

(BS-0037) East Delacroix Marsh Creation and Terracing 30% Design Comments

1. Does the past 5 years of water data for CRMS 0146 differ at all from the full data set? (p.15)

The mean water level from 2014 to 2021 is +0.36', +0.28', +0.78', +0.61', +0.46', +0.7', +0.8', and +0.68' NAVD88 GEOID 12A respectively. The MWL for the past 5 years appears to be slightly higher than previous records from the data set/period of record analyzed.

2. Is there any reason as to why the 10% inundation level and the MHW seems to be so different? Normally the levels are fairly close, like the MLW and the 65% inundation level. (p.17)

The delta in inundation level elevations is fairly consistent with other CRMS sites in the area. These values were calculated with the original CRMS data set.

3. Data sheet for the Secondary Monument seems to not be provided in Appendix D. Please provide. Also, Appendix D-2 is labeled BS-41. If multiple projects were surveyed, suggest stating that in the report if not already stated. (p.18)

CPRA will provide secondary monument (BS-0032 SM) data sheet in the 95% design package.

4. Section 3.4.2, 2nd Paragraph - When is the direct physical examination of the identified sunken vessel anticipated to take place? (p.23)

The project team does not anticipate additional surveying of the sunken vessel, the project team has decided to utilize an avoidance area with respect to dredging near the vessel.

5. Will the existing tidal levee proposed to be utilized as containment be lifted to ECD specs or levee specs? (p.28)

Separate levee specifications will be utilized. The specifics will be coordinated with St Bernard Parish.

6. Section 5.1.2 - Was the weight of water during construction used to determine the foundation settlement? If a small dredge is used, then the duration of time to fill the material may affect foundation settlement, which could lead to less foundation settlement of the deeper soils. Is the program limited in what can be performed? (p.39)

The weight of water is included in the slurry weight. The water table is set to the MHW at twenty years or +1.5 ft. NAVD88 in Settle 3 and PSDDF. The project team attempted to mimic the slow loading of the foundation by the cutter suction dredge utilizing PSDDF and Settle3 in the original geotechnical analysis. Please refer to section 5.1.4 and figures 30 & 31 in the 30% design report for additional information.

7. 2nd paragraph, last sentence - What additional analyses is this referring to? Would the analyses be for confirming the current analysis, or seeing if PSDDF provided something similar to Settle3? (p.40)

The additional analyses planned for 95% includes a sensitivity analysis using Settle3 with alternative loading schemes, different mudline elevations, adjusting soil design profiles, and adjusting foundation and load layer thicknesses. The sensitivity analysis is also anticipated to include modelling all settlement (self-weight and foundation settlement) in PSDDF.

8. Section 5.1.3 - Why was the initial concentration selected to be 151.2 g/L? (p.40)

The initial concentration of the column settling test was selected following the Column Settling Test Procedures (EM 1110-2-5025) written by USACE. This low concentration allows for the identification of the four different settling types.

9. Section 5.1.4 - Why was 330 g/L used in this section when the previous section mentioned 151.2 g/L? What was the thought process to go from 151.2 to 330 g/L? (p.41)

It is expected that the contractor will operate at a concentration higher than 150 g/L. A higher concentration was selected, in order to estimate the most representative real world concentration/fill elevation at the time of process survey or acceptance survey of the marsh fill. This concentration is based on past project in-construction sampling and conversations with dredge operators.

Field sampling and monitoring during construction could be used to calibrate/verify settlement modeling. To reduce risk and uncertainty once in construction. The actual concentration of the fill material being placed within in the fill area varies depending on the means and methods of the contractor.

Also, there is greater difficulty performing low stress consolidation testing at such low concentrations.

10. Section 5.1.4, 2nd Paragraph - Where did the three filling durations come from? (p.41)

The three filling durations were chosen to capture a range of potential filling rates for the MCAs. The three estimated filling durations represent a production rate between 8,000-25,000 cy/day. These durations represent an estimated time that the marsh fill will stack vertically and horizontally within the discharge area as the contractor moves the outfall location. Filling durations and CMFEs may be adjusted for 95%.

11. 1st paragraph - Past projects that accounted for accretion assume that the marsh platform starts accreting at around TY 5-8 based on the study by the CPRA Lafayette Field Office. Is there new evidence that suggests accretion could start as early as TY 2 once the marsh platform is below the 10% inundation level? (p.44)

Assuming the finished MCA settles into the optimum inundation range and naturally vegetates during TY1, it is feasible that accretion processes could begin in TY 2. However, to be consistent with past projects, this language will be removed and will follow guidance from Leigh Anne Sharpes' study. To clarify, volume calculations do not take into account elevation gain from accretion.

12. Due to the type of soils present in the area, did the project team consider reducing the terrace spacing (280 ft.) from centerline to centerline to reduce the wave height between terraces? Suggest 200-250 ft. spacing to still allow for enough material to borrow for building terraces. (p.49)

The project team will consider reducing the spacing between Terraces in the Terrace Field during 95% design.

13. Section 5.5, Paragraph 3 - What further optimization of the final dredge cut borrow area footprint emphasizing regional sediment management is being referred to? (p.51)

The updated borrow area footprint will be reduced in size to provide future marsh creation projects with an undisturbed remaining portion of the borrow area in Lake Lery.

14. Section 6.3 - Suggest adding statement that some tasks in Table 21 are concurrent with other tasks. (p.63)

CPRA will add statement about concurrent tasks in the construction schedule for 95% design.

15. Was the cost estimate provided for review? If not, please provide.

The project's federal sponsor provided the cost estimate to the CWWPRA workgroups when the 30% design package was posted.

16. Revise Mud Line (ML) and rerun settlement curves by MCA (i.e., separate ML per MCA)

In progress.

17. Revise the instantaneous assumption

In progress.

18. Address in the report and in a comment log why accretion was not included; Stephen's in-mtg explanation was insufficient (J. Smith: Accretion is addressed in Section 5.1.6 (pg.43 of the report))

Accretion is addressed in Section 5.1.6 (pg.43 of the report). Typically, the decision to include or exclude accretion in settlement/volume analysis is directed at the federal sponsor's discretion. The decision to exclude accretion in the preliminary design was reviewed and agreed upon by the entire project team.

19. Why all ECD borrow interior? Although there is insufficient space to provide all the ECD volume, isn't there room for some exterior borrow between the MCAs for the pump station discharge while allowing stability berms.

The project team will consider external borrow at the pump station channel for the 95% design. It is important to note the pipeline that crosses the proposed pump station outfall canal which would require excavation buffers leaving a "hump" in the channel that could be subject to scour during extreme events which could expose the pipeline in that section.

20. Verbal justification during the meeting for the sediment retention terrace was lacking. Include in the report and log what the conceptual dewatering plan is to justify the sediment retention terrace addition to this project. What other options than building X LF of ECD for the dewatering area were evaluated? Is it worth it financially? There is risk that it will be gone by the time N. Delacroix is constructed to realize containment benefits to that project.

The Sediment Retention Terrace (SRT) was a project feature proposed by NOAA and designed as agreed upon during project meetings the following purposes for BS-0037. The conceptual plan for the SRT is described in Terrace Design (section 5.4) of the design report.

1. Protecting the existing vulnerable marsh that is not receiving sediment. 2. Capturing sediment from dewatering marsh fill that would otherwise escape and considered losses. 3. Reduces wave action from eroding the Delacroix tidal levee.

In-situ mechanical dredging will provide the best cost/benefit solution. Unfortunately in coastal Louisiana, there is always a risk that the project site will change drastically between design and construction. As a risk reduction measure, preconstruction surveys will be performed prior to any excavation or containment construction, so in a worst case scenario the project team would have to make an adjustment to the alignment and/or need for the SRT at that time.

21. What is CPRA and the Eng Wg's plans for dealing with fuel prices in cost estimates other than using a line formula with the latest bids? Has there been any team level discussion on competing or not this year to avoid high fuel prices and obligation burden?

As discussed on the 6/24 call with multiple federal agencies, the anticipated path forward is that the bids will be approved by the appropriate CWPPRA workgroups and Tech committee (if additional funds are required). Additionally, it is imperative that the CWPPRA Program agree on programmatic changes across the board to ensure proper contingency and adjustment of unit costs to account for recent commodity and labor shortages/price increases.

22. Check to see if the terrace crown is high relative to the design goal and that goal relative to other terraces (e.g., CWPPRA and DU, the BS-38 lake berm).

The crown elevation of the terraces will be re-evaluated for 95% design.

23. For 95%, include callout offset from the BA to the existing pipeline (J. Smith: addressed in Section 3.4.2 pg 24 of the report)

Addressed in Section 3.4.2 pg 24 of the report and shown in the Plans.

24. Plans & Specifications for 95%, need specs to ensure full cut and not leaving a minor cut over a large portion of the BA thus impacting future use of remaining volume (J. Smith - we had this issue on the Bayou DeCade project)

The borrow area footprint will be reduced to maximize sediment availability for future Lake Lery restoration projects. Additionally, the specifications will instruct the dredging contractor to utilize best sediment management practices to minimize "less than full depth cuts".

25. Document and identify in the report who has been coordinated to approve use of the tidal levee as containment; need clarity on approval of the local levee as containment; seek a letter to append to the 95% design report.

Meeting minutes from an 11/20/2020 meeting with St. Bernard Parish note that they are in favor of CPRA utilizing the tidal levees for containment. St. Bernard has previously offered to raise the low sections of levee ahead of BS-0037 construction provided the project team shares the collected survey data and specifies the areas requiring a lift. Representatives from the project federal sponsor were in attendance at this meeting.