Science Evaluation

Bucket 2 – Council Selected Restoration Component

PROPOSAL TITLE

Bayou Dularge Ridge Restoration, Marsh Creation and Hydrologic Restoration; Phase I

LOCATION

Terrebonne Parish/Terrebonne Basin/Southeast Louisiana

SPONSOR(S)

USDA-NRCS

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

Project Planning

REVIEWED BY:

DATE:

1/9/2015

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

CWPPRA's Wetland Value Assessment 2013 was used to calculate the benefits of the projects as acres created, acres restored, and acres protected over a 20-year time span.

U.S. Geological Service's National Wetland Research Center provided an analysis of land loss for each of the project areas which included a hypertemporal rate of loss for all 3 project components: hydrologic restoration, marsh creation, and ridge restoration.

Modeling to generate project effects and benefits: 2D finite element model RMA-2/RMA-11 to calculate salinity changes and water level changes with and without the structure, and STELLA – SPROD2 desktop model to calculate the benefits of salinity

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 - the supporting scientific information (modeling and analysis) directly pertains to the project's geographic location.

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

- ◉ YES
- ○ NO
- ○ NEED MORE INFORMATION

Comments

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

- ◉ YES
- ○ NO
- ○ NEED MORE INFORMATION

Comments

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

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

As noted in the proposal, the project is a Louisiana Master Plan project and funding for the construction phase of the project will be sought as part of the CPRA process.

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 project only discusses one methodology for reaching the desired goal; however, they justify the methodology using a variety of analyses and predictive models. The proposal refers to the methodology as "the preferred alternative" in several instances, but doesn't present what the other alternatives were, therefore it is assumed that a variety of methods were evaluated and this method was selected for proposal to the Council.

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

Yes - I have done extensive petroleum-based remediation projects and "restoration" was the final phase of each whether it was marsh, dry land, riverine, commercial, residential, etc...

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 - this proposal does not include a risk mitigation plan; however, NRCS indicates that it recognizes certain inherent risks associated with the project and will take these into account as part of the design and engineering phase of the 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)

Yes - the proposal identifies specific uncertainties of the project, including the difficulty of moving heavy equipment in remote and sensitive geographic areas of Louisiana, the ability of the soils to support the rock structure of the proposed ridge design, and the greater water velocity created by the constriction of water flow due to the proposed rock structure. NRCS indicates that it will take all of these project consequences and uncertainties into account during the design and engineering phase of the project.

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

Yes - the goal of the project is to add approximately 540 acres in the Grand Pass area of Terrebonne Parish where Lake Merchant connects to Caillou Lake. This addition of marsh and ridge acres will synergistically provide benefit to an estimated 48,000 acres of wetlands by reducing the salinity and staving off salt water intrusion.

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

Yes - the objectives of the project include (1) restoring a ridge feature along Grand Pass land bridge and reducing the volume flow of Gulf waters, and (2) reestablishing historic hydrologic and salinity conditions into the Central Terrebonne marshes

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

While not defined as "measures of success", the proposed project identifies clear salinity and acreage values they expect to achieve.

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)

While the project proposal mentions that the project is mentioned in the Louisiana Master Plan 2012, it is not clear exactly which project it is, although it is assumed to be TE-66 as it is referenced in several graphs. If that is accurate, then the Coastal Protection and Restoration Authority has a monitoring program in place to monitor its projects for 20 years.

The proposal states that monitoring of the ridge structure will include annual inspections by the project team and that

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

Yes - USGS's land loss analysis is recent and relevant because it is for Terrebonne Parish from 1983-2013. The hydrodynamic modeling is recent and relevant as it was conducted in 2011 on the specific project area. The salinity productivity algorithms were published by USGS in 2012 and used data from CRMS sites located in the specific project area.

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)

Not specifically, but the project appears to be a part of the Louisiana Master Plan, implemented by the Louisiana Coastal Protection and Restoration Authority, which has a proven track record of similar projects in coastal Louisiana.

Please summarize any additional information needed below:

(1) While this proposal describes an excellent restoration project for Louisiana, the project is not regional in nature and therefore, may not be the best use of Bucket 2 funds.

(2) This proposal provides an excellent methodology and justification; however, a bit more explanation regarding why USDA-NRCS is proposing the project instead of the state of Louisiana or a letter of support from CPRA would have clarified that this project is a priority for the state.