Science Evaluation

Bucket 2 – Council Selected Restoration Component

PROPOSAL TITLE

West Grand Terre Beach Nourishment and Stabilization

LOCATION

Jefferson Parish, Louisiana

SPONSOR(S)

State of Louisiana

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

Planning

REVIEWED BY:

DATE:

12 January 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 rationale behind the selection of West Grand Terre Island for restoration activities was well described in connection with State Master Plan activities. The programmatic implementation strategy, relying on several restoration programs, was also well described. Additional information could be helpful to assess how the specific project dimensions (quantifiable restoration targets) were developed. It is understood that the actual restoration design would be optimized as part of the proposed activities, but it would be helpful to understand how these dimensions were developed as that rationale may inform programmatic adaptive management actions related to future island designs either on this island when rehabilitation may be needed due to storm events or in planning for other islands. The proposal itself is for engineering and design for the project, so if funded, the proposed work itself is insufficient to achieve the overall project objectives for habitat restoration and protection. As noted on page 21 of the proposal, significant follow-on construction activities would be required to achieve the

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

N/A. All material presented was directly relevant to Louisiana's barrier shoreline.

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

- ◉ YES
- ○ NO
- ○ NEED MORE INFORMATION

Comments

The proposal directly builds on decades of analysis of this barrier island system. The function of the barrier island system within the landscape and threats to sustainability of these critical landscape features are well documented and incorporated into the proposal. The proposal could have been improved by greater incorporation of information from past project-level efforts, such as the cited BA-28 and BA-30 projects which were undertaken, at least in part, on this island and will have developed some technical information specific to this location rather than to the island chain as a whole.

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

- ◉ YES
- ○ NO
- ○ NEED MORE INFORMATION

Comments

The literature was 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 related to relative sea level rise and how uncertainties may affect project design. This uncertainty will presumably receive greater attention during the design process proposed herein. The proposal also mentions the threat of tropical storms, but this discussion could have been greatly improved with some discussion concerning the likelihood of various strength storms. Our understanding of the return intervals, surge heights, and wave climates of storms has significantly improved since Hurricane Katrina; a single storm could effectively remove most of the introduced sand in a single event, so the risk should be discussed (it is understood that this type of analysis will be central to the engineering

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

See above discussion. The threat of a tropical weather system is the single greatest threat to sustainable achievement of restoration objectives in the proposed project. As this threat is only to constructed projects, however, there is no significant threat to performing engineering and design work other than a lack of clarity in project funding; without a funding path ahead, the restoration objectives may be significantly delayed or the projected cost may increase significantly.

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:

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 proposal only presents a single alternative project concept, as developed during the planning process for the State Master Plan. It is understood that alternative features and cost optimization would be a part of the engineering and design process proposed herein.

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

Our agency has funded several recent beach/dune restoration, marsh restoration, and erosion control projects throughout the Gulf coast region.

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)

There does not appear to be a risk mitigation plan in place for the proposed engineering and design work. It would be prudent to develop such a plan as part of the engineering and design process for the construction project.

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

It is assumed that much of this work will be accomplished in the engineering and design work proposed herein.

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

The overall goal of Louisiana's barrier island restoration program are well articulated; the goal of this project appears to be completion of restoration of this chain in increasing the longevity of this specific barrier island past 2044.

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

Project objectives are clearly defined for this project in terms of acres restored and erosion protection.

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

Measures of success are lacking. "As-built" dimensions are provided, as is a projected project lifespan of 20 years, but it is unclear what the project area is expected to look like at the end of the 20 year lifespan, or how many additional years of sustainable landscape function are expected.

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)

A monitoring program is in place and/or under development for Louisiana's coastal program in general and this project in particular. The proposal notes that many of the specific methodologies may be under development, so the exact nature is unclear. The proposal could be improved with more details as to how the Barrier Island Comprehensive Monitoring (BICM) and Barrier Island Maintenance programs function generally and specifically in relation to this project. This additional information appears critical to understanding the purpose and relevance of the $506k adaptive management line item.

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 appears to incorporate understanding from the most recent and relevant information. It is understood that as part of the engineering and design process proposed herein, additional information will be obtained and incorporated into project design and permitting activities.

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)

There is little presentation of results from similar projects within this proposal; it is known, however, that Louisiana has decades of experience with barrier island restoration that has been incorporated into the various documents cited within this proposal.

Please summarize any additional information needed below:

The proposal could be improved if focused on the actual work to be performed. As presented, there is an outstanding discussion of the relevance of the project within Louisiana's coastal program, but very little project-specific information to address project-specific benefits, risks, and costs. There is no information presented that can aid in understanding the proposed budget of $6,752,759 for engineering & design and permitting (how was this budget developed? are there scopes of work that can be provided, either general for this project type or specific to this project?). The use of the $506,457 for adaptive management could be more definite. This appears to be where the entire basis of monitoring and adaptive