Science Evaluation

Bucket 2 – Council Selected Restoration Component

PROPOSAL TITLE

Golden Triangle Marsh Creation

LOCATION

Orleans and St. Bernard Parishes, Southeastern Louisiana

SPONSOR(S)

State of Louisiana

TYPE OF FUNDING REQUESTED (Planning, Technical Assistance, Implementation)

Project, Planning

REVIEWED BY:

DATE:

1/07/15

Best Available Science:

These 6 factors/elements help frame the reviewers answers to A, B and C found in next section:

1. Have the proposal objectives, including methods used, been justified using peer reviewed and/or publicly available information?

- (●) YES
- ( ) NO
- ( ) NEED MORE INFORMATION

Comments

The objectives are not clearly and concisely spelled out in the proposal in a fashion that makes the objectives immediately obvious. The objectives of the Golden Triangle Marsh Restoration Project are to create/restore 600 acres of marsh near the western side of Lake Borgne by hydraulically dredging and pumping sediment from Lake Borgne and moving the fill approximately 16 miles to the site. The slurry fill will be constructed to an elevation of +2 feet. This methodology has been used in the region and I am familiar with similar projects in the Chesapeake Bay, so it is certainly feasible.

2. If information supporting the proposal does not directly pertain to the Gulf Coast region, are applicant's methods reasonably supported and adaptable to that geographic area?

- (●) YES
- ( ) NO
- ( ) NEED MORE INFORMATION

Comments

Yes, this is appropriate for the region.

3. Are the literature sources used to support the proposal accurately and completely cited?

- (●) YES
- ( ) NO
- ( ) NEED MORE INFORMATION

Comments

Yes, the citations appear to be accurate. The authors did not do a good job of delving into the scientific literature on the efficacy of the actual methods, but as I indicated the methods are not new and they are effective in this region as well as in others.

4. Are the literature sources represented in a fair and unbiased manner?

- (●) YES
- ( ) NO
- ( ) NEED MORE INFORMATION

Comments

Yes, to my knowledge they are represented in a fair and unbiased manner.

5. Does the proposal evaluate uncertainties and risks in the scientific basis for the proposal, including any identified by the public and Council members?

- (●) YES
- ( ) NO
- ( ) NEED MORE INFORMATION

Comments

Yes. First they use their comprehensive state planning to identify the moderate scenario, which assumed limited changes in subsidence, nutrient levels and sea level rise and a less optimistic scenario which assumed a more dramatic change in one or more of these factors over the next 50 years. And they chose the less optimistic scenario. They detail issues of sea level rise, recharge, and hurricanes/tropical storms and the inherent risks, data gaps, and unknowns for each of these. There is no completely suitable way to deal with these issues, but by acknowledging them they have gone a long ways towards relieving doubt about the potential effectiveness of the project.

6. Does the proposal evaluate uncertainties and risks in achieving its objectives over time? (e.g., is there an uncertainty or risk that in 5-10 years the project/program will be obsolete or not function as planned given projections of sea level rise?)

- ○ YES
- ○ NO
- ◉ NEED MORE INFORMATION

Comments

The authors mention a 50-year time frame and do not detail a 5-10 year plan, but the issues of sea level rise, recharge, and hurricanes/tropical storms are not specifically mentioned in a temporal aspect. I think it is implied that these are being considered over short-term and long-term temporal scales as these things that are occurring over time.

Based on the answers to the previous 6 questions, and giving deference to the sponsor to provide within reason the use of best available science the following three questions can be answered:

A. Has the applicant made a reasonable determination that the proposal is based on science that uses peer-reviewed and publicly available data?

- ○ YES
- ○ NO
- ◉ NEED MORE INFORMATION

Information Needed:

They do not necessarily demonstrate the effectiveness of this technique based on peer-reviewed literature. They do a great job of demonstrating the need for the project. A good concise literature review demonstrating the effectiveness of the restoration technique would be useful.

B. Has the applicant made a reasonable determination that the proposal is based on science that maximizes the quality, objectivity, and integrity of information (including, as applicable, statistical information)?

- ○ YES
- ○ NO
- ◉ NEED MORE INFORMATION

Information Needed:

The same logic can be applied here as in the above statement. However, one must realize that this type of information is often lacking as agencies want to fund restoration (something tangible) but not monitoring or research of such activities.

C. Has the applicant made a reasonable determination that the proposal is based on science that clearly documents and communicates risks and uncertainties in the scientific basis for such projects?

- ◉ YES
- ○ NO
- ○ NEED MORE INFORMATION

Information Needed:

Yes, they did a nice job with identifying the risks and uncertainties.

Science Context Evaluation

A. Have other methods been discussed and reasons provided to why the method is being selected (e.g., scientifically sound; cost-effectiveness)?

No, there is no comparison of techniques or reasons for using the hydraulic dredging and pumping sediment method. They do put the project within a larger context of the various types of restoration activities that need to be done (page 8), but not the reasoning behind why a specific method is chosen.

B. Has your agency/vendor/project manager conducted a project/program like the one proposed?

No, I have been on sites restored/created this way but had no direct involvement.

C. Is there a risk mitigation plan in place for project objectives? (captures risk measures as defined under best available science by the Comprehensive Plan and Act)

They mention adaptive management and adaptive delta management, but there is no specific guidance on how this will be implemented into the plan.

D. Does the project/program consider consequences with implementation? (captures risk measures as defined under best available science by the Comprehensive Plan and Act)

The authors do acknowledge the complexities of managing environments and needing to consider the natural and socio-economic systems. Further, they acknowledge the issues in Deltaic environments. The authors demonstrate the proposed job creation benefits from implementing the Golden Triangle Marsh Creation project and also mention land loss, flooding risks, etc. However, I did not readily see anything related to risks associated with implementing these practices.

E. Does the project/program have clearly defined goals?

I guess it is to reduce storm surge and wave action on the greater New Orleans metropolitan area. There are also some public outreach and education goals. There is no metrics defined to know if the goals will be met.

F. Does the project/program have clearly defined objectives?

To create 600 acres of coastal wetlands. I assume functioning wetlands, but no level of functional assessment or equivalency is stated.

G. Does the project/program have measures of success? (captures statistical information requirement as defined by the Comprehensive Plan and Act)

Vaguely. The project should improve water quality. Prevent environmental and economic collapse. These may be the measures of success, but I am not sure how one would know if these could be reached (no numbers associated with them) or how it can be attributed directly to a specific program.

H. Is a monitoring program in place to determine project goals, success and help adaptive management (if applicable)? (captures statistical information requirement as defined by the Comprehensive Plan and Act)

Somewhat. Adaptive management is mentioned as I previously indicated. They also mention performance measures into SWAMP (System-wide Assessment and Monitoring Program), but the specifics are relatively vague.

I. Does the project/program consider recent and/or relevant information? (captures statistical information requirement as defined by the Comprehensive Plan and Act)

Yes, to a degree, Not necessarily the statistical information from what I can tell, but most of the plans are since the 2012 RESTORE Act, so things are mostly up to date.

J. Has the project/program evaluated past successes and failures of similar efforts? (captures the communication of risks and uncertainties in the scientific basis for such projects as defined by the Comprehensive Plan and Act)

They mention many programs such as Coastwide Reference Monitoring System-Wetlands and Barrier Island Comprehensive Monitoring Program which I assume has examples of successful and unsuccessful projects that they could use to mine date from. However, these data or assessments are not provided in the document.

Please summarize any additional information needed below:

They have a widely accepted master plan that looks large-sale at restoration and creation opportunities. The figure 1 does a nice job of identifying the master plan components. Putting this specific project within that context was very valuable. But, I thought it could have been integrated better as the larger concept plan was more clear than the specific Golden Triangle creation project outlined.