

## Attachment A

### Response to Request for Additional Information #2 File No. 0163447-002-JC

#### Introduction

Martin County and its Consultants provide this response to comments provided by DEP in RAI #2 for File No 0163447-002-JC, Bathtub Beach. The responses below include each question or comment, in plain, font, bold font, and italic font (as provided by DEP in its letter). Martin County's responses follow in bold italic font.

The responses contain two revised drawings that show the proposed 7-acre dredge template and a revised dredge pipeline route that avoids seagrasses. The figures provided here are copies. One set of signed and sealed originals of these figures have already been sent to DEP as part of the County's response to USACE comments , One of the two copies of the RAI responses submitted in this mailing provides a second set of signed and sealed originals for the two reviewed figures.

The RAI response package includes the following Attachments:

- Attachment A: This document, providing Martin County's response to each RAI question
- Attachment B: Permit application page 4 Section A with all signatures
- Attachment C: Revised permit level dredge template and pipeline drawings
- Attachment D: Revised Vibracore Data
- Attachment E: Photographs of Vibracores
- Attachment F: Revised Sediment Quality Assurance and Quality Control Plan
- Attachment G: Biological Monitoring Plan for the hardbottom habitat adjacent to Bathtub Beach. The Attachment includes the monitoring plan, a statistical analysis methodology for assessment of impacts, and application of that methodology to the baseline data, and the 2008 baseline monitoring report for reference.
- Attachment H: Notice of Application Proof of Publication

#### RAIs and Responses

*18. C. Signature of person authorizing access to the property; name of political subdivision, municipality, or business entity; and title of person signing on its behalf*

This signature has not been provided to date. Please submit a signed copy of this page by March 6, 2009.

***Response: Please see the fully signed permit application page in Attachment B.***

*27. Permit applications for excavation or fill activities shall include the following detailed information concerning the material to be excavated and the existing or native material at the beach fill site: Please note that this item will remain incomplete until the borrow area design is finalized.*

***Response: See Attachment C and response to RAI #33 below for final borrow area design and design***

*drawings.*

- b. Core boring logs of all cores taken throughout the area to be excavated and surrounding area. Logs should extend at least two feet below the proposed bottom elevation. The depth of each visible horizon in the log should be reported relative to NA VD (88) and the material in each stratum classified according to grain size.*

There is no recovery information provided on the core logs (Box 17 on the core log form). Please provide this information to ensure that the minimum standard of 80% recovery was met.

***Response: please see a summarysheet in attachment D that provides the recovery information.***

Cores V08-04, -06, -12, and -13 do not extend to a depth two feet below the proposed maximum dredge depth. What assurance is there that the material contained below these cores is beach compatible material?

***Response: Martin County believes that they have provided sufficient core information to assess the typical conditions in the proposed borrow area. Of the four cores with insufficient maximum depth, only one (V08—12) lies within the revised dredge template (see Attachment C: figure D1). As noted in that response, DEP received an original signed and sealed copy of the figure as part of the Response to USACE Comments document package sent to Merrie Beth Neely.***

Please provide photographs of the vibracores.

***Response: Please see Attachment E, providing photographs of vibracores. The contractor for the vibracores reported that the digital files of photographs for Cores V08-14 and higher, which locate in areas not proposed for dredging at this time, were corrupted during file transfer procedures, and that it could not provide them. Please note that Martin County will not use Borrow Area B for the currently proposed fill event, and that much of borrow area B has a relatively shallow layer of potentially acceptable quality sand. Discussions with Dr. Jennifer Koch, DEP, concerning Borrow Area B sand quality, resulting in the following verbal agreement:***

***Given the depth of sand and the color of the reported samples, Martin County agrees not to use Borrow Area B for this dredging event, and to perform additional sampling in Borrow area B should it propose to use that area in the future. Martin County understands that the DEP requires additional information to properly assess sand quality there, but requests that DEP allow Martin County access to Borrow Area B in a future event, assuming that Martin County provides additional sample analyses that demonstrate appropriate sand quality.***

- c. Particle size and color analysis of the sediment. Gradation curves, frequency distribution curves and data analysis sheets should be produced from sieve analysis of each stratum in the core. Grain size distribution must be determined down to the standard unit 230 sieve size. Color analysis of moist sediment should use Munsell system of hue, value and chroma.*

The color for the vibracore samples on the summary sheet (Table 2-3 of the GBA report on the borrow area investigation) does not always match the color noted on the core logs. This is especially true for those cores from Borrow Site B. In addition, the samples for each core included in the table is inconsistent compared to the dredge cut. Please correct this difference and report any changes in the borrow area that may result.

***Response: Please see attachment D for revised and corrected core log information***

f. A sediment QA/QC plan that will ensure that the sediment to be used for beach restoration or nourishment will meet the standards set forth in paragraph 62B41.007(2)(j), F.A.C.

The table on page 2 of the Sediment QA/QC plan does not cover all of the parameters for observation and testing of the fill material placed that are listed in under paragraph 6.b. on page 3 and paragraph 6.d. on page 4. Most notably, visual shell/carbonate content is not listed yet it is tested for.

Also on the table on page 2, the acceptance value listed for moist Munsell color value is 7 or lighter. Is this limit practical based on the color data provided for the beach and borrow area?

Paragraph 6.h. on page 4 notes that all samples shall be sieved, Does this apply to both the post-construction samples and the during construction samples? The option to sieve the during construction samples should unacceptable material be encountered should exist, but it does not have to be mandatory to sieve all of them.

In the Quality Control section regarding dredge location control, the tidal corrections should be real-time. Please delete the word `near' in reference to tidal corrections.

***Response: We have provided a revised sediment QA/QC Plan in Attachment F.***

31. *A current Biological Opinion from the US. Fish and Wildlife Service or the National Marine Fisheries Service, when the Florida Wildlife Conservation Commission has determined that the proposed project will result in a take of marine turtles, which could not be authorized without an incidental take determination under federal law.*

We acknowledge you have requested a Biological Opinion. Your application will remain incomplete until this has been issued and reviewed by the Department.

***Response: We will provide the Biological Opinion when issued.***

33. *Analysis of the expected effect of the proposed activity on the coastal system including but not limited to:*

- b. *Analysis of the compatibility of the fill material with respect to the native sediment at the placement site. The analysis should include all relevant computations, the overflow ratios, and superimposed graphs of the cumulative grain-size distribution and the frequency distribution of the fill material over the data for the existing or native sediment at the placement site. Provide computations of borrow area volume and composite fill material characteristics (mean grain size and sorting, percent carbonate content) in an electronic spreadsheet.*

This item will remain incomplete pending response to the comments under Item 27.

***Response: See information provided above for Item 27.***

- d. *Analysis of how water quality and natural communities would be affected by the proposed project. Provide graphic representation (depiction) of the area of direct and secondary influence of the proposed activity and delineate the natural communities within that area.*

*All required surveys shall be representative of conditions existing at the time of submittal. Surveys of submerged aquatic vegetation (SAV) shall be conducted in the field during the growing season for a given climatic region such that they capture the full areal extent and biomass of the SAV community. Species composition and spatial distribution shall also be addressed by the survey. Estimate the affected acreage of each impacted community.*

Please see the comments under 35 below.

Please submit a Biological Monitoring Plan for review. This item must be approved by the Department prior to permit issuance.

***Response: Please see Attachment G, a biological monitoring plan. A statistical analysis of the baseline data accompanies the plan. The statistical analysis methodology provides for post-construction assessment of impacts to the biological communities using baseline data and that collected in the future. Attachment G also includes the 2008 baseline monitoring report for the reader's reference. The baseline data set used in the statistical analysis includes that data and compatible, site-specific biological data collected since 2002 by Dr. Dan McCarthy, Jacksonville University. Dr. McCarthy and Dr. Vladimir Kosmynin, DEP, designed the baseline monitoring field effort.***

The Department acknowledges receipt of the DREDGE/ADDAMS model results that suggest you should be able to meet ambient turbidity conditions at the edge of a 150-meter mixing zone at the dredge site. The Department has the authority to grant the 150-meter mixing zone, so you do not need to request a variance for the 150-meter mixing zone, nor is a variance justified at this time. However, certain model inputs and outputs might be reviewed for a more accurate assessment. For example, a turbidity level of 0.7 NTUs above background seems very low for a plume generated at the point-of-dredge, even for coarse sediments. It is noted that the model results submitted to the Department were only for surface values (water depth of 0.1 meter); perhaps the turbidity plume at mid-depth or one meter above the bottom should be considered, as these are depths at which the Department may require monitoring. On the other hand, you suggested that a R74 value of 0.8% would be used as a conservative estimate (i.e., yielding higher turbidity). However, the 'Input Data Summary' shows a fraction of 0.1, corresponding to an assumption that 10% of the material is less than 74 micrometers in diameter. This borders on being unrealistic, and so does not help justify the full extent of the requested mixing zone. If a realistic re-analysis suggests that background turbidity levels may not be met at the edge of the 150-meter mixing zone, please re-assert your desire for a variance. Else, we will review your request for the 150-meter mixing zone(s) in light of the submitted data.

Also, the Department acknowledges that identifying dredge-generated turbidity at or near background levels can be problematic due to natural variations in turbidity. If you wish the Department to consider an allowance above zero (0) NTUs over background for compliance purposes, please submit data that exemplifies the natural variations in turbidity over distances of approximately 300 meters to 500 meters in the vicinity of the dredge site during various tidal stages.

***Response: We have discussed the above comments with DEP, and believe that the model represents worst-case conditions and shows that a 150-m mixing zone will provide sufficient area for safe dredging operations. We understand the DEP desire for independent background turbidity data. At this time, Martin County will assume that turbidity compliance will occur with zero (0) NTU over background. If the County decides to collect background data prior to the start of the project, it will coordinate with DEP on locations and level of effort to ensure provision of appropriate and acceptable data concerning background conditions in the project area.***

35. Describe any methods proposed to protect threatened or endangered species.

The following additional information is required by the Department and specifically at the request of the Florida Fish and Wildlife Conservation Commission to complete their review of this project.

- i. It is our understanding that you have been working with state and federal biologists to address the recently raised concerns about the borrow shoal being used as piping plover habitat; and that the actual area to be dredged will be modified to minimize, or to completely eliminate, disturbance to piping plovers and their foraging/roosting habitat. The current proposed borrow area contains 300,000 cubic yards of material. The project need is 25,000 cubic yards. Recognizing that this is a 5 year permit that allows more than one event, the borrow area contains much more volume than likely needed for the project life. Please provide copies of the revised dredge plan for our review.

***Response: The proposed borrow area provides sufficient size for repeated dredging events, assuming the following:***

- ***In any single dredging event, that the sand quality within the approved dredge template may not be uniform and that the dredge may have to avoid some areas within a particular dredge template.***
- ***That a dredged area for a single event may not completely fill in between one event and the next event.***
- ***That the shoal will, as is often the case over relatively long periods of time, move around, this changing the depth and location of high quality sand, and location of natural resources that the County must avoid.***

***Thus within the proposed borrow areas, the absolute amount of apparently available sand does not necessarily reflect the sand available at any particular time. Please note that in the current proposed project, a large portion of Borrow Area A has been avoided because it may function as piping plover foraging habitat. Much of the intertidal area being avoided did not exist in August 2008 when surveyors surveyed the shoal the first time. However, this may change in the future, and the site now avoided may provide an appropriate dredging site in the future. Please see Attachment C: revised permit drawing D-1, for the 7 acre dredge template proposed for this dredging event. Martin County has provided an original signed and sealed drawing to DEP and the appropriate federal agencies as a signed and sealed drawing included in the Response to USACE Comment package recently sent to Merrie Beth Neely.***

- ii. It has recently been suggested by state biologists that there is a concern for biological resources in the pipeline corridor. Was the pipeline corridor area part of your biological survey performed in August 2008? If so, please provide the details of the resources in those areas and include a specific plan for pipe placement to ensure that the corridor is sited within areas devoid of sea grasses for this event. The dredge pipe can also be elevated where necessary to avoid SAV. Please note that we have asked for some clarification on the availability of resource maps for this area by the aquatic preserve and other state biologists that raised these concerns, but the results are still pending at this time. The buffer around sea grasses should also include emergent grasses along the shoal. Smooth cord grass has recruited to the shoals in the inlet and state agencies are concerned that it also be protected during dredging. Areas with submerged and emergent vegetation in the borrow area and pipeline corridor will need to be defined for agency review prior to each future dredging event as a notice to proceed item.

***Response: Martin County has proposed a 100-ft buffer adjacent to seagrass beds. The DEP has***

*approved this distance for recent dredging projects adjacent to similar resources in Florida Aquatic Preserves. We believe that this project and the project location are not significantly different to those other projects, and that a 100-ft will provide sufficient protection for natural resources in this area.*

*Martin County revised the dredge pipeline (Attachment C: revised permit application drawing D-4) to avoid seagrasses. Martin County has provided an original signed and sealed drawing to DEP and the appropriate federal agencies as a signed and sealed drawing included in the Response to USACE Comment package. The pipeline passes from the proposed 7-acre dredge template across areas surveyed in summer 2008 and found not to contain seagrasses. It then stays within (at the edge of) the Sailfish Point Channel, and follows the dredge pipeline path currently being used in the Sailfish Point channel dredging activity, Permit No. 43-297169-9.*

*Martin County understands that the state and federal agencies will likely require that Martin County conduct a seagrass survey and other natural resource evaluations for any subsequent proposed dredging event.*

- iii. Please provide a summary of the dredge process and supporting information, including anticipated dredging frequency, periodicity, volume, and timing, that will be required prior to future dredging to assess potential impacts to foraging habitat for piping plover. Any subsequent dredging activities in the requested five (5) year permit should require submittal of updated bathymetric surveys as well as proposed pipeline corridors. The dredging area footprint for this and subsequent events should be the area with the least diversity of invertebrate infauna/epifauna to further reduce impacts to piping plover due to removal of potential foraging areas.

*Response: As detailed in the permit application package, the project does not assume a dredging frequency, periodicity, volume, or timing, other than as necessary to protect essential infrastructure at Bathtub Beach County Park, and MacArthur Boulevard, which provides the sole access to the Sailfish Point Community to the south. The erosion that resulted in the proposed project has come within about 25 feet of MacArthur Boulevard, eroded part of the County Park including the shore dune and dune vegetation, sidewalks, and parking spaces. The erosion has damaged County Park structures. The purpose of the project is to place enough sand to stabilize the site and protect essential infrastructure. The proposed design requires about 25,000 cubic yards. The County assumes that this represents a reasonable estimate of a typical project, assuming that additional erosion does not occur prior to receipt of a permit.*

*The current dredging footprint avoids intertidal areas of value to piping plovers and other shorebirds that forage in this habitat. A current piping plover survey, designed and executed by Martin County in cooperation with Jeff Howe, USFWS, and the Martin County Audubon Society, will provide a better understanding of the habitat use of this intertidal area. Note that the study only covers a small portion of the total potential habitat in the flood shoal, which covers over 1,000 acres; no one has quantified the total amount of intertidal habitat in the entire area, which would help scale the potential importance of the intertidal area we are discussing here.*

- iv. While the proposed fill design is not expected to contribute to escarpment formation, does the proposed design allow adequate access to suitable nesting beach - areas seaward of the 5:1 slope, without increasing potential for overwash for any nests deposited in the more seaward slope? Does the design adequately limit the ability of nesting females or hatchlings to access the areas landward of the fill placement? What efforts have been made in the design process to prevent turtles from crawling beyond the dune? This concern is especially focused on cross sections 34 C and D at the northern end of the project. In cross sections 34 E and G this might be alleviated by tying the beach sand placement into the dune to avoid these issues, as a suggestion.

*Response: The permit application package details the intent of the design to achieve the pre-existing beach slope and general profile immediately, based on 30 years of DEP monument data. This design also minimizes the volume of sand placed to avoid impacts to adjacent hardbottom resources. The design allows more access to suitable nesting beach than currently present, and about the same amount of nesting beach as recently (pre-erosion) available, based on R-monument profiles used to develop the design. The design does not increase or decrease nest overwash potential compared to the recent pre-existing conditions.*

*The design includes preservation of any remaining vegetation (primarily sea grape - Coccoloba uvifera) on the dune crest and landward slope, and replanting the dune crest and landward slope with sea grape on 3-ft centers otherwise. The proposed dune seaward face planting include sea oats. See figure B-9, permit application drawings, in the DEP RAI #1response package for this project.*

*The northern end of the project comprises a very small dune. There is little space to place or alter the current placement of sand, given the location between the homes and the hardbottom habitat.*

39. A fee, as set forth in Rule 62B-49.006, F.A. C.

This **\$9,000 application fee** (50% cost share applied to 62B-41 portion) is due by **February 6, 2009**, 45 days from your response to the first RAI, pursuant to Rule 62B-49-006(2), F.A.C. Please also provide your notice of application proof of publication at that time. In the future, if you feel the fee calculation should be revised, please contact Bureau staff PRIOR to submitting your RAI response.

*Response: Martin County has submitted a \$9,000 application fee in a separate mailing. Attachment H includes the notice of application proof of publication. The previously submitted information did not correspond to DEP requirements concerning the format of the proof and that the newspaper submit the proof to them..The newspaper would not submit the proof of publication to the DEP, but only to Martin County. Therefore, we have attached that information here, and hope that DEP accepts this evidence in spite of the fact that it comes from Martin County.*