Science Evaluation

Bucket 2 – Council Selected Restoration Component

PROPOSAL TITLE

Biloxi Marsh Living Shoreline

LOCATION

Biloxi Marsh, St. Bernard Parish, LA

SPONSOR(S)

State of Louisiana

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

Planning

REVIEWED BY:

DATE:

January 2, 2015

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 proposal goals are identified and justified (page 9). However, the objectives mentioned in the proposal are RESTORE objectives to "restore, enhance, and protect habitats"; no specific planning objectives are discussed.

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

Not Applicable

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

- ○ YES
- ○ NO
- ◉ NEED MORE INFORMATION

Comments

A couple of sources used in the narrative are missing from the Literature Cited section. Specifically, Delta Alliance 2014 and Haasnoot 2013 are used on page 11, but are missing from the Literature Cited section.
Also, there are two distinct sources labeled "The Water Institute of the Gulf 2013". The applicant could have identified one as The Water Institute of the Gulf 2013a and the other one as The Water Institute of the Gulf 2013b.
All other sources are properly cited.

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

- ◉ YES
- ○ NO
- ○ NEED MORE INFORMATION

Comments

The literature sources 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

The proposal does discuss uncertainties and risks pertaining to the project (page 13) and also leverages the work carried out during the development of the 2012 Coastal Master Plan, for which an extensive public outreach campaign was undertaken.

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

From the narrative provided on page 7, it seems that the proposed project is within the "less optimistic scenario" that assumes more dramatic changes. Therefore, it can be deduced that the risks of the project not functioning as planned have been accounted for during the development of the Master Plan.

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:

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:

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:

The applicant described both the risks and uncertainties related to rising sea level and subsidence

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)?

A method is described, but materials to be used for spat settlement will be determined during project execution based upon hydrodynamic parameters.

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

I know of small scale oyster restoration projects carried out by my institution, but I was not involved with them.

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)

Monitoring and adaptive management will be in place to identify flexible solutions to be implemented under changing conditions.

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

Section 8 "Proposal Project Benefits" highlights the benefits that will be derived from the implementation of the proposed project. In case nothing is done to restore this habitat, it is obvious the loss that will follow.

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

Yes, the project goals are clearly defined on page 9.
The goals of the Biloxi Marsh Living Shoreline project are to reduce shoreline recession and enhance local oyster production through the implementation of marsh-fringing, bioengineered oyster reefs.

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

The proposal refers to the RESTORE objectives of "habitat protection and restoration" but does not clearly define objectives for the Biloxi Marsh Living Shoreline project. However, it lists the objectives of the Master Plan and it seems those may be in common with what it is proposed. Those are: 1. Reduce economic losses from storm surge flooding, 2. Promote a sustainable coastal ecosystem by harnessing the natural processes of the system, 3. Provide habitats suitable to support an array of commercial and recreational activities coast wide, 4. Sustain the unique cultural heritage of coastal Louisiana, and 5. Promote

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

The proposal only describes a final measure of success, not intermediate performance measures. The project will be deemed successful if it ultimately reduces shoreline recession and supports oyster recruitment and survival in a self-sustaining system.

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)

The project will leverage existing Coastal Protection and Restoration Authority's (CPRA) monitoring programs such as the Coastwide Reference Monitoring System-Wetlands (CRMS) and the Barrier Island Comprehensive Monitoring Program (BICM). Additionally, CPRA is working with the Water Institute for the Gulf to develop a System-Wide Assessment and Monitoring Program (SWAMP), a comprehensive program that will encompass all existing programs, thus avoiding duplicating efforts.

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

The proposal definitely uses recent (literature sources published in 2012 and 2013) and relevant information.

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)

Yes, the proposal describes this through the effort undertaken to develop the most recent Master Plan.

Please summarize any additional information needed below:

The additional information needed is about a couple of literature sources that were left out from the Literature Cited. Otherwise, the project is thoroughly described and a case is made to highlight the need for its implementation and subsequent benefits. The only negative aspect of this proposal is that the emphasis seems to be more on the Coastal Master Plan than the Biloxi Marsh Living Shoreline project itself.