factors influencing water quality and Marco Island ecosystem. Water quality objectives may need to be set to assess various feasible design concepts prior to implementation of large-scale solutions as proposed.
3. **Alternatives analysis:** The proposed concept needs to be evaluated among other feasible alternatives to address stated objectives. Capping the canal bottoms and the spoil islands with clean sand and hauling dredged material out of the canal to off-site locations is not assessed in the proposal. These are likely permitting conditions and may significantly alter the estimated costs.
4. **Aesthetics and public interest:** the proposed concept relies on creation of disposal islands within the canal system that will alter the views of existing properties. Obtaining residents' agreement on proposed islands might be needed to proceed to implementation. State permits are subject to review by affected parties and may be challenged. Should affected property owners challenge the state permit, there

will be administrative, professional and legal fees necessary to defend the permit as well as time delays.

5. **Demonstrated successful precedents:** At this conceptual phase, there are not adequate details to assess potential benefits and risks. The lack of precedents in similar environment or implementation expertise in the provided proposal adds to the uncertainty on the effectiveness and residents' acceptance of the proposed concept. Successful precedents in similar environments, small scale pilot projects and adaptive phased projects are among viable paths to minimize risks and demonstrate potential successful implementation.

On behalf of the professional review team, we appreciate the opportunity to provide this review.

Sincerely yours,

HUMISTON & MOORE ENGINEERS

Mohamed Dabees, Ph.D., P.E., BC. CE.

Attachments:

- Attachment A: Review Team Qualifications
- Attachment B: HM Preliminary Review with Questions to the Proposals
- Attachment C: CHAWQ Responses to Preliminary Review

Attachment A

Review Team Qualifications



TURRELL, HALL & ASSOCIATES, INC.

Marine & Environmental Consulting

TIMTHOY HALL, PRINCIPAL ECOLOGIST

Tim Hall is Vice President of Turrell, Hall & Associates, Inc., and is also the Senior Ecologist for the firm. Tim works closely with federal, state, and local agencies to obtain approvals for private, state, federal and local municipal projects. Tims projects have varied from environmental oversight of the 55,000-acre Picayune Strand Restoration (CERP) Project, managing the restoration of the 500-acre Clam Bay Ecosystem for 18 years, overseeing restoration in the Big Cypress National Park, permitting new mining projects, permitting the new Naples Pier, and assisting smaller landowners with navigating permit and compliance related issues. He has also permitted the relocation of hundreds of gopher tortoises and burrowing owls on Marco Island over the past 27 years.

Tim has held positions on the Naples Botanical Garden Board while helping them find their current location and permitting their existing facilities, and the Florida Chapter of the National Wildlife Society Board.



TURRELL, HALL & ASSOCIATES, INC.

Marine & Environmental Consulting

MARIELLE NAGEON DE LESTANG, SENIOR BIOLOGIST

Marielle Nageon de Lestang has been a biologist, compliance officer and Operations Manager for Turrell, Hall & Associates, Inc. since 1997. Marielle is primarily responsible for the oversight of project preserve, permit, and Sovereign Submerged Lands Lease compliance, mitigation monitoring and reporting, and permitting project management. Marielle has also been the primary marine resource surveyor for the firm both in Florida and the Bahamas performing inland marine and coastal investigations. Much of the past eight years have been spent studying, collecting data for, and reporting on submerged aquatic vegetation and water quality on Marco Island, as well as overseeing dredge projects, turbidity monitoring and compliance reporting to state and federal agencies.

From 2013 to 2020, Marielle was a governor appointed member of the Big Cypress Basin Board of the South Florida Water Management District. Assisting the Basin with water management and budgetary considerations for the 143 miles of canal systems and 35 water management structures in Collier County.



DEBORAH MADDEN | ENVIRONMENTAL LAW ATTORNEY

Debbie Madden focuses her practice in the area of environmental law. Deborah represents a broad range of clients, including developers, agricultural interests, utilities, mining interests, and public and private companies. Deborah brings extensive experience to providing legal support for client permitting and litigation matters involving water resources, wetlands, water supply, state and federal listed species issues, mitigation banking, state submerged lands and coastal construction. She represents clients in court proceedings and before administrative law judges on a variety of environmental permitting, compliance and regulatory claims issues.

Deborah also advises on the environmental issues that permeate mergers and acquisitions and real estate and other business transactions. This includes pre-acquisition due diligence and post-acquisition compliance. She provides legal counsel regarding solid and hazardous waste regulation and real property contamination investigation and cleanup, including the application of risk-based corrective action principles, environmental due diligence, and related considerations associated with the transfer of contaminated properties, brownfield redevelopment and storage tank regulation.



MOHAMED DABEES, PH.D., PE., BC. CE., COASTAL ENGINEER

Mohamed Dabees is Vice President of Humiston & Moore Engineers in Naples, Florida. He holds a Ph.D. in Civil Engineering from Queens University (2000), complemented by two master's degrees in civil engineering and engineering management from Drexel University (1995).

Dr Dabees is a board certified and licensed professional engineer and Distinguished as a Board-Certified Coastal Engineer (D. CE) by the Academy of Coastal, Ocean, Port and Navigation Engineers, alongside his Professional Engineer (PE) licensure in Florida. He Commands over 30 years of experience in coastal engineering and management, with a consistent 25-year tenure as a Vice President and Senior Engineer at Humiston & Moore.

Dr Dabees is recognized as an expert in coastal engineering and management, specifically for his pioneering work in Coastal Resiliency Planning and the strategic application of Engineering with Nature (EWN) for enhanced storm risk management. His work is documented through publications in reputable journals and features in books and articles including the US Army Corps of Engineers' Atlas on Engineering with Nature and Architectural Record. His expertise includes designing adaptive solutions for barrier islands and urban areas facing increasing coastal flooding vulnerability and storm intensification due to rising sea levels, leveraging the latest IPCC scenarios. DR Dabees is also recognized for his contributions to numerical modeling application in coastal engineering.

Attachment B

Preliminary Review Questions



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Justin Martin, P.E.
Director, Public Works
City of Marco Island
1310 San Marco Rd.
Marco Island, FL 34145

**Regarding: Preliminary Review of The Coastal Habitat and Water Quality (C-HAWQ) Initiative
Unsolicited Public-Private Partnership Proposal HM File No. 33-002**

Dear Justin,

Please consider this letter and attachments as a preliminary review of the referenced proposal presented to the City of Marco Island by C-HAWQ. Humiston & Moore Engineers is pleased to team up with Turrell Hall and Associates and Gunster to provide the technical, environmental and legal review necessary to assess the referenced proposal. Brief biographies of the review team is provided in **Attachment A**.

The City of Marco Island is a unique barrier island as it is situated in an estuary surrounded by the undeveloped land of Rookery Bay National Estuarine Research Reserve and the Ten Thousand Islands Aquatic Preserve. The intersection between a fluvial wetland system and an open gulph is crucial in the transfer of nutrients, creating an ecosystem lush with diversity. The discharge of nutrients from upland river systems into the Marco Bay estuary has impacts on the water quality and subsequently the health of ecosystem. The City of Marco Island further adds complexity to the otherwise largely undeveloped environment of Marco Bay. The island is highly developed, with 74.9% being medium and high density residential or commercial land use zoning. Throughout the island there is a maze of boating canals; water quality throughout the island shows TN concentrations above the Florida Department of Environmental Protection (FDEP) Numerical Nutrient Criteria (NNC), which has also been set as the city limit. The water quality within Marco Island and its surrounding waters are codependent and variable, making environmental conservation difficult. Coupled with the occurrence of coastal erosion and storm surge occurrences that contribute to the influx of urban runoff onto the ecosystem.

Concepts for engineering with nature and nature-based features to enhance the environment and improve resiliency to storms can provide pathways to sustainable planning. The referenced proposal provides a conceptual design for constructing nature-based features in the form of spoil-islands for degraded materials from Marco Island canals. The dredging and disposal of the nutrient laden sediment from the Marco canals is intended to improve water quality by reducing nutrients input into the system. The spoil islands are intended to positively contribute to the ecosystem. The design concept plans to separate the nutrients laden sediment from the river flow by sheet pile perimeter and natural armor stone. The spoil islands are planned to mimic the natural setting by small islands with mangrove and native vegetation.

However, the information provided in the report provided does not provide site specific technical analysis that would substantiate the validity of the proposed environmental benefits and the socioeconomic impacts for a project of such scale.

At this preliminary review stage, the review team has compiled a listing of questions provided in **Attachment B** to assist in the validity of the concept, evaluate short- and long-term benefits/ impacts of the ecosystem and examine the likelihood of environmental permitting and supporting public interest.

We appreciate the opportunity to provide these comments and questions.

Sincerely yours,

HUMISTON & MOORE ENGINEERS



Mohamed A. Dabees
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Mohamed Dabees, Ph.D., P.E., BC. CE.

Attachments:

- **Attachment A:** Review Team Qualifications
- **Attachment B:** Preliminary Review Questions

PRELIMINARY QUESTIONS ON C-HAWQ INITIATIVE PROPOSAL

July 17, 2025

Prepared by: Humiston & Moore Engineers, Turrell, Hall & Associates, Inc., and Gunster

I. Work Experience and Qualifications of Proposer

1. Based on the work experience section of the proposal it does not appear that similar design work or permitting has been done by the proposer. Who would be performing those tasks? Is the proposer planning on contracting with local firms for that expertise?
2. A detailed plan and schedule should be included in the proposal.
3. It is unclear how the provided examples – Peanut Island, Palm Beach County, Florida, Poplar Island, Chesapeake Bay, and Marker Wadden, Markemeer, Netherlands – are applicable to the proposal. Please clarify whether there is an example in the state of Florida of this type of project, and if not, a pilot project should be considered in the proposal to demonstrate the means, methods, function and performance.
4. The proposal needs to include demonstrated ability to assess the effects of the proposed plan on hydrodynamics, sediment transport, water quality and flushing of the bays, lagoon, riverbanks and canals within the system. Please provide the qualifications and experience in numerical modeling of hydrodynamics, flushing and water quality assessment.
5. The proposal needs to include listing and qualifications of key personnel and their roles in the various phases of the project design, permitting, management and implementation.

II. Technical Design and Effects on Hydrodynamics and Ecosystem:

1. Identify the means and scientific methods proposed for the technical analysis, evaluation of alternatives and design of the recommended plan.
2. Define the area of influence of the proposed plan and the surface water circulation characteristics with and without the proposed plan.
3. Evaluate the flow and flushing within the system using numerical modeling.
4. Assess the impacts of the canal dredging on flushing time within the system
5. Assess the impacts of the constructed islands on flow patterns, increased velocities, scour potential and stability of the islands and the adjacent shorelines.
6. Evaluate the sediment containment within the proposed islands and evaluate alternatives of top elevations of the sheet piles and rock aprons to allow tide exchange needed to establish mangrove shorelines and avoid releasing nutrients into the open water system.
7. Evaluate effects of tropical storms and storm surge on the system with and without the proposed islands.
8. Evaluate stability and design considerations of various Sea Level Rise (SLR) scenarios and adaptation plans for SLR.

III. Timing for Permitting and Project Delivery:

9. Would this be done as one single permit or split up into multiple permits/phases?
10. How long will this project take to permit?
11. How long will this project take to complete construction and monitoring?
12. Will the permitting be split either between dredging and construction or into phases, or all one project?
13. Will dredging and construction be split into phases by certain areas?
14. If phased, will there be monitoring and results by phase?
15. When does the monitoring start and end for each phase?
16. What steps could be taken to make sure the project can proceed, even if phases are required?
17. Will there be multiple dredging and / or construction mobilizations be working at the same time?
18. How will canals be prioritized for the dredging work?
19. Describe how long dredging operations are anticipated to take in each canal? (i.e., How long are homeowners anticipated to live near dredging activity, including potential closure of canals or partial closure?)
20. Describe how long construction operations are anticipated to take for each island? (i.e., How long are homeowners anticipated to live near construction activity?)

IV. Permitting:

1. Confirm that the scope of the proposal includes a pre- and post- bathymetric survey for all of the areas to be dredged or filled.
2. Confirm that the scope of the proposal includes a pre- and post- benthic survey for all of the areas to be dredged or filled.
3. Confirm that the scope of the proposal includes an as-built survey for all of the construction areas.
4. Will the state approval be by the Florida Department of Environmental Protection or the South Florida Water Management District?
5. What type of U.S. Army Corps of Engineers approval is anticipated for the project? Do you anticipate a Nationwide or an Individual permit?
6. Which Nationwide permit(s) would apply?
7. How will the listed species review be handled if the project pursues a Nationwide permit?
8. For state permitting purposes, will the mangrove islands be considered spoil islands?
9. What type of proprietary approval is anticipated in the state lands area?
10. Will the mangrove islands have any public use?
11. How exactly will the public purpose / benefit of the project be described for permitting purposes? Is it any different than what is described for the purposes of section 255.065, Fla. Stat.?
12. Will the mangrove islands be subject to a conservation easement?

13. How will upland owners' riparian rights be addressed as to the mangrove islands and the neighboring upland owners?
14. What form of state lands proprietary approval is anticipated for the mangrove islands? Is any proprietary approval needed for the dredging?
15. Does the project proponent have to show sufficient upland riparian interest to obtain the state lands proprietary approval?
16. How does the carbon credit program work under the state lands proprietary regulations? The Environmental Resource Permit regulatory authorization? Corps permit? Is an EPA approval needed?
17. Will dewatering be required for any of the construction?
18. What type of Environmental Resource Permit is anticipated? Do any of the general permits apply?
19. Who will sign the permit applications? Will the City of Marco Island be required to be a co-permittee?
20. What Operation & Maintenance ("O&M") is expected to be needed for the long term?
21. What is the anticipated long-term O&M cost associated with the project?
22. Who will be responsible for the long-term O&M cost? Will financial assurance be required?
23. Will an NPDES permit be required?
24. Will approval under Section 10 of the Rivers and Harbors Act be required?
25. Will approval under Section 408 of the Clean Water Act be required?
26. It appears likely that the state will require a considerable amount of post-construction monitoring of both water quality and vegetative growth. The monitoring will likely include water quality sampling to demonstrate the net improvements being claimed. The proposal appears to indicate that the City will not have any involvement in things other than general public input in the early stages. Will the monitoring plans be vetted with the City prior to submittal to the state and will final post-permit requirements be vetted the same before permit issuance to ensure that the City is not left with onerous and expensive monitoring and reporting requirements?
27. The proposal references a study done in the Florida Keys where sediments were removed from two canals, but in those canals' conditions (for organic Carbon and Total Phosphorus) returned to baseline approximately two years after sediment removal. That study did not specifically address Nitrogen which is a critical component of the water quality concerns in Marco. How would potential nitrogen removal be quantified in the permit submittal. That study also referenced placement of clean fill in dredged areas. Is that being proposed for this project? What type of fill would be used and where would it be sourced?
28. Does the proposal include the submerged aquatic vegetation (SAV) survey of the canal systems that the agencies will require as part of the permitting process? Do the proposers have people capable of conducting SAV surveys?
29. There likely will be some resources present based on historical dives in those canals. Typically, there is a 10-meter setback from SAV required for in-water work so how does

that affect pricing if you have to avoid various areas and it adds up to a significant acreage?

30. The proposal does not mention the smalltooth sawfish or giant manta ray which would require coordination with the National Marine Fisheries Service.
31. What type of modeling would be done to determine changes in water flow and/or flushing with the installation of the islands? Recommendation – a numerical model of the hydrodynamics of the mangrove islands and the flushing of the dredged canals is likely needed.
32. Recommendation- It is unlikely that the spoil islands will be tolerated in the narrower canal system by neighbors with riparian interests, which will likely kick the islands out into state lands rather than City-held bottom lands. We highly recommend workshops on the locations of these islands before permitting begins.
33. What are the selection criteria for determining the location of the proposed mangrove islands?

V. Construction:

1. At any point will the work require dewatering on land? If so, where would this occur? This will be a sensitive subject with both the local residents and the regulatory agencies.
2. Has sediment characterization been done to determine if excavators are the most appropriate means to dredge? Was hydraulic dredging considered given the desire to remove organics?
3. In 102-3.3 the proposal mentions channel closures. How long would closure be proposed for? We cannot cut people off from entering or leaving canals for long periods.
4. How will permeability through the island walls be maintained? The ability of water to flush at all tidal levels will be important to maintaining mangrove viability.
5. If manatee observers are required during work, who would be responsible for providing said monitors?
6. What is the plan for containment / stabilization of the dredged materials in the islands?
7. Recommendation- Mangrove rubber vine (*Rhabdadenia biflora*) is on the planting plan, and while it is native, it is generally considered a nuisance as it will overrun groundcover and eventually small shrubs and saplings
8. What materials will be used to build the islands? List all materials and anticipated quantities.
9. What equipment will be used for dredging and construction? Describe the availability of that equipment.

VI. Access and Staging:

1. What are the access point(s) for the dredging work? What are the access point(s) mangrove restoration work?
2. Does Earthwerks need to make use of any of the City of Marco Island's properties to facilitate the work? What properties have been identified and in what parts of the process? What will be the impact to the City of Marco Island's lands?

3. What areas of the canals will have to be closed to navigation while dredging and island construction are underway? How long and how are the canals prioritized?
4. What percentage of the budget for the project is estimated for costs associated with access, staging of materials, and logistics for moving the materials?
5. Will there be a back up location (other than holding on a barge) for staging dredged materials or other construction materials?

VII. Sediment characterization for the canal sediments:

1. What are the plans for testing and characterization of the sediment and alternate disposal if testing shows contaminants that would not allow for use in the islands?
2. Has sediment characterization of the canal sediments been done?
3. Will sediment characterization of the canal sediments be done and how?
4. Will a pilot study of sediment characterization of the canal sediments be done?
5. How will the contractor address sediments that have elevated sampling results for constituents of concern, i.e. hazardous materials?
6. How will the timing and logistics work for sampling and storing the sediments if sampling takes place during the project construction?
7. Has a soil management plan been prepared for sediments that may require further actions like blending to make reuse of the sediments?
8. What will happen if the sediments are not reusable in the marine environment? What will happen if the sediments are not reusable at all and have to be disposed of at a landfill? Have these costs been considered?
9. What if there are not enough reusable sediments to complete the mangrove islands proposed in the project?
10. Will additional fill materials be brought in to complete the project? Have these costs been considered?

VIII. Sediment reintroduction and flushing:

1. How have the adverse effects of dredging been analyzed?
2. How will depths for dredging work be determined? How has the depth and potentially increasing depths been analyzed for its effect on water quality?
3. The City of Marco Island's 4(e) plan states, "Disturbing the sediments could release large amounts of nutrients." How will this concern be addressed?

IX. Emergency Circumstances or Legal Challenges:

1. What kinds of plans would there be if there are emergency conditions ordered and dredging and / or construction operations are underway? What happens if the construction is ongoing during hurricane season?
2. What is the longest time frame that dredged sediment will be stored? Where will it be stored? What volumes are anticipated to be stored?
3. What happens to the timeframes if there is an administrative challenge to the permits? Who will be responsible to defend the permits?

X. Performance / monitoring:

1. What performance measures will be employed to measure the effectiveness of the project?
2. Is vegetation monitoring for three years the only monitoring proposed?
3. What if additional planting is required?
4. Does the location of the mangrove islands affect the anticipated water quality performance of the project?

XI. Financial Planning and Financial Assurance:

1. The proposal does not specify what involvement the City would have in the grant application and submittal process. Grants usually come with conditions and time frames, so the City has to be involved to protect against unreasonable or unattainable metrics. The City should also have some say in the funding sources to be utilized.
2. The proposal mentions an overall not to exceed cost of \$60 million. This should be further broken down into project components. An example would be pre-permitting data collection, public involvement, permitting, construction, and monitoring. Estimates for anticipated maintenance would also be appropriate.
3. The proposal says that Earthwerks will design, permit and obtain funding for the project at its own cost and risk and that these costs may be paid through grants outside of the “Project Costs”. Please clarify that if grant funding for these activities is not obtained, that Earthwerks is responsible for funding these activities and the City would not have any responsibility to reimburse or cover these “Pre-Development Activity” costs.
4. With regard to Carbon Credits, who would be responsible for formulating and getting approval for a Carbon Credit “bank”? This would need to be considered, reviewed, and approved as a Credit Project prior to implementation. How long does this process take and which authority would be approached to establish said project (American Carbon Registry, Gold Standard, Verra, etc.)? There is also a concern that sale of credits from the proposed island could make this project be reviewed more as a commercial enterprise than a maintenance or restoration project. Especially if conducted on State Lands which normally take a percentage of revenue made as compensation for the use of the state lands.
5. Is the sale of Carbon Credits imperative to the funding of the project? Is the project still viable without this component? Would the loss of this component reduce the cost of the work, either by the removal of the up-front data collection or long-term monitoring components?
6. What type(s) of financial assurance will Earthwerks establish?
7. How does Earthwerks anticipate the financial assurance will be funded?
8. How long will the financial assurance be in place?
9. Will grant applications be used to fund the design and permitting?

XII. For Section 255.065(3)(c), Fla. Stat. review purposes:

1. Please list all of the benefits to the public from the project.
2. Please describe the financial structure of the project, and explain any and all of the economic efficiencies that are part of the proposal.
3. Please further explain qualifications and experience with regard to Florida water quality projects. Explain operational & maintenance experience if any.
4. Please further explain the compatibility with regional infrastructure plans.
5. Have any public comments been received to date, and how have they been addressed?

Attachment C

CHAWQ Responses to Preliminary Review



Unsolicited Public-Private Partnership Proposal Review - RESPONSES

September 11th, 2025

Justin Martin, PE
Director of Public Works, City of Marco Island

*C-HAWQ Initiative – Preliminary Review of Unsolicited Public-Private Partnership Proposal
Review led by Humiston & Moore Engineers on behalf of the City of Marco Island.*

Dear Mr. Justin Martin, PE

The C-HAWQ team has received the Humiston & Moore Engineers' July 17th letter and supporting attachments summarizing their team's collective review of the subject Proposal. We appreciate the time and expertise employed in the review, and we respect the reviewers' thorough approach. Our team enthusiastically submits our responses to the review letter in the following pages.

The underlying theme of the responses, which was discussed at our introduction meeting with the H&M team, is established in the Preamble. We hope that any reader holds this theme in their mind as they review the responses on the following pages.

We look forward to sustaining productive progress towards a Comprehensive Agreement as our team, the City, and your appointed experts navigate these critical steps in the process. That process itself could be easy to lose track of, so our responses have been color coordinated to indicate which questions and answers directly apply to the requirements of the State Statutes. The green highlights indicate questions and answers outside Public-Private Partnership review, as outlined in Florida Statute Chapter 255.

With that, please find our responses as follows.

Signed with gratitude,

Nicholas F. Tremmel, PE
Project Engineer

As a preamble to the below responses, the Proposer submits:

The Proposal is a response to the studies performed by Turrell, Hall & Associates, Inc. (“THA”), Environmental Research and Design, Inc. (“ERD”), and Jacobs Engineering, and recognizing that modern-day Marco Island was created by dredge and fill construction *without* the benefit of modern design which considers more thorough studies, such as flushing analyses or contemporary modern permit review. The mindset during the development period of modern Marco Island was that the undesirable nature needed to be tamed and its resources extracted for profit. Quelling mosquitoes and maximizing the number of homes to be built were the motive forces. The result of this development approach is cataloged in the ERD study. The ERD study is clear that sediment release contributes two to five (2-5) times more nitrogen, the primary nutrient of concern, compared to other sources. ERD 7.1.2.1, “Outside of dredging, which would be prohibitively expensive and unacceptably intrusive, there is little that can be done to eliminate this significant source.” This proposal reacts to that dismissive sentiment, responding, “it doesn't have to be.”

Recall, over a generation ago, the construction of modern Marco Island by the Deltona Corporation fully removed the natural island’s living shoreline, then encapsulated the island with synthetic, concrete (and often now vinyl) seawalls. Many Florida canal communities, including Cape Coral and Port Royal, face the same reality as a result of this type of construction and decades of absence from any meaningful maintenance or modern improvements on the canal infrastructure. The Proposal is unique in that there are no truly comparative projects, but its fundamental elements are each commonplace. That is to say, the Proposal pairs dredging, the best *maintenance* technique for the City’s inherited and aged canal system as determined by multiple third-party reviewers, with the benefits of a natural living shoreline that the Island originally had. It does this by creating additional land area using the same techniques employed to create modern Marco Island, but with a completely different purpose. With that in mind, the only true alternative to this project would remove all seawalls on the Island and restore living shorelines island-wide. Imagine that alternative along with the private property rights issues it would bring. This project works to achieve the benefits of living shorelines while symbiotically allowing the existing seawalls and private property rights to remain. This proposal provides the benefits of living shorelines in addition to the necessary maintenance of dredging the canals of the island.

The Proposal fundamentally is the definition of a Public-Private-Partnership. In the nearly four (4) years since publishing the ERD report, the City has been grappling with difficulties related to scale, permitting, and the financial burden of this inherited infrastructure. The community as a whole is not to blame for this lack of intervention—many hurdles continually impede momentum towards a solution. Marco Island staff are also responsible for keeping a city of 15,000 operating smoothly day-to-day, which alone is no small task. One can see that this situation is ripe for partnership between the City’s staff and industry experts in urban water quality construction, permitting, and funding.

The regulatory authorities who will administer the permits are highly qualified. In our conversations with the Florida Department of Environmental Protection, for example, the Department representatives were enthusiastic enough to request a follow-up to a pre-application meeting because of their interest in this project. That is to say, the community passion and the local expertise are in place but packaging the holistic resolution needs addressing.

The packaging of each piece of this puzzle is what makes this Proposal. The Proposer's interest in this issue was presented, not sought out. The concepts employed are each fundamentally simple:

- Experts know that dredging is an effective way to remove deposited nutrients from the canals.
- Any person knows that excess fertilizers will grow plants; those can be weeds or algae, or purposefully desirable vegetation.
- Fishermen all know that shellfish beds and vegetation bring the fish.
- Birdwatchers all know mangroves are critical for roosting birds, and
- Everyone knows the value of a dollar and how important the financing of public projects is.

This Proposal picks up where the City now sits: a stalemate due to permitting, scale, scope, and/or funding. This package addresses all the hurdles, while still allowing City staff autonomy to evaluate and choose what is best, in their opinion, for the public benefit at each juncture in the process. This Proposal works with City staff so that **they** may deliver on the water quality promise the stakeholders are seeking, with the backing confidence of engineering, ecology, and legal experts.

This Proposal is one stage in the Private-Public-Partnership process. Following Proposal review and response, the City will be optioned with negotiating and executing a Comprehensive Agreement with the Proposer. That Agreement will allow the Proposer to begin permitting and final design, including undertaking the technical modeling and studies required for permitting. Then lobbying for funding may commence. Then the Construction operation and timeline begin. This Proposal allows the City to exit the Agreement at any stage in this process, whether that is during permitting, lobbying, before construction, or after 50% completion of construction. The Proposal also lays the burden of each of those steps on the Proposer, *not* the City.

Interestingly, the same techniques that created the stable modern island that the Marco Islanders inhabit can be prudently implemented to create stout natural shorelines. At the end of this project, the public will receive the benefits provided by dredging, as explained by ERD, plus a *lasting* benefit provided by naturally filtering living shorelines, lost when the island was developed. The Project is ambitious and unique, but it is informed by significant study and natural history. And though the islands are the most visible part of the project, they are just *part* of the project. The Proposal is one step in the development of the Comprehensive Agreement, which will factor in many of the technical design details as contingencies. It is important not to suffer from analysis paralysis at this early stage. As we wait, *without* action, the waters remain on the State's impaired list, and quality remains unimproved.

The development of Marco Island was seen at its time as unique and ambitious. Millions of cubic feet of dredge and fill took place. The solution Marco Island now needs must be unique and ambitious—and this Proposal is just that.

Note:

Any usage of "the City" is in reference to the City and Staff of Marco Island, FL.

Any usage of "the Proposal" is in reference to the Coastal Habitat and Water Quality ("C-HAWQ") Initiative Unsolicited Public-Private Partnership Proposal.

Any usage of "the Proposer" is in reference to the general contractor, Earthwerks Land Improvement and Development Corporation, who submitted the Proposal.

Scope of P3 Review

The current review is governed by section 255.065(3)(a)5., Florida Statutes, which states: “If the responsible public entity chooses to evaluate an unsolicited proposal involving architecture, engineering, or landscape architecture, it must ensure a professional review and evaluation of the design and construction proposed by the initial or subsequent proposers to assure material quality standards, interior space utilization, budget estimates, design and construction schedules, and sustainable design and construction standards consistent with public projects. Such review shall be performed by an architect, a landscape architect, or an engineer licensed in this state qualified to perform the review, and such professional shall advise the responsible public entity through completion of the design and construction of the project.”

All questions in the review are answered, but not all questions are within the scope of P3 review. This is noted throughout for reference.

I. Work Experience and Qualifications of Proposer

1. *Based on the work experience section of the proposal it does not appear that similar design work or permitting has been done by the proposer. Who would be performing those tasks? Is the proposer planning on contracting with local firms for that expertise?*

This question is outside the scope of section 255.065(3)(a)5., regardless: members of the project team, as listed in the Proposal, have extensive experience with design-build green infrastructure projects and permitting with federal, state, and local agencies for projects affecting natural and water resources. We are confident in our ability to leverage our proven experience while incorporating critical input from stakeholders and reviewing agencies. Additional specialty expert design and consulting firms may be subcontracted, as necessary, during the final design for permitting.

2. *A detailed plan and schedule should be included in the proposal.*

The Proposal includes design and permitting. A detailed plan and schedule cannot be feasibly provided until permitting is further along, and thus, after entry of the Comprehensive Agreement. It is expected that the permitting process will necessitate some changes to the design. Additionally, the overall project schedule will be contingent upon when permitting relates to the legislative session. As part of the Comprehensive Agreement, parameters can be established for providing detailed plans and schedules that take into account the various factors that will impact the timing.

Once funding and permitting timelines are pinned down, the Proposal and conceptual exhibits identify two hundred eighty-six sub-canals to be dredged, totaling some 340,000 linear feet. The conceptual volume is roughly one and a quarter million (1,250,000) cubic yards of material to be moved. The concept equates to nominally an attainable 50 barge loads per working day.

3. *It is unclear how the provided examples – Peanut Island, Palm Beach County, Florida, Poplar Island, Chesapeake Bay, and Marker Wadden, Markemeer, Netherlands – are applicable to the proposal. Please clarify whether there is an example in the state of Florida of this type of project, and if not, a pilot project should be considered in the proposal to demonstrate the means, methods, function and performance.*

These projects demonstrate the feasibility of the concepts included in this Proposal. Those concepts include beneficial reuse of dredged materials and the lasting benefits of expanding natural habitat. As this is a unique project, there are no exact replications of the solution proposed, but it does logically project and expand the proven concepts.

Due to the procurement of customized equipment necessary for this project, constrained by the height of the fixed bridges in the canals, plus the mobilization necessary, a pilot project is not feasible. Because of that, the smallest pilot project that could realistically be implemented scales to 50% of the total canals to be dredged.

4. *The proposal needs to include demonstrated ability to assess the effects of the proposed plan on hydrodynamics, sediment transport, water quality and flushing of the bays, lagoon, riverbanks and canals within the system. Please provide the qualifications and experience in numerical modeling of hydrodynamics, flushing and water quality assessment.*

This question is outside the scope of section 255.065(3)(a)5., regardless: referencing page 5 of Jacobs Engineering Group's *Limited Technical Review of September 2021, Marco Island Nutrient Source Project Report*, "Stagnation in canals is most likely responsible for canal TN enrichment." As constructed, Marco Island's canals lack appropriate flushing, a side effect of the times when development occurred. Increasing flushing by eliminating dead-ends on canals could be of benefit, but that exercise is independent of the scope of this Proposal. Because there is very little flushing taking place in the canals as currently constructed, and very little sediment transport, it is not expected that the constructed islands will have any impact on the hydrodynamics of the canals. That is to say, flows will remain stagnant, so the nutrient uptake of the created habitat islands serves a more critical role in the broader water quality picture. Should additional modeling be necessary for permitting by state and federal agencies, it will be performed at that time.

5. *The proposal needs to include listing and qualifications of key personnel and their roles in the various phases of the project design, permitting, management and implementation.*

This question is outside the scope of section 255.065(3)(a)5., regardless: the Proposal includes biographies for all key team members. The team demonstrates construction experience and expertise with Dan Davies and the notable projects in the Earthwerks portfolio. The team demonstrates ecological experience and expertise with Jonathan Koepke and the ENCAP portfolio. The team includes Florida Professional Engineer Nick Tremmel, license no. 102207. Further engineering expertise to be leveraged as needed includes Dr. Christopher B. Burke and his esteemed firm, CBBEL. The team includes legal counsel from both Zach Lombardo of Woodward, Pires & Lombardo, along with Phil Luetkehans of Luetkehans, Brady, Garner & Armstrong. Additionally, the structure of the Proposal delegates Permitting responsibility to the Proposer, while allowing them agency to employ whatever additional experts will be necessary to acquire the Permits. That is to say, as necessary for permitting, the Proposer will add to the Team, at no additional cost to the City.

II. Technical Design and Effects on Hydrodynamics and Ecosystem:

1. Identify the means and scientific methods proposed for the technical analysis, evaluation of alternatives and design of the recommended plan.

The Proposal fundamentally responds to the exhaustively thorough ERD report, supported by Jacobs Engineering's review. ERD tabulates over twenty (20) evaluated alternatives and supports each with over five hundred (500) pages of technical analyses. Furthered by Jacobs Engineering's review and general concurrence with the report, save for a few technical clarifications. It would be redundant for this Proposal to perform the same analysis for a third time. Instead, attention is directed to page 225 of the ERD report, "Based upon the field monitoring and sediment incubation experiments conducted by ERD, it is apparent that the existing sediment accumulations contribute the most significant nitrogen loading to the waterways each year, and water quality within the waterways could be improved by reducing the observed internal nitrogen loadings."

2. Define the area of influence of the proposed plan and the surface water circulation characteristics with and without the proposed plan.

This will be evaluated as necessary during permitting.

3. Evaluate the flow and flushing within the system using numerical modeling.

Hydrodynamic modeling of the Marco Island canals was performed and documented in a 2024 technical memorandum by Jacobs Engineering Group (Winslow 2024). The memorandum identifies existing tidal flow and flushing of the canal system, as well as proposed conditions with various culvert replacement scenarios. Again, culvert construction and replacement are independent of this Proposal's scope.

4. Assess the impacts of the canal dredging on flushing time within the system.

The 2024 hydrodynamic modeling performed by Jacobs Engineering Group identifies minimal tidal flushing under current conditions (Winslow 2024), and the dredging activity is not considered to have a significant impact. Response I.4. above expands on the stagnation currently observed in the canals. Additional modeling may be performed with proposed conditions as necessitated by the permitting process.

5. Assess the impacts of the constructed islands on flow patterns, increased velocities, scour potential and stability of the islands and the adjacent shorelines.

Scour potential should continue to remain minimal for two reasons. First, ERD and Jacobs both make mention of the stagnation in the canals under typical conditions:

“The observed low dissolved oxygen (DO) levels in the canal waterways of areas M-11, M-10, M-12, M-13, and M-17 are consistent with stagnant waters and water column stratification caused by a lack of tidal flushing combined with the occurrence of nutrient cycling associated with sediments.” *Jacobs, Limited Technical Review, item #5*

Second, under atypical flow patterns (storms), the islands will be located strategically to limit any impediment or constriction of canal cross-sections. Many locations are selected because they already exhibit un-navigably shallow areas where sands have naturally accumulated - the Roberts Bay footprint represents this well. Other selected areas remain narrow enough to facilitate not only flows but also navigability. More simply, the narrowest point currently in any canal will be preserved, away from any islands.

Further, a feature of the proposed design is the structural stability of the islands, with sheet pile and stone containment. Surrounding shorelines within the canal system are not natural in nature and consist of similar materials, which have empirically demonstrated their lasting ability to withstand storms.

6. Evaluate the sediment containment within the proposed islands and evaluate alternatives of top elevations of the sheet piles and rock aprons to allow tide exchange needed to establish mangrove shorelines and avoid releasing nutrients into the open water system.

It is proposed that sediment within the islands is to be capped with sand to prevent resuspension of nutrients into the water column while allowing exchange of tidal flow for vegetative establishment through perforations in the upper regions of the sheet piling. Alternatives for elevations of the sheet piling and rock aprons will be evaluated and addressed in the final design and with input from permitting authorities.

7. Evaluate effects of tropical storms and storm surge on the system with and without the proposed islands.

Similar response to II.5. above: The concept island locations preserve navigability of the canal systems for watercraft, maintaining a majority of canal cross-sectional areas. During negative storm surge outflows, the islands are intentionally not located at narrow sections, so they will not alter the controlling cross-section. The subsequent inflows may flow over the top of the islands, unimpeded.

8. Evaluate stability and design considerations of various Sea Level Rise (SLR) scenarios and adaptation plans for SLR.

Reference Proposal page 38, *Island Type Illustrations*: elevations of the islands will be varied topographically to accommodate multiple vegetative communities for varying hydrologic regimes. This diversity will allow for natural adaptation to different SLR scenarios. Vegetative communities that are drier at the onset of the project may shift to be more inundated over time, and established species tolerant of those conditions will be able to shift into these regions as necessary. The design allows for natural fluctuations in plant communities, considering SLR and other climate change effects. Species selection, with significant input from Naples Botanical Gardens, will be targeted to thrive under these proposed conditions.

III. Timing for Permitting and Project Delivery:

9. Would this be done as one single permit or split up into multiple permits/phases?

This is proposed to be done as a single permit, but based on funding availability may be broken into multiple permits/phases.

10. How long will this project take to permit?

The Proposer estimates 1-2 years to permit.

11. How long will this project take to complete construction and monitoring?

Construction will take 2 years to complete. Monitoring and maintenance will be provided for 3 years by the Proposer. It is recommended that the long-term O&M plan for monitoring and maintenance be 5 years minimum.

12. Will the permitting be split either between dredging and construction or into phases, or all one project?

Permitting will be one project, except as stated above in III.9.

13. Will dredging and construction be split into phases by certain areas?

The Proposal divides the City's canals into twenty-seven (27) zones; it is intended that one zone be constructed at a time, sequentially progressing from one region to another. Each of these twenty-seven (27) islands is constructed as the adjacent, contributing canals are dredged, re-using the spoils as a component of the island construction. As each canal is dredged and then surveyed, the dredging operation will move to the next canal, one at a time. The island building operation will complete one island before mobilizing to the next island, allowing the vegetating operation to perform that work on the island just created. This 'assembly line' will sequentially move from one island, and that island's contributing canals, to the next. Each island zone could be interpreted as a phase. Overall, however, the Proposal intends to continue working sequentially until all canals are dredged, and concurrently, all islands are constructed and vegetated. At that point, the construction will be complete, and the maintenance and monitoring of the habitats will continue as noted.

14. If phased, will there be monitoring and results by phase?

Vegetation and maintenance on each island will begin as soon as the island is complete, which in turn coincides with completing the dredging of the island's contributing canals. Monitoring will occur concurrently, summarized in an annual report. The earliest islands constructed will have the benefit of close to five years of maintenance and monitoring, while the last island constructed will have three (3) years, or additional time as required to meet permit requirements.

15. When does the monitoring start and end for each phase?

Echoing the response to II.14.: Monitoring and maintenance will start upon completion of each island. Monitoring will end three (3) years after completion of the final island.

16. What steps could be taken to make sure the project can proceed, even if phases are required?

The project is inherently scalable due to the method of dredging.

17. Will there be multiple dredging and / or construction mobilizations be working at the same time?

No, The Project will be one dredging and construction team working together at the same time.

18. How will canals be prioritized for the dredging work?

Canal prioritization will be determined by the City.

19. Describe how long dredging operations are anticipated to take in each canal? (i.e., How long are homeowners anticipated to live near dredging activity, including potential closure of canals or partial closure?)

There is no intention to close canals during dredging. Similar to road traffic, there may be temporary pauses to naval traffic, but boats will have the ability to move past the equipment at all times. The Proposal's Maintenance of Traffic provision (Section VI. Exhibit D.E, page 29) addresses control of naval traffic. The pace of construction anticipates dredging in front of an individual property to be less than 2 hours.

20. Describe how long construction operations are anticipated to take for each island? (i.e., How long are homeowners anticipated to live near construction activity?)

Each island timeline will vary based on the width of the canal, the depth of sediment dredged, the distance from the dredging area to the island locations, and the size of the island constructed. The average island will be constructed in four weeks, and any one area is not expected to have active construction longer than a few weeks. There will, however, be great variability based on each specific island's size. This relates only to the construction operation and excludes the planting operation, which will have comparably minimal impact.

IV. Permitting:

1. Confirm that the scope of the proposal includes a pre- and post- bathymetric survey for all of the areas to be dredged or filled.

Confirmed that the scope of the Proposal includes a pre- and post-bathymetric survey for all of the areas to be dredged or filled.

2. Confirm that the scope of the proposal includes a pre- and post- benthic survey for all of the areas to be dredged or filled.

Confirmed that the scope of the Proposal includes a pre- and post-benthic survey for all of the areas to be dredged or filled as necessary for permitting.

3. Confirm that the scope of the proposal includes an as-built survey for all of the construction areas.

Confirmed that the scope of the Proposal includes an as-built survey for all of the construction areas.

4. Will the state approval be by the Florida Department of Environmental Protection or the South Florida Water Management District?

FDEP. The Proposer has already had one pre-application meeting with FDEP to vet the concept and gain concurrence on Individual Permitting and the feasibility of permitting. They solicited a follow-up meeting from the Proposer, but permitting cannot progress without the permittee, City of Marco Island, as will be defined in the Comprehensive Agreement.

5. What type of U.S. Army Corps of Engineers approval is anticipated for the project? Do you anticipate a Nationwide or an Individual permit?

Individual Permit

6. Which Nationwide permit(s) would apply?

Individual Permit

7. How will the listed species review be handled if the project pursues a Nationwide permit?

Individual Permit

8. For state permitting purposes, will the mangrove islands be considered spoil islands?

We would ask the state that these islands NOT be considered spoil islands and restricted from use as spoil islands.

9. What type of proprietary approval is anticipated in the state lands area?

An easement under rule 18-21.005(1)(e), Florida Administrative Code.

10. Will the mangrove islands have any public use?

Islands in canals will be owned by the City and their public use controlled at the City's discretion.

11. How exactly will the public purpose / benefit of the project be described for permitting purposes? Is it any different than what is described for the purposes of section 255.065, Fla. Stat.?

The public purpose/benefit of the Project will be no different than the purposes described in section 255.065, Fla. Stat.

12. Will the mangrove islands be subject to a conservation easement?

The islands are expected to be placed into a conservation easement, the details of which will be discussed and approved before submittal to the City.

13. How will upland owners' riparian rights be addressed as to the mangrove islands and the neighboring upland owners?

Islands will be located so as not to impact neighboring riparian rights.

14. What form of state lands proprietary approval is anticipated for the mangrove islands? Is any proprietary approval needed for the dredging?

For the islands, an easement under rule 18-21.005(1)(e), Fla. Admin. Code.

For the dredging, no dredging is taking place on state lands.

15. Does the project proponent have to show sufficient upland riparian interest to obtain the state lands proprietary approval?

The applicant will be the City, a government entity. Based on § 18-21.004(3)(b), Fla. Admin. Code, "Satisfactory evidence of sufficient upland interest is not required for activities on sovereignty submerged lands that are not riparian to uplands, or when a governmental entity conducts restoration and enhancement activities, provided that such activities do not unreasonably infringe on riparian rights."

16. How does the carbon credit program work under the state lands proprietary regulations? The Environmental Resource Permit regulatory authorization? Corps permit? Is an EPA approval needed?

Carbon Credits are not directly part of the proposal. They could be independently pursued or discussed at the City's discretion after the project is constructed and as the island habitats are established.

17. Will dewatering be required for any of the construction?

Dewatering will not be required for any of the construction.

18. What type of Environmental Resource Permit is anticipated? Do any of the general permits apply?

Individual permit.

19. Who will sign the permit applications? Will the City of Marco Island be required to be a co-permittee?

The City will be the permittee.

20. What Operation & Maintenance (“O&M”) is expected to be needed for the long term?

Once native vegetation and mangroves are established, it is not expected that there will be significant long-term O&M. Periodic inspection of the islands for vegetative health, structural stability, and materials will be required long-term. Island structure is designed to be maintenance-free, but if any issues are observed, repairs will be assessed. Marco Island’s current dredge-fill-seawall construction is proposed for the constructed islands, so similar maintenance should be expected between the new island habitats and the existing canal infrastructure.

21. What is the anticipated long-term O&M cost associated with the project?

Long-term O&M costs are expected to be minimal as mangroves and native vegetation, once established, require little maintenance. Similarly, long-term O&M for the structural stability and maintenance of the islands will be minimal.

22. Who will be responsible for the long-term O&M cost? Will financial assurance be required?

Proposer will be responsible for O&M costs that fall within the agreed-upon 3 years of monitoring and maintenance. After that period, the City will be responsible for the long-term O&M costs. This would include island structure, materials, and vegetation. Long term financial assurance (beyond the agreed upon term and beyond what is required for permit closure) is not included in the Proposal.

23. Will an NPDES permit be required?

As there is no land disturbance, it is not expected that an NPDES permit will be required. If one is required after consultation with the state, one will be filed.

24. Will approval under Section 10 of the Rivers and Harbors Act be required?

Approval under Section 10 of the Rivers and Harbors Act most likely will be required. This will be fully determined in the permitting process. The Proposal includes all permitting and associated costs, so this will be covered by the Proposer.

25. Will approval under Section 408 of the Clean Water Act be required?

Approval under Section 408 of the Clean Water Act most likely will be required. This will be fully determined in the permitting process. The Proposal includes all permitting and associated costs, so this will be covered by the Proposer.

26. It appears likely that the state will require a considerable amount of post-construction monitoring of both water quality and vegetative growth. The monitoring will likely include water quality sampling to demonstrate the net improvements being claimed. The proposal appears to indicate that the City will not have any involvement in things other than general public input in the early stages. Will the monitoring plans be vetted with the City prior to submittal to the state and will final post-permit requirements be vetted the same before permit issuance to ensure that the City is not left with onerous and expensive monitoring and reporting requirements?

Consultation with the City regarding the permitting, monitoring, and other requirements of the project is expected to be ongoing and coordinated. As the City is intended to be the permittee, its approval and input will be included throughout the process. As the City already is performing water quality monitoring and testing, it's expected that it will continue as a part of the permit process. Any required testing and monitoring necessary to fulfil permit obligations will be performed by the Proposer.

The sentiment that City will not have any involvement should be addressed because that is not the intent of this Proposal. As the Comprehensive Agreement is executed, City staff will have full autonomy to decide what is best for the Public Benefit. At any point, the City can be as involved as they desire, or back out of the agreement.

27. The proposal references a study done in the Florida Keys where sediments were removed from two canals, but in those canals' conditions (for organic Carbon and Total Phosphorus) returned to baseline approximately two years after sediment removal. That study did not specifically address Nitrogen which is a critical component of the water quality concerns in Marco. How would potential nitrogen removal be quantified in the permit submittal. That study also referenced placement of clean fill in dredged areas. Is that being proposed for this project? What type of fill would be used and where would it be sourced?

No fill is proposed to be utilized for this project. If potholes or low areas are identified during a bathymetric survey or dredging, existing sand substrate will be utilized to improve water quality. While the removal of nutrient-laden sediments provides an initial water quality improvement, as demonstrated in the study, a key feature and differentiating factor of this proposed solution is the incorporation of the native plant communities into the system, which allows for long-term water quality improvements. The capacity of salt marsh and mangrove systems to improve water quality, specifically for systems with excess nitrogen, has been well documented and cited in the submitted P3, specifically the article titled *Water Quality From Mangrove Forest...Thailand*, as published in the journal *Modern Applied Science*, Vol. 6, No. 8.

28. Does the proposal include the submerged aquatic vegetation (SAV) survey of the canal systems that the agencies will require as part of the permitting process? Do the proposers have people capable of conducting SAV surveys?

Yes. Subcontractors capable of conducting SAV surveys will be utilized as necessary and have been pre-identified.

29. There likely will be some resources present based on historical dives in those canals. Typically, there is a 10-meter setback from SAV required for in-water work so how does that affect pricing if you have to avoid various areas and it adds up to a significant acreage?

The scale and cost of the project would be reduced.

30. The proposal does not mention the smalltooth sawfish or giant manta ray which would require coordination with the National Marine Fisheries Service.

All necessary aquatic surveys for permitting will be conducted.

31. What type of modeling would be done to determine changes in water flow and/or flushing with the installation of the islands? Recommendation – a numerical model of the hydrodynamics of the mangrove islands and the flushing of the dredged canals is likely needed.

Additional hydrodynamic modeling will be conducted for permitting as necessary.

32. Recommendation- It is unlikely that the spoil islands will be tolerated in the narrower canal system by neighbors with riparian interests, which will likely kick the islands out into state lands rather than City-held bottom lands. We highly recommend workshops on the locations of these islands before permitting begins.

The City will ultimately make that determination, but it is expected that workshops and other public outreach will be a significant part of the final design and permitting process.

33. What are the selection criteria for determining the location of the proposed mangrove islands?

Island locations will be determined based on the width of the canals and input from the City. Enough locations will be necessary in order to accommodate the dredged materials. In the Proposal, V.F.2 (p.12) describes general guidelines, further visually represented in VI. Exhibit A and B (p.15).

V. Construction:

1. At any point will the work require dewatering on land? If so, where would this occur? This will be a sensitive subject with both the local residents and the regulatory agencies.

No dewatering on land is expected or required.

2. Has sediment characterization been done to determine if excavators are the most appropriate means to dredge? Was hydraulic dredging considered given the desire to remove organics?

Hydraulic dredging was determined to be impractical due to the piping, pumping, cost, and other encumbrances in the canals.

3. In 102-3.3 the proposal mentions channel closures. How long would closure be proposed for? We cannot cut people off from entering or leaving canals for long periods.

Echoing response III.19. above, the only closures anticipated are temporary and pacing. That would be on the order of 10 minutes duration as a barge is loaded, then pacing other vessels behind that barge as it navigates the canal. The specification in 102-3.3 details communication and coordination with the City for *unforeseen* events.

4. How will permeability through the island walls be maintained? The ability of water to flush at all tidal levels will be important to maintaining mangrove viability.

Echoing response II.6. above: Sediment within the islands is proposed to be capped with sand to prevent resuspension of nutrients into the water column while allowing exchange of tidal flow for vegetative establishment through perforations in the upper regions of the sheet piling.

5. If manatee observers are required during work, who would be responsible for providing said monitors?

The Proposer will be responsible for providing manatee observers, as required during work, the cost of which would be included in the Not-To-Exceed amount.

6. What is the plan for containment / stabilization of the dredged materials in the islands?

Vinyl sheet pile will be utilized to contain the sediments, with perforations to allow for tidal flow exchange. After placement, sediments will be capped with sand to prevent resuspension into the water column. If additional soil stabilization is necessary on shorelines for vegetation establishment, biodegradable coir mats will be utilized.

7. Recommendation- Mangrove rubber vine (Rhabdadenia biflora) is on the planting plan, and while it is native, it is generally considered a nuisance as it will overrun groundcover and eventually small shrubs and saplings

The proposed species list was created with significant input from the Naples Botanical Garden's Conservation and Natural Resources team. Mangrove Rubber Vine was specifically recommended to provide early stabilization within certain planting zones of the islands. As the islands will be under an active management program after installation, this species can be addressed if it is found to pose issues to the establishment of other planted species.

8. What materials will be used to build the islands? List all materials and anticipated quantities.

Sand, dredged sediment, vinyl sheet piling, and limestone rip rap. Quantities will be determined in the final design and permitting stage of the project. Conceptual plans estimate one and a quarter million (1,250,000) cubic yards of dredging, 55,000 linear feet of sheet piling, and 60,000 tons of limestone riprap.

9. What equipment will be used for dredging and construction? Describe the availability of that equipment.

Custom-built barges and floating excavators will be constructed for the project. Availability of equipment will not impact the schedule, as permitting will be the controlling item.

VI. Access and Staging:

1. What are the access point(s) for the dredging work? What are the access point(s) mangrove restoration work?

Public access points will be utilized to launch equipment and boats for dredging and mangrove restoration work.

2. Does Earthwerks need to make use of any of the City of Marco Island's properties to facilitate the work? What properties have been identified and in what parts of the process? What will be the impact to the City of Marco Island's lands?

It is not expected to utilize any of the City's properties. If the use of marinas or boat launches is necessary, the Proposer will own that cost during the duration of the Project.

3. What areas of the canals will have to be closed to navigation while dredging and island construction are underway? How long and how are the canals prioritized?

Reference answer V.3. It is unlikely that, other than when actively dredging, the entire canals will be closed. Portions of canals will likely be closed at the time of active construction and dredging, but the mobile nature of the equipment is intended to prevent canals completely closed for any significant amount of time.

4. What percentage of the budget for the project is estimated for costs associated with access, staging of materials, and logistics for moving the materials?

Itemized budgeting is not part of this Proposal and is not directly relevant to the review. The 'total package' character of the Proposal makes itemization difficult and irrelevant. The Proposal does acknowledge that some tracking of progress for payments and other benefits will be necessary; the solution proposed is outlined in C.2.d. Project Costs Payment. All costs and pay items will be incidental to the total linear feet of canals dredged, and measured for payment and progress, and the dredging work is completed.

5. Will there be a back up location (other than holding on a barge) for staging dredged materials or other construction materials?

The dredged materials will be immediately relocated from the dredged area to the islands and fill sites. Construction materials will be immediately brought to the island and fill sites.

VII. Sediment characterization for the canal sediments:

1. What are the plans for testing and characterization of the sediment and alternate disposal if testing shows contaminants that would not allow for use in the islands?

Preliminary testing of sediments has not shown any contaminants that would preclude them from the USACE and FDEP's beneficial re-use. If contaminated sediments are identified, they would need to be disposed of. Due to preliminary testing results, this scenario was not given strong consideration. If contaminated sediments are encountered and alternate disposal is required, that should be negotiated as needed. Provisions for that may be included in the Comprehensive Agreement.

2. Has sediment characterization of the canal sediments been done?

Yes. A series of initial sediment testing throughout several areas of the canals has been done by the Proposer. That information was incorporated in the Proposal as it was prepared.

3. Will sediment characterization of the canal sediments be done and how?

Yes. An initial sediment characterization was done by grab sampling through CLAM by the Proposer. Echoing the above answers, those findings have been incorporated into the preliminary design outlined in the Proposal.

4. Will a pilot study of sediment characterization of the canal sediments be done?

This has already been performed by the Proposer. Echoing the above answers, those findings have been incorporated into the preliminary design outlined in the Proposal.

5. How will the contractor address sediments that have elevated sampling results for constituents of concern, i.e. hazardous materials?

Echoing the above answers, preliminary findings do not indicate the presence of any constituents of concern. Additional sampling and testing required by regulatory agencies will be performed, and are included in the cost of the Proposal. Referencing response to question VII.1. Alternate handling or disposal will be addressed case-by-case.

6. How will the timing and logistics work for sampling and storing the sediments if sampling takes place during the project construction?

The Proposal has the benefit of selecting subcontractors who demonstrate a desire to collaborate. To that point, sampling and testing logistics will be easily coordinated between any subcontractors or labs. Typically, sampling via barge is expected. Alternatively, if FDEP and USACE standards are stipulated to be different during permitting, accommodations for those methods can easily be incorporated into the construction sequencing before Construction commences.

7. Has a soil management plan been prepared for sediments that may require further actions like blending to make reuse of the sediments?

As with the above answers, preliminary testing did not indicate any special handling would be necessary. Again, if problematic constituents of concern are encountered, appropriate actions will be taken on a case-by-case basis.

8. What will happen if the sediments are not reusable in the marine environment? What will happen if the sediments are not reusable at all and have to be disposed of at a landfill? Have these costs been considered?

Preliminary testing indicated that all sediments will be appropriate for reuse in the constructed islands. Those findings influenced this Proposal's design. IF unsuitable sediments are encountered, they will be required to be disposed of in accordance with regulatory requirements at the cost of the Proposer under the Proposal's Not-To-Exceed cost.

9. What if there are not enough reusable sediments to complete the mangrove islands proposed in the project?

Individual islands are sized to capture the volume dredged from each section of contributing canals. If during the Construction Operation, actual conditions deviate from design assumptions based on preliminary findings, then islands will be modified to accommodate the actual volumes. Islands shown in the preliminary design can be thought of as maximum footprints.

10. Will additional fill materials be brought in to complete the project? Have these costs been considered?

No additional fill materials will be brought in for the project. As mentioned in above answers, there will not be any scenario where fill materials will be necessary.

VIII. Sediment reintroduction and flushing:

1. How have the adverse effects of dredging been analyzed?

The Proposal acts on the recommendation of the ERD report (Section 7.2.1, p.7-7) for dredging.

2. How will depths for dredging work be determined? How has the depth and potentially increasing depths been analyzed for its effect on water quality?

Article F.1. in the Proposal and Exhibit B, outline three distinct canal categorizations that will dictate dredge depth. Sediments will be removed entirely, and a minimum depth will be achieved for all canals. More generally, the expectation is to *maintenance dredge* these canals, returning them to the original design, or better.

3. The City of Marco Island's 4(e) plan states, "Disturbing the sediments could release large amounts of nutrients." How will this concern be addressed?

Industry Best Management Practices (BMPs) will be deployed during all phases of the project. Turbidity and bubble curtains are intended to contain any disturbed sediments and nutrients in the work area. Geotextiles will be implemented in island construction, and final stabilization of sediments will be accomplished with the vegetation and sand capping. Additional BMPs may be incorporated in the final design as necessitated through the permitting process.

IX. Emergency Circumstances or Legal Challenges:

1. What kinds of plans would there be if there are emergency conditions ordered and dredging and / or construction operations are underway? What happens if the construction is ongoing during hurricane season?

Health and safety plans will be created for application during construction. The timeline for the construction of any individual island will be shorter, so the Proposal accommodates many good stopping points where construction can pause for inclement weather. It is expected that between forecasting potential storm threats and the compartmentalized construction zones, any accommodations can easily be made.

2. What is the longest time frame that dredged sediment will be stored? Where will it be stored? What volumes are anticipated to be stored?

Sediment will not be stored; it will temporarily be impounded for less than a few hours as it is transported on a barge.

3. *What happens to the timeframes if there is an administrative challenge to the permits? Who will be responsible to defend the permits?*

This question is outside the scope of section 255.065(3)(a)5, regardless: lawsuits or administrative challenges to the permits are beyond anyone's control. The City and Proposer will have to defend the permits if challenged. The Proposal does operate under an umbrella of mutual partnership between the City and the Proposer and challenges will have to be addressed in the comprehensive agreement.

Timing of theoretical challenges relative to permitting, funding/grants, and construction will each impact overall timeline differently and would need to be considered case-by-case. The fundamental financial premise is that the Proposer is fronting the cost for permitting and design on the City's behalf, with the expectation that those costs will be covered by State or Federal grants or appropriations. When negotiating the comprehensive agreement provisions to address a scenario where the cost to defend administrative challenge(s) cannot be reimbursed or exceed reasonable value may be included.

X. Performance / monitoring:

1. What performance measures will be employed to measure the effectiveness of the project?

It is expected that permitting will stipulate specific performance measures and the methods to measure and meet those. Consequently, it is anticipated that all measures will need to be demonstrably met before permit closeout; all of these expectations are included in the Proposal as part of permitting. Nominally, measures will consist of vegetation sampling and monitoring, water quality testing, visual wildlife surveys, structural monitoring, and schedule performance. Again, any and all permitting requirements will be met by this Proposal.

2. Is vegetation monitoring for three years the only monitoring proposed?

The Proposal includes all monitoring necessary to acquire and close out permits. This includes, but is not limited to, vegetation monitoring. It is also anticipated that the City's current water quality monitoring remains ongoing.

3. What if additional planting is required?

If required, additional planting will be performed within the maintenance and monitoring period at the cost of the Proposer.

4. Does the location of the mangrove islands affect the anticipated water quality performance of the project?

Yes. Locating mangrove islands in the canals themselves is an important part of the Proposal, as we are expecting the mangrove habitats to sequester and remove nutrients from the water column. Water quality issues are reported to be comparably impaired between canals, plus dimensional constraints, along with stakeholder appetite, will all need to be balanced in the final island location. Short of stakeholder polling, the selected locations are expected to balance these constraints as best as possible.

XI. Financial Planning and Financial Assurance:

While budget estimates are part of the review under section 255.065(3)(a)5, analysis of the funding and financing methods are not. Regardless, answers are provided.

1. *The proposal does not specify what involvement the City would have in the grant application and submittal process. Grants usually come with conditions and time frames, so the City has to be involved to protect against unreasonable or unattainable metrics. The City should also have some say in the funding sources to be utilized.*

It is expected that the City will be an active partner in all funding, grant, and permitting processes. They will have autonomy to act in the best interest of the public. The Proposal does alleviate the burden of grant applications and other funding instruments falling solely on City staff.

2. *The proposal mentions an overall not to exceed cost of \$60 million. This should be further broken down into project components. An example would be pre-permitting data collection, public involvement, permitting, construction, and monitoring. Estimates for anticipated maintenance would also be appropriate.*

The Proposal presented is packaged to include all items.

Roughly 15% of the cost is pre-construction and related, 10% of the cost is vegetation, maintenance, and monitoring, with the balance for construction. The comprehensive packaging is the core of this Proposal. Dismantling or itemizing components further would be catastrophically detrimental to the Proposal on the whole.

3. *The proposal says that Earthwerks will design, permit and obtain funding for the project at its own cost and risk and that these costs may be paid through grants outside of the "Project Costs". Please clarify that if grant funding for these activities is not obtained, that Earthwerks is responsible for funding these activities and the City would not have any responsibility to reimburse or cover these "Pre-Development Activity" costs.*

That is correct. Earthwerks, the "Proposer", is expecting that if these costs are not covered by additional grants or other funding mechanisms, the City will not be expected to bear those costs outside of the project budget.

4. *With regard to Carbon Credits, who would be responsible for formulating and getting approval for a Carbon Credit "bank"? This would need to be considered, reviewed, and approved as a Credit Project prior to implementation. How long does this process take and which authority would be approached to establish said project (American Carbon Registry, Gold Standard, Verra, etc.)? There is also a concern that sale of credits from the proposed island could make this project be reviewed more as a commercial enterprise than a maintenance or restoration project. Especially if conducted on State Lands which normally take a percentage of revenue made as compensation for the use of the state lands.*

This is a possible additional funding source outside of the project scope. Attention should be drawn to response IV.14 above.

5. *Is the sale of Carbon Credits imperative to the funding of the project? Is the project still viable without this component? Would the loss of this component reduce the cost of the work, either by the removal of the up-front data collection or long-term monitoring components?*

The carbon credit possibility is not expected as an imperative to move the project forward.

6. *What type(s) of financial assurance will Earthwerks establish?*

A performance and payment bond would be provided before moving to the construction phase of the project, as required by Florida Law.

7. *How does Earthwerks anticipate the financial assurance will be funded?*

A performance and payment bond would be provided before moving to the construction phase of the project, as required by Florida Law.

8. *How long will the financial assurance be in place?*

Financial assurance will be provided from construction project initiation through permit closure as required by Florida Law.

9. *Will grant applications be used to fund the design and permitting?*

Yes, if possible, but it is not a requirement to move forward with design and permitting.

XII. For Section 255.065(3)(c), Fla. Stat. review purposes:

These questions are outside the scope of section 255.065(3)(a)5, but are answered regardless:

1. *Please list all of the benefits to the public from the project.*

The project provides a route to improved water quality through the removal and containment of nutrient-laden sediments, as well as a method for long-term water quality improvements via the introduction of biological components into the canal system. The native vegetated islands will provide ongoing nutrient removal and provide a substrate for bivalve establishment, further contributing to improved water quality. The presence of the islands is expected to provide beneficial habitat for fish and other marine species that Marco Island citizens and visitors alike consider valuable. Dredging will also result in improved canal depths for navigation in areas with heavier sedimentation. The proposed project provides a multi-faceted solution to the incumbent water quality issue for a competitive cost to stakeholders, whereas other previously proposed alternative solutions may only address a few features at a relatively high cost. In addition to the above, the Proposal proposes significant public benefit in the form of assisting in obtaining funding for the project.

2. *Please describe the financial structure of the project, and explain any and all of the economic efficiencies that are part of the proposal.*

Article C. of the Proposal outlines the financial structure. A brief synopsis is that the Proposer will cover upfront costs for design, permitting, soliciting funding, construction, and the outlined maintenance and monitoring. These packaged tasks will ultimately be paid for by grants, donations, and appropriations. It is anticipated that some grants will stipulate matching funds, which will necessitate the City and Earthwerks negotiate the "Match Point."

The Hydraulic dredging and disposal of sediments has been estimated to be around \$190 million or greater, with a much larger and more significant disruption to residents' use of the canals. The proposed method of construction and the beneficial re-use of the sediments provide a much greater economic efficiency to the citizens of Marco Island. The proposal achieves the benefits of dredging for 30% of the cost independently estimated by ERD, then adds the long-term benefit of the living shoreline at no additional cost. The packaged nature of the Proposal retains key personnel through the typically independent tasks of design, permitting, construction, and establishment of habitat. Retaining key personnel between each of those typically independent phases dramatically streamlines project understanding and implementation adding efficiency and value at each transition. As mentioned above, eliminating the disruptive and cumbersome side effects of hydraulic dredging (including land use and construction duration) adds economic efficiency. The beneficial reuse of dredged spoils rather than costly mainland disposal adds economic efficiency, and the lasting benefit of the established habitats adds value.

3. *Please further explain qualifications and experience with regard to Florida water quality projects.*

Explain operational & maintenance experience if any.

All qualifications and experience have taken place outside the state of Florida, however the contractors involved in the project have significant experience in water quality projects in the Midwest. Regional requirements as they relate to licensure and certifications will all be in place prior to commencing activities requiring those certifications.

4. *Please further explain the compatibility with regional infrastructure plans.*

This proposed project is supported by objectives within the City of Marco Island's 2040 Comprehensive Plan, including maintenance of surface water quality within the canals (Infrastructure Element, Objective 3.3) as well as several tenets of the Conservation and Coastal Management Element put forth by the City of Marco Island (Objectives 1.1, 1.4, 1.5). Please provide copies of additional applicable regional infrastructure plans referred to by this question.

5. *Have any public comments been received to date, and how have they been addressed?*

Public outreach is ongoing, and during public hearings, questions and comments have been received. Public education, outreach, and engagement are expected to be an ongoing part of the project.