Science Evaluation

Bucket 2 – Council Selected Restoration Component

PROPOSAL TITLE

Golden Triangle Marsh Creation

LOCATION

Lake Borgne in coastal Louisiana

SPONSOR(S)

Coastal Protection & Restoration

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

Planning, Engineering & Design, Permitting, Adaptive Management

REVIEWED BY:

DATE:

January 12, 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

Only one objective is mentioned in detail in the proposal, at the top of page 2 (in the executive summary). It is justified there by publically available but not by peer-reviewed information. It needs to be addressed in the proposal narrative also.

Also, the summary sheet lists five RESTORE goals and seven RESTORE objectives that apply to the proposal (see my responses to Questions E and F under Science Context Evaluation).

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

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

- ○ YES
- ○ NO
- ◉ NEED MORE INFORMATION

Comments

Most of the literature supports the overall Master Plan. Sources need to be found to specifically support marsh creation planning; engineering and design; and phase I of adaptive management. If available, sources should support marsh creation at the Golden Triangle marsh creation site.

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

- ○ YES
- ○ NO
- ◉ NEED MORE INFORMATION

Comments

Evaluation of needed new literature sources (required as shown in Question #3) can be done when the literature sources are provided.

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

Section # 5 evaluates both programmatic and marsh creation project uncertainties and risks. It would be useful (if possible) to evaluate how uncertainty will be incorporated into adaptive management for the engineering and design/planning phase. For example, if applicable, underestimation or overestimation of relative sea level rise; forecasting of regional changes of water level in the Gulf of Mexico; and any new data on geotechnical stability of underlying soils from nearby investigations might be used for iterations in the first phase of adaptive management.

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

Adaptive management will be used all through the project to reduce uncertainty, by monitoring of project measures of success.

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:

Most of the literature supports the overall Master Plan. Sources need to be found to specifically support marsh creation planning; engineering and design; and phase I of adaptive management. If available, sources should support marsh creation at the Golden Triangle marsh creation site.

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:

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)?

The discussion of likely choice of dredge method does not mention any other possible methods. The proposal contingently justifies the choice of borrow area but mentions other possible future sources.

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

No.

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)

No plan specifically called a "risk mitigation plan" is mentioned at all in the proposal.

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 proposal's Risk and Uncertainties section (Section III.5.) discusses uncertainties and consequences of underestimating or overestimating relative sea-level rise. In the same section, uncertainties leading to delays in borrow area recharge could lead to the consequence of lengthening the construction schedule. Finally, a major constraint of the weakness of adaptive management to predict hurricane impacts is mentioned; consequences of hurricanes will always be subject to substantial uncertainty.

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

The summary sheet lists five RESTORE Act goals, all of which the proposed project supports. Three of these are mentioned in the proposal in a context that clearly defines them. They are not all mentioned with the same exact wording. Those goals are as follows:
(1) Restore and conserve habitat (2) Restore water quality (3) Enhance community resilience
The first goal is primary and the other two are secondary. Two secondary goals are not clearly defined in the proposal.

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

The summary sheet lists seven RESTORE Act objectives, all of which the proposed project supports. Three of these are mentioned in the proposal in a context that clearly defines them. They are not all mentioned with the same exact wording. These three objectives are as follows:
(1) Restore, enhance, and protect habitats (2) Promote community resilience (3) Promote natural resource stewardship and environmental education

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

The proposal's measures for success are wetlands restoration and wildlife habitat restoration, discussed in Section III.4. (Measures of Success).

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 proposal mentions no project-specific monitoring plan in place but discusses the programmatic (Master Plan) monitoring plan in detail.

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

The project's reference section (Section VIII., Literature Cited) cites 35 references (all relevant) published between 1990 and 2014. Eleven of these references were published in 2013 0r 2014.

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)

The proposal mentions several constructed restoration projects in the Lake Borgne area, but none are for marsh creation. The proposal does not mention specific constructed marsh creation projects outside the Lake Borgne area.

Please summarize any additional information needed below:

The proposal is more programmatic than project-specific. I do not know what the reason is for that, but it may be satisfactory to the Restoration Council.