

Appendix O

QUALITY CONTROL



**Quality Control Plan
for
PREPERATION OF
The FEASIBILITY SECTION 203
For The
INTEGRATED FEASIBILITY REPORT AND
ENVIRONMENTAL IMPACT STATEMENT FOR
THE HOUMA NAVIGATION CANAL DEEPENING
PROJECT
IN
TERREBONNE PARISH, LOUISIANA**

Prepared for:

**Louisiana Department of Transportation and
Development**

Prepared by:



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Initial Submittal: 7/13/17

1. Project Information:

Project Name: Integrated Feasibility Report and Environmental Impact Statement (IFR/EIS)

Project Location: Terrebonne Parish, LA.

Project Description and Purpose: On behalf of The Louisiana Department of Transportation and Development (DOTD), GEC has developed this Section 203 study to determine the feasibility of deepening the Houma Navigation Canal Federal project and to identify the National Economic Development (NED) plan. The NED plan has the greatest net economic benefits consistent with protection of the Nation's environment. This feasibility study has been developed together with an EIS as required by the National Environmental Policy Act of 1969.

2. Product Description:

The HNC Deepening Project IFR/EIS follows the United States Army Corps of Engineers (USACE) six-step planning process specified in the USACE Planning Guidance Notebook (ER 1105-2-100, dated 22 April 2000). The planning process identifies and responds to problems and opportunities associated with Federal objectives and specifies state and local concerns. These steps include:

- Specify water resources problems and opportunities;
- Inventory, forecast, and analyze the water and related land resource conditions within the study area;
- Formulate alternative plans which address the identified problems and take advantage of the opportunities;
- Evaluate the effect of alternative plans;
- Compare alternative plans; and
- Select the recommended plan.

3. Purpose and Scope of Quality Control Plan (QCP):

Purpose: This QCP outlines the professional expertise, technical criteria and technical review processes that will be used to produce a quality product satisfying technical, functional, legal, safety and environmental requirements.

Scope: The QCP quality control effort will include the following considerations:

Consequences of a failure:

At present, the depth of the channel causes marine interests to use less efficient methods to service the offshore oil and gas facilities located in the Gulf of Mexico. These inefficiencies manifest themselves as light loading and/or use of more remote harbors with deeper channels. Deepening the channel would eliminate these inefficiencies.

Many and varied businesses are located along the approximately 41 miles of the HNC south of Hwy 661. The navigation needs of many of these firms are not being fully met by the existing dimensions of the channel. Most of the current traffic on the canal is composed of motorized boats used for support of the offshore oil and gas industry, including support vessels, tug/tow boats, as well as local area commercial fishing vessels. Almost all of the remaining tonnage on the HNC is composed of petroleum barges and barges carrying gravel. Over a 3-year period of 1996 through 1998, vessel traffic declined an average of 7.5 percent annually. However, offshore oil and gas activity grew during this same period. This trend implies that activity on the HNC will stabilize and remain there well into the future if no changes are made to the channel because inefficiencies in navigation manifest themselves as light loading and/or use of more remote harbors with deeper channels. Therefore, quality control of all design, analysis and development of plans and specifications are critical to achieve the successful completion of the deepening of the HNC to reduce future waterborne transportation costs and allow the efficient passage of large oil and gas sector barges, new vessels built at the Houma shipyards, and vessels working in the Gulf of Mexico.

Nature of work: This quality control effort will include:

- Quality Control reviews of all reports, plans, and specifications by the Project Delivery Team (PDT).
- Quality Assurance reviews of reports, plans, and specifications by the A/E Quality Review (AEQR) team.

Risks inherent in the project:

The proposed project does not appear to involve any significant challenges. Dredging methods are standard and have been applied numerous times at HNC for past dredging projects and Operations and Maintenance dredging. All institutional requirements are in place and have been utilized for past projects. No social impacts or challenges are anticipated.

Any crucial design features: The proposed access routes used to pipe material from the channel to disposal sites will be reviewed.

Lessons Learned incorporated: All lessons learned during the study phase of this project will be documented throughout the development of the combined Feasibility Report and EIS to provide information which could improve future projects.

4. Deliverables:

- Draft and IFR/EIS

All deliverables shall be compiled and provided in electronic form.

5. Technical Criteria and References:

Technical Criteria:

a. Cost Estimates and Risk Analysis:

- ER 1110-1-1300, Cost Engineering Policy and General Requirements, Mar 1993
- ER 1110-1-8, Vol. 3, Construction Equipment Ownership and Operating Expense Schedule (Region III), Nov 2009
- ER 1110-1-8, Vol. 3, Construction Equipment Ownership and Operating Expense Schedule (Region III), Errata #1, Sep 2007
- ER 1110-2-1302, Engineering and Design - Civil Works Cost Engineering, Sep 2008

6. Product Delivery Team:

The PDT is led by an experienced leader who has designed or led PDTs in the successful completion of similar work. Other PDT members have extensive professional experience in their assigned responsibilities. Should future requirements require the application of different skills or experience, appropriate personnel will be added to the PDT.

PDT					
Name	Registration (EI, PE, Etc.)	Registration Discipline	Job Title	PDT Area of Responsibility	Years of Experience
Jonathan Puls	PE (LA)	Civil	Project Manager	Project Manager/Civil/Environmental	8
Eddy Carter	PE (LA)	Civil	V.P./Project Manager	Project Management	31
Nicole Forsyth	EI (LA)	Civil	Project Engineer	Civil/NEPA	5

6.1 Technical Review Procedure:

- PDT teams will review and verify information provided by the Government and other agencies.
- A thorough review of plans, specifications, planning procedures, and recommended plans will be conducted at each stage before submitting for A/E Quality Review process.
- Any comments originated through the AEQR process, which will be addressed before submission of the combined document to ASA.

7. Customer Involvement:

The PDT will engage and involve other appropriate USACE organizations, Federal agencies, state and local governments, local utility and infrastructure agencies and local citizens groups & associations, to keep them informed and to solicit their feedback and assistance. This involvement includes formal meetings and presentations, formal reviews, informal meetings and discussions, teleconferences, emails and telephone conversations. Customer involvement at all levels is vital to instill confidence that the customers' needs are being addressed and the recovery efforts are of high quality. The PDT is strongly encouraged to include personnel from the Local Sponsor's staff and from other Federal agencies. Partnering with the Local Sponsor is a key element during the design of a project. Our customers are key members of the PDT. Partnering shall occur during all phases of project development.

Customers/Key PDT Members*		
Organizational/Assigned PDT Member	Title/Organization	Contact Information
Sharon Balfour*	Waterways Program Director	sharon.balfour@la.gov
Molly Bourgoyne*	LADOTD	Molly.Bourgoyne@LA.GOV
David Rabalais*	Executive Director TPC	davidr@terrebonneport.com
Chris Collins*	LADOTD	Christopher.Collins@LA.GOV
Phil Jones*	LADOTD - Deputy Assistant Secretary	Phil.Jones@LA.GOV
Marti Lucore*	USACE	martha.m.lucore@usace.army.mil
John Eblen	USACE	John.L.Eblen@usace.army.mil
Eric Salamone	Cost Engineer	Benjamin.E.Salamone@usace.army.mil
Miguel Ramos	Cost Engineer	Miguel.A.Ramos@usace.army.mil
Sandra Stiles	Environmental - USACE	Sandra.E.Stiles@usace.army.mil
Erin Clark	Real Estate - USACE	Erin.A.Clark@usace.army.mil
Patricia Leroux	Environmental - USACE	patricia.leroux@usace.army.mil
Austin Feldbaum	CPRA	Austin.Feldbaum@la.gov
Ronnie Paille	Biologist - USFWS	Ronald_Paille@fws.gov

* These customers are key members of the PDT.

8. A/E Quality Review (AEQR):

- The review shall be performed by a qualified person or team not involved in the day-to-day production of the project/product.

AEQR Team					
Name	Registration (EI, PE, Etc.)	Registration Discipline	Job Title	PDT Area of Responsibility	Years of Experience
George Hudson	PE (LA)	Civil	Technical Lead	Technical Lead	30
Lee Walker	N/A	N/A	Environmental	Environmental	15
Jay Richardson	PE (LA)	Civil	Civil	Civil Engineering	12

- All the comments from AEQR will be documented. Comments will be structured to give clear statement of the concern, the basis of the concern and, when appropriate, necessary actions will be taken to resolve the concern. Comments will cite appropriate references. The PDT will evaluate and respond to each comment, with responses clearly stating concurrence or non-concurrence with the comment. Concurrences shall include what the corrective action is and where and when it will be done. Non-concurrences shall include an explanation or proposed alternative action.
- The AEQR will be done as continuous throughout the planning process and prior to DOTD review of the product being submitted not concurrent with the DOTD review.
- All changes resulting from the AEQR team will be accomplished prior to initiation of submittal to the ASA.
- Documentation will be provided for all AEQRs, consisting of a completed (signed) statement of technical review and certification, to which is attached all review comments (identified by the Reviewer) and the response of the designer to the comment. Documentation will be submitted concurrently with the final design product.

9. DOTD Reviews

GEC, Inc. will support the following DOTD reviews.

- Submittal Reviews.

Support will consist of the following activities.

- Respond and resolve review comments.
- Revise product design and documentation as needed based on resolution of review comments.

10. ⁽¹⁾Schedule/Checklist:


	ITEM	SCHEDULE DATE	ACTUAL DATE	COMMENTS
1	Quality Control Plan	July,2017	TBD	
2	Agency Technical Review (ATR) Completion	July, 2017	TBD	
3	IEPR	August, 2017	TBD	
4	Cost DX Certification	August, 2017	TBD	
5	Feasibility Report and Environmental Impact Statement to ASA	September, 2017	TBD	

⁽¹⁾ See Attachment 1 for complete Schedule/Checklist

11. Record Maintenance:

- a. All reviewed and accepted documents, contract drawings and other project-related materials shall be provided in electronic form upon request for purposes of PDT review during project development and delivery and in order to compile the Feasibility Report which will compile all project information for future reference and retrieval.
- b. The following QC documentation will be provided to the Government, in both hard copy and electronic format:
 - The initial QCP and any changes during the design process.
 - AEQR review comments, resolution of comments, and statement of technical review and certification (concurrent with final submittal of design product).


12. Signatures:



Eddy Carter, P.E.
Vice President
A/E PDT Team Leader

7/13/17

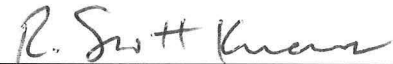
Date



George Hudson, P.E.
A/E AEQR Team Leader

7/13/17

Date



R. Scott Knaus
Executive Vice President
A/E Principal

7/13/17

Date

A/E QUALITY REVIEW (AEQR)

1. Performance:

a. The AEQR team will be representative of all disciplines involved in the planning process. Each reviewer will be personally experienced in the type of analyses for which they have review responsibility. They will not be personally associated with the development of the product under review. Discussion of the qualifications of reviewers need not be included in the QCP, however the designer will provide such information to the Government upon request.

b. The AEQR team will confirm the proper application of clearly established criteria, regulations, laws, codes, principles and professional practices. The team will verify that:

(1) The concepts, features, methods, analyses and details are appropriate, fully coordinated, and correct.

(2) An appropriate range of feasible alternatives are evaluated

(3) The problems/issues are properly defined and scoped

(4) The analytical methods used are appropriate and yield reliable results

(5) The results and recommendations are reasonable, within policy guidelines, and supported by the presentation

(6) Any deviations from policy, guidance, and standards are appropriately identified and have been properly approved.

2. AEQR Documentation: *Documentation of the AEQR will consist of a completed (signed) Statement of Technical Review, to which is attached all review comments (each identified by the reviewer) and the response to the comment.*

3. Submittal Requirements: AEQR Completion Certificate (attached) shall be submitted with Feasibility Report and Decision Document.

STATEMENT OF COMPLETION OF A/E QUALITY REVIEW (AEQR)

GEC, Inc. has completed the Integrated Feasibility Report and Environmental Impact Statement for the Houma Navigation Canal Deepening Project in Terrebonne Parish, LA. Notice is hereby given that an independent quality review, that is appropriate to the level of risk and complexity inherent in the project, has been conducted as defined in the QCP. The AEQR included review of: assumptions; methods, procedures, and material used in analyses; alternatives evaluated; the appropriateness of data used and level obtained; and reasonableness of the result, including whether the product meets the customer's needs. The AEQR was accomplished by an independent team from **GEC, Inc.** All comments resulting from the review have been resolved and documented.



George Hudson, P.E.
AEQR Team Leader

7/13/17
Date



Jonathan Puls, P.E.
A/E Project Manager

7/13/17
Date

CERTIFICATION OF A/E QUALITY REVIEW

Significant concerns and the explanation of the resolution are as follows:

None.

As noted above, all concerns resulting from independent technical review of this engineering product have been fully resolved.



Knaus
Executive Vice President
A/E Principal

7/13/17
Date

R. Scott

QUALITY CONTROL COMMENTS

George Hudson

Executive Summary

- 1) Needs a better description on the disposal plan in the upland reach for the TRP. On the upper reach the disposal plan for all deepening alternatives will have beneficial use (BU) of the dredge material. The disposal plan has beneficial use of the disposal material by creating marsh. May need to define the Lower reaches. Open water of bay and off shore.

Concur - Additional language was added to the Executive Summary

- 2) Page ES-ii the 2nd paragraph “tentatively recommended plan” needs to be in caps

Concur – The referenced phrase was corrected

- 3) Page ES-ii the 4th paragraph Tentatively Recommended Plan needs to be TRP

Concur – The referenced phrase was replaced with an acronym

- 4) Page ES-iii the 4th paragraph Existing open water would be converted into marsh With the placement excavated dredge material in the designated disposal sites on the upland reach open water bottom would be converted to marsh.

Concur – The referenced language was replaced with additional language similar to what was provided.

Section 4 Formulation and Evaluation of Alternative Plans

- 1) Section 4 is called HNC section 5 The Text is section 4 and the Title at the bottom of the page calls it section 3 (see bottom of Page 4-1

Concur – The referenced footer language was modified appropriately

- 2) Page 4-14 at the bottom of the page Move “The study objectives are:” to the top of page 4-15

Concur - The referenced language was relocated as suggested.

- 3) Section 4.2.5.2.1 (page 4-17) second sentence consider changing “placement measures” to beneficial use of dredge material.

Concur – The referenced language was modified as suggested

4) Section 4.4.4 Tables 4-10 to 4-14 should be consistent in line weights and shading

Concur – The table formatting was corrected

5) Section 4.4.5.1 Figure 4-1 is not labeled

Concur – The labels on all tables were corrected or added

6) Section 4.13.2 Figures 4-2 and 4-3 are not labeled. Should Figure 4-3 (South End) show the Beneficial Use Alternatives? It is not part of the TRP

Concur – The beneficial use areas were omitted from the referenced figure.

7) Section 4.13.2.2.1 the text As a result of **HET** screening process... Has **HET** been defined?

Information Provided – Yes, HET has been previously defined.

8) All Figures should be labeled as 4-1, 4-2 ect

Concur – All Figures were updated with similar formatting

9) Tables 4-27 and 4-28 should be consistent in line weights and shading

Concur – All Figures were updated with similar formatting

10) Table 4-28 in the last column the last 5 rows should line up

Concur – All Figures were updated with similar formatting

11) Section 4.13.2.6.1 what is LER Requirements?

Concur – LER was modified to be “LERRDS” as previously defined.

Section 5 Affective Environment

1) Section 5.1.2 2nd paragraph returning to levels seen in 2005 and 2996 (should be 2006)

Concur – The referenced date was modified

2) These Tables 5-16, 5-17 and 5-18 don't match the match the disposal sites in section 4 (Figures 4-2 and 4-3)

Concur – The referenced tables were corrected to show the correct disposal sites

Section 6 Environmental Consequences

1) Page 6-35 Section Alternative 1A 2nd paragraph needs the Date

Information Provided – The appropriate date will be added once the referenced acceptance is received.

- 2) Page 6-42 Section 6.4.13.1 Are the construction dates and future dates the most current date?

Information Provided – All dates shown are correct.

- 3) Page 6-47 Table 6-9 - Are the dates current?

Information Provided – All dates shown are correct.

- 4) Section 6.91 last paragraph does apply? TRP does not use these disposal sites

Information Provided – All dates shown are correct.

Jay Richardson

- 1) Section 3.3.5.1- Is there a plan of how/when salinity management will go into effect?

Information Provided – The management plan for the lock is not currently available. An operation plan will be developed during the Engineering and Design phase by the Corps. The lock is an authorized project and therefore, is being treated as an existing condition.

- 2) Section 4.2 - Is the 2mph constraint due to low water, or wakes from high water situations?

Information Provided – The speed was chosen as a typical transportation speed for a barge of the specified size. This would allow for the efficiency of transportation to be adequately evaluated when determining the benefits associated with each proposed alternative.

- 3) Section 5.2 - Will there be a geotechnical study in the design of the Rock Dikes?

Information Provided – Yes, there will be additional geotechnical studies conducted during the Engineering and Design phase of the project to adequately determine the settlement rate and the associated maintenance quantities/requirements. The need for additional data was taken into account when completing the Cost and Schedule Risk Analysis.

- 4) Section 5.2 - Why not fill in excavated flotation channels when rock dike construction is complete?

- 5) Section 6.3 - Will there be a geotechnical study in the design of the Earthen Dikes?

Information Provided – Yes, See the response to comment # 3 above.

Lee Walker

- 1) Executive Summary - It isn't quite clear how this ties in to the channel. Maybe add a sentence explaining where the lock is in relation to the area to be deepened to show a more direct link between the projects?

Concur – Additional language was added to this referenced portion of the report to describe where the lock is located in relation to the project area.

- 2) Executive Summary Page ES-ii - The mention of fabrication benefits here is confusing when used before the discussion of what the fabrication benefits are two paragraphs down.

Concur – The referenced paragraph was relocated to the discussion of benefits below.

- 3) Executive Summary - Benthos Impacts - Temporarily or long term? Once dredged, would the benthos re-establish at the deeper channel bottom?

Concur – The qualifier “temporary” was added to the referenced sentence.

- 4) Executive Summary - Is the lock, or a changed use of the lock part of the proposed action? If not, this is a cumulative impact rather than a direct impact. It doesn't look like you are discussing cumulative impacts in this executive summary for any of the other relevant resources.

Concur – The reference to the lock and the potential future impacts resulting from the use of the lock was removed from the Executive Summary language.

- 5) Section 1 - In some cases you summarize a given authority and in other cases you just quote it. I think it is more reader-friendly to summarize rather than quote. I would take out the quotes and replace with a summary like you did for Section 206. I recommend the same for the quotes you have for the study authorization above.

Concur – Quotes were removed for a majority of the authority descriptions and replaced with additional language describing each authority and its applicability to the project. The quoted Section 203 language was left in the report, since this is the most pertinent authority to the project.

- 6) Section 1 - The Corps tends to use “tentatively” prior to “selected plan” because the Chief's Report and ROD haven't yet been signed and, therefore, the plan hasn't technically been selected. They may have given you guidance otherwise, but that is what I've typically been directed to use. Also, if this is technically not a USACE document, I'm not sure if this is the tentatively selected plan or the non-federal sponsor's preferred plan. Have they given you specific guidance on this?

Information Only – The guidance we've received is to use “Recommended Plan” only. However, based on your comment, we went through the report to ensure that this usage is consistent throughout the document. The use of the word tentatively selected

plan was used in the referenced paragraph as it refers to selection of a plan before it becomes the recommended plan.

- 7) Section 2.1 - What is “there”? 1998 levels? Is there more recent data? It seems like there would be more recent navigation statistics available from the port or USACE Navigation Statistic Center. Given the volatility of the oil and gas market, I don’t think you can reasonably use data this old. I see the logic being used here...even if oil and gas activity goes up, vessel traffic doesn’t go up because it is too shallow, but I think some might still question the age of the data and ask whether this trend has remained the same in recent years.

Information Only - The USACE prefers to see a time series of traffic statistics (vessels and cargo) for a ten-year period of time. When the original economics appendix was first drafted, May 2007, traffic statistics extending back into the 1990’s were presented as part of a ten year old time series. As the economics appendix has been updated, 2010, 2012 and 2016, more recent traffic statistics have been incorporated in some instances deleting the older statistics where economy of presentation was warranted. However, in some instances data older than ten years has been retained for illustrative purposes of a generally stagnant traffic base over a relatively long term exceeding ten years.

The most recent update, January 2016, used the most recent available Waterborne Commerce Statistics then available for calendar year 2013. In this context traffic data from 1998 is purely for historical reference purposes.

- 8) Section 2.4 - *The development of alternatives was also limited to the existing channel alignment. No changes to the existing channel alignment were considered or proposed* - Can you provide a justification? Even if it is as simple as realignment would have cause undue socioeconomic impact due to extensive development on both sides of the canal?

Information only – There is no specific justification I can provide other than the fact that the specified project goals and objectives could be obtained without having to alter the channel alignment, thereby increasing the costs of the project significantly.

- 9) Section 2.4 - *The lock and floodgate design depends on the depth of the channel. Therefore, changes in the authorized depth of the HNC could affect the lock sill depth and require modification to the ongoing lock design* - This seems counter to the local sponsor’s preference. If the depth of the channel influences the lock design, shouldn’t the channel depth be set first and then the lock designed?

Information only – That is correct. However, the potential deepening has been limited to – 20 feet NAVD88 by the local sponsors. Therefore, the lock only needs to accommodate -20 feet to accommodate the channel. It is my understanding that the lock will be designed to a depth greater than that. Regardless, I agree that the statement does not seem to fit the way it is presented. Therefore, the referenced statement was removed from Section 2 of the report.

10) Section 3 - It would be helpful to put these in chronological order.

Concur – The order of the projects was rearranged accordingly.

11) Section 3 - I've seen this act (in its various years of enactment/amendment) as the Rivers and Harbors Act, not singular River and Harbor Act. Do you know if there is a difference? It might be worth asking the Corps (if you have a contact that you're working with there, what they want you to refer to it as. In all the Corps docs I've written, I've used the plural form and it was accepted.

Concur – The name of the Act was modified throughout the report to the “River and Harbors Act”

12) Section 3 - I don't believe this is still before congress. This bill was passed by the Senate on May 15, 2013 but was never passed by the House. Provisions of this bill were incorporated into other bills. This sentence should be updated to give the current status.

Concur – Additional language was added to show that the project passed through the House of Representatives on May 15th, 2013.

13) Section 3 - This information is what's missing in the explanation of the desire to build the lock first in the last chapter. Maybe add a sentence or two explaining the intent to build the deeper lock in the last chapter.

Concur – Additional language was added to the referenced portion of Section 2.

14) Section 3 - I'm thinking that this might be more appropriate in the Coastal Restoration section. Even though the lock is a HSDRRS component, the study looked at how it could be used to improve water quality, right?

Concur – The language identified was moved to the Coastal Restoration Section (Section 3.3).

15) Section 3 - Is this a separate project or part of Convey Atchafalaya River Water to Northern Terrebonne Marshes and Multipurpose Operation of Houma Navigation Lock? Not clear here.

Concur – The heading for the referenced project was modified to indicate that it was indeed a separate project.

16) Section 4.3 - Shouldn't the discussion of impact analysis of alternatives be discussed after the combination of measures to derive alternative plans?

Concur – The referenced discussion was relocated to Section 4.5 of the report.

17) Section 4.3 - This information is usually provided in the introduction to the impacts discussion. Would it fit better there in this case?

Concur – The referenced discussion was relocated to Section 6 of the report.

18) Section 4.5.1 - How can GEC be the source of this data if GEC is writing this report? If this citation is referring to a different GEC report? If so, it needs a year in the citation.

Concur – The referenced tables was modified to present the citation more accurately.

19) Section 4.5.3 - Might be useful to state that these disposal plans are the same as those for the -18 depth alternatives, if that's the case. And what about disposal from the Inland Reaches? Is there a reason that isn't mentioned here?

Concur – Additional language was added stating that the disposal plans were the same for both the -18 and -20 foot deepening alternatives.

20) Section 4.5.4 - Are you missing a step here? Did the HET rank the sites? What were the criteria they used to rank them?

Concur – The referenced language was modified to correctly present the process utilized for selecting the disposal sites. This included coordination with both state and Federal agencies that had extensive knowledge of the proposed disposal sites.

21) Section 4.5.6 - If mitigation isn't required do you think it might be better to remove this and any others that don't require mitigation? Since the previous sentence says "Mitigation requirements include the following:"?

Concur – The sentence preceding this section was modified to state that the following information included both mitigation requirements and the self-mitigating characteristics of the project.

22) Section 4.5.6 - The use of the intermediate estimate should probably be mentioned in the paragraph which introduces the use of WVAs for this analysis rather than here. You can state up there that the WVAs looked at the low, intermediate and high RSLR scenarios, and that the results of the intermediate runs are cited below in the mitigation discussion. If FWS and NMFS endorsed the use of the intermediate in determining impacts, it would be goof to mention that up there too.

Concur – Additional language was added to Section 4.5.6 to clarify that all three levels of relative sea level rise we considered in the WVA model, but the intermediate level was utilized for benefit evaluation, as suggested by the USFWS.

23) Section 4.8.9 - Bald eagles are no longer listed under ESA; but they are still protected under other laws. If you leave this discussion under T&E, you may want to change section title to include “protected species.” Or just move eagles to the wildlife section.

Concur – The discussion of bald eagles was relocated to the Wildlife Section.

24) Section 5.1.1 - Since not all of this is built; I don’t think we can consider it part of the existing conditions. I think it would be more accurate to describe which portions have been constructed to date.

Non-Concur – The project is authorized, therefore it can be treated as FWOP conditions.

25) Section 5.3.1 - Are you referring to the design or original channel width? If so, state that, because otherwise the next sentence seems to contradict it.

Concur – The width referred to is design channel width. Clarification was added to the referenced paragraph.

26) Can you list the number of primary and secondary schools in the Parish or provide some other such statistic? This statement sounds more subjective than objective.

Concur – The referenced statement was removed.

27) Section 5.5.10 - What about the percent minority population?

Concur – The requested information was added to Section 5.5.10.

28) Section 5.7 - Since this statistic is from 45 years ago, I don’t know that it is still relevant.

Concur – The referenced statement was removed.

29) Section 5.8.1 - In several places in this section there is discussion of impact rather than existing condition. I recommend moving those discussions to the impact section.

Concur – The referenced statement was removed.

30) Section 5.9 - Should this be 3? Birchett and Pearson, Pearson, and Lynn Ryan?

Concur – The referenced statement was corrected.

31) Section 5.9 - These two paragraphs seem to repeat earlier paragraphs; not sure that they are needed.

Concur – The redundant information was removed from Section 5.9

32) Section 5.9 - It isn't clear why this says Section 106 consultation is ongoing, when it states that it is complete earlier in this section.

Concur – The referenced statement was removed.

33) Section 5.11.2 - This paragraph doesn't seem to belong here.

Concur – The referenced paragraph was removed.

34) Section 6 – Since these two features are not part of the proposed action but are instead separate projects (right?), would it be better to discuss the combined effects of these two features in the cumulative impacts section rather than the impacts section for the proposed action and alternatives? As I read through this section, the introduction of the lock impacts created a little confusion and made it seem as though the lock is part of the proposed action.

Concur – The discussion of the lock was removed from the introduction.

35) Section 6.1.2 - Can there be more explanation on why these are different? I know it is probably intuitive that a higher cost alternative with the same benefit makes a different BCR, but you might need to spell that out with something like “these differences in BCR demonstrate the difference in cost of the different alternatives to achieve the same level of benefit.”

Concur – The referenced statement was added.

36) Section 6.2.3 - Would all disposal sites identified for each alternative eventually be used for their respective alternatives? If not, the language in the impact sections regarding disposal sites may need to be tweaked to make them more representative of the uncertainty of use.

Information Only – It is anticipated that all disposal locations identified for the alternatives evaluated will be utilized during construction and/or maintenance.

37) Section 6.6.1 - Is this sentence referring to actions implemented for maintenance dredging? If so, would be good to state that. But I thought the description of alts said no new dikes or foreshore protection would be constructed under the no action.

Concur – Foreshore protection is not included in the No-Action plan. The referenced statement was removed.

38) Section 6.7.1 - The discussion of salinity in a lot of these sections is a bit confusing without more quantitative or qualitative comparison? If the discussion of the lock impacts is not moved to the cumulative impact section, I think it would help to add to the discussion of salinity impacts by explaining whether the lock reduction in salinities negates the otherwise expected increase in salinity intrusion? Or will the lock just reduce the level of intrusion? And the last sentence in the paragraph suggests that there would be an overall reduction. But I don't know that it is safe to say that the cypress would recover. I would imagine subsidence and other issues, in addition to salinity intrusion, are causing problems with cypress, so this statement might be too bold.

Concur – The referenced statements regarding cypress tree recovery and foreshore protection were removed. The discussion of salinity impacts and how they relate to the construction and operation of the Houma lock will remain in the impact section for each element of the project. The connectivity between the two projects is a little more unique of a situation than typical cumulative impacts from other projects, so it would be best to keep the discussions where they are. Since the design and operation plan for the lock has not been completed, no quantification can be provided.

39) Section 6.9.2 - Is it more accurate to say that the addition of foreshore protection and retention dikes as part of this alternative, rather than the deepening itself, would be the cause of this decreased shoaling?

Concur – The language was modified to reflect the impacts foreshore protection and rock retention would have on shoaling rates.

40) Section 6.13.2 - Were all of the alternatives coordinated? If only the proposed action was coordinated, this write-up should be moved to 2A.

Concur – The language was relocated to the portion of the section that describes impacts for the proposed action (Alternative 2A).

41) Section 6.34 - Recommend also listing the present and reasonably foreseeable future projects which were considered in the cumulative impact analysis.

Concur – Additional projects were added to the temporal boundaries listed.