

RESTORE Council Monitoring and Adaptive Management Guidelines

December 2019

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1. Introduction

Under the RESTORE Act, the Gulf Coast Ecosystem Restoration Council (RESTORE Council or Council) is responsible for the administration of both the Council Selected Restoration Component and the Spill Impact Component of the Gulf Coast Restoration Trust Fund. The RESTORE Act instructs the Council to implement projects and programs through the use of “best available science”, a term defined in the RESTORE Act as science that “...maximizes the quality, objectivity, and integrity of information, including statistical information; uses peer-reviewed and publicly available data; and clearly documents and communicates risks and uncertainties in the scientific basis...” In the 2016 update to its Comprehensive Plan, the Council strengthened its commitment to applying best available science and adaptive management through common standards and monitoring protocols, identifying and reducing key uncertainties, and the development of indicators and metrics of restoration and conservation success by project, region and/or watershed.

These Council Monitoring and Adaptive Management Guidelines (MAM Guidelines) are intended to broadly describe the roles, responsibilities, communication and authorization pathways, and broad activities that may be needed for the Council to fulfill its monitoring and adaptive management responsibilities. Council MAM responsibilities will generally be carried out and facilitated by the activities of the Council Monitoring and Assessment Work Group (CMAWG), as coordinated by and reported to the Council Steering Committee by Council staff (as more fully described in Section 1.3).

Specific responsibilities for the Council (as approved ¹ by the Council Steering Committee), individual Council members, and the Council Monitoring and Assessment Workgroup (CMAWG) are explained in sections 1.1-1.3. These responsibilities apply to project²-specific monitoring and other non-project-specific MAM activities (e.g., evaluation at the level of Comprehensive Plan objectives and/or priority restoration approaches as described in the Council’s Planning Framework), as they are appropriate and required to achieve the restoration goals laid out in the Council’s Comprehensive Plan. Coordination of MAM activities both internally within the Council and externally with other stakeholders are described in section 1.4. Descriptions of possible CMAWG MAM activities are provided in section 1.5, followed by an explanation of Council funding mechanisms for MAM activities in section 1.6.

These MAM Guidelines should be considered preliminary pending review and revision, if needed, by the CMAWG and approval by the RESTORE Council ([see Section 1.3](#)). For example,

¹ Throughout this document “Council” may be used. However, in practice, MOST NON-SIGNIFICANT, non-funding decisions are approved by the Council Steering Committee.

² Throughout this document “project” will be used to refer to both projects and programs.

upon development of a Council adaptive management plan, as committed to in the Council's 2016 Comprehensive Plan Update, these MAM Guidelines should be revised to reflect this greater level of detail.

1.1 RESTORE Council MAM Responsibilities

The RESTORE Council will encourage and facilitate consistency in monitoring and data procedures to evaluate and report on progress toward meeting the ecosystem goals that are described in the Council Comprehensive Plan and are foundational to the Planning Framework and State Expenditure Plans (SEP). Further details on project-level responsibilities are described in the Observational Data Plan (ODP) and Data Management Plan (DMP) Guidance ([see Section 1.5.1](#)).

The Council has yet to develop a Council adaptive management plan. The activities listed below describe the monitoring that could support adaptive management.

Council MAM responsibilities, as approved by the Council Steering Committee and coordinated by Council staff, include:

- (1) Maintain and update the MAM procedures and guidelines as part of these Council MAM Guidelines and the ODP and DMP Guidance; the CMAWG will review MAM provisions in these documents and recommend revisions to the Council, as requested.
- (2) Facilitate coordination and compatibility of MAM procedures across Council member agencies. Promote efficiency and collaboration in addressing MAM priorities (e.g., utilize joint meetings of the CMAWG and the Natural Resource Damage Assessment Cross-Trustee Implementation Group Monitoring and Adaptive Management (NRDA Cross-TIG MAM) working groups).
- (3) Coordinate with Council members and other science and monitoring programs in the Gulf of Mexico to support best available science (e.g., develop compatible monitoring standards, procedures and guidelines, and identify and/or fill critical information gaps using existing datasets and tools).
- (4) Maintain mechanisms to engage with the broader scientific community (e.g., Monitoring Community of Practice).
- (5) Aggregate and synthesize, as feasible, monitoring data and information to evaluate and report on collective progress toward meeting Council restoration goals described in the Comprehensive Plan.
- (6) Identify and raise awareness within the Council of changing conditions that could

influence restoration outcomes to inform the Council's future funding decisions, as needed. This may include being responsive to unanticipated events, such as large-scale disturbances (e.g. hurricanes, flooding, oil spills, etc.).

(7) Provide input on the functionality of the Council's Metadata Records Library and Information Network (MERLIN) for capturing Council funded project/program monitoring metadata, including, but not limited, to any interactive reporting and analysis features that may be developed, as needed.

(8) Provide feedback to members on MAM activities for consideration in future restoration decision-making.

(9) Review and approve CMAWG written guidance on MAM priorities. The identified MAM priorities will be periodically re-examined by the Council, as appropriate, based on evaluations of progress toward meeting restoration goals, changes in Planning Framework priority approaches and geographic areas, and other new information.

1.2. Council Member Responsibilities for MAM

Council members are responsible for addressing MAM activities that pertain to their restoration activities and for communicating information to the Council. Each Council member will address the following MAM responsibilities, as appropriate, to their restoration activities:

(1) Write and maintain updated and approved ODP and DMPs.

(2) Conduct project-specific monitoring and other non-project-specific MAM activities as agreed to by the Council, compatible with the procedures described herein and in the ODP and DMP Guidance.

(3) Ensure project monitoring data and any monitoring reports or other monitoring information are consistent with the approved project ODP and DMP and the ODP the DMP Guidance, and are made publicly available, as appropriate.

(4) Provide the Council with an annual status update of project monitoring information and data (i.e., update the ODP and DMP documents as required as part of annual project performance reports).

(5) Consider MAM needs for their geographic area and/or watershed(s) and communicate those to the Council to support review/revision of Planning Framework and anticipation of potential funding needs, including CMAWG annual workplans, as appropriate.

(6) Evaluate progress toward restoration project objectives using project-specific performance criteria, and identify the need for and propose corrective actions to the Council, if needed (i.e., as part of annual project performance reports).

(7) Support technical staff participation with the CMAWG, and provide feedback on CMAWG MAM activities as requested.

1.3 Council Monitoring and Assessment Work Group

1.3.1 Purpose

To meet its Comprehensive Plan monitoring and adaptive management commitments, the Council has decided to continue the work of the Council Monitoring and Assessment Workgroup (CMAWG) established under the 2017-2020 Council Monitoring and Assessment Program (CMAP). The CMAWG will serve as a forum for the Council to collectively address MAM topics relevant to multiple member agencies. The group may also support the Council member agencies by their request—with the Council’s approval—in meeting their MAM responsibilities. The CMAWG acts under the direction of the Council, and has no independent authority beyond what is outlined in these MAM Guidelines. The CMAWG will operate on a consensus basis to provide recommendations to the Council regarding MAM responsibilities, procedures, and guidelines.

1.3.2 CMAWG Membership

The CMAWG will be composed of one primary and one alternate staff member with technical expertise and up-to-date knowledge of its member’s priorities from each of the eleven RESTORE Council member agencies. Each member agency will identify and confirm CMAWG participants on an annual basis. Work group members provide the monitoring and adaptive management perspectives and needs of each of their respective agencies. The CMAWG will be coordinated by Council science staff, and led by state and federal co-chairs. The state and federal leads will rotate annually and will be identified in annual Council Steering Committee approved workplans. Topic-specific work groups that pull in additional experts may be formed as needed and requested by the Council.

1.3.3 CMAWG Responsibilities for MAM

The CMAWG is responsible for providing recommendations and feedback on MAM activities to the Council. CMAWG MAM responsibilities, as directed by the Council Steering Committee, may include:

- 1) Review of Council Observational Data and Data Management Plan Guidance ([Section 1.5.1](#)) for recommendation to the Council for approval.

- 2) Develop recommendations and support for planning for project MAM activities ([Section 1.5.2](#)).
- 3) Identification and recommendation of Council MAM priorities ([Section 1.5.3](#)).
- 4) Programmatic review and adaptive management activities ([Section 1.5.4](#)).

Additional details for each of these activities are provided in [Section 1.5](#).

1.4 RESTORE Council MAM Coordination

1.4.1 Internal Coordination on MAM

MAM activities will be coordinated both internally within the Council and externally with other Gulf of Mexico restoration and science programs and the broader scientific community, where appropriate. Internal coordination is a shared responsibility of the Council as demonstrated in Figure 1.



Figure 1. This figure represents the coordination of MAM activities among Council member agencies, Council staff and the CMAWG. Arrows indicate MAM data and information transfer between elements of the Council’s organizational structure.

The bullets below describe examples of internal communication and coordination of Council MAM activities.

- MAM coordination between Council member agencies and the Council:
 - Member agencies provide quality-controlled project monitoring data and progress reports to Council staff for review and approval.
 - Member agencies provide input on programmatic MAM activities to the Council.
- MAM coordination between the Council and the CMAWG:
 - The Council Steering Committee directs the activities of the CMAWG via annually approved workplans. Drafts of these workplans will be developed at the direction of the Council by the CMAWG for review and approval by the Council Steering Committee.
 - Council staff coordinate and provide CMAWG updates to the Council as needed to advance MAM activities, and as requested by the Council Steering Committee.
 - The CMAWG provides MAM recommendations (e.g., MAM Guidelines, guidance, reports), assessments, and tools for Council Steering Committee consideration and/or approval, according to approved annual workplans. Council staff are responsible for facilitating and working to reach consensus on CMAWG MAM guidance to the Council. If consensus cannot be reached by the CMAWG on a workplan activity or product, Council staff will bring the issue to the Council Steering Committee for consideration.
 - Council staff coordinate and report out on Council activities and decisions to the CMAWG.
- MAM Coordination between the CMAWG and Council member agencies:
 - Council member agencies provide support to their technical staff on the CMAWG, and provide feedback on CMAWG MAM activities.
 - CMAWG provides assistance to Council members on MAM activities as requested by the Council.

1.4.2 External Coordination on MAM

As directed by the Council, the CMAWG will work to identify opportunities to leverage resources with other restoration and science programs and collaborate on related MAM activities. It may also develop mechanisms to engage with the broader scientific community on MAM topics, as directed by the Council. Each Council member may also coordinate with other Gulf programs and the scientific community on MAM topics, as applicable.

The external coordination responsibilities may include the following:

- (1) Coordinate with other applicable restoration programs on MAM issues, including working to

identify and potentially fill critical information gaps that impact restoration decision-making and developing compatible monitoring standards, as appropriate.

(2) Communicate critical MAM priorities and identified critical information gaps to applicable science programs.

(3) Participate in broader Gulf of Mexico monitoring coordination forums.

1.5 CMAWG MAM Activities

1.5.1 Observational Data and Data Management Plan Guidance

Details on project-level MAM procedures and guidelines outlined in these MAM Guidelines will be updated by the CMAWG for approval by the Council Steering Committee within the Observational Data Plan (ODP) and Data Management Plan (DMP) Guidance. The ODP and DMP Guidance incorporates project-level MAM procedures and guidelines, and builds on the preliminary interim ODP and DMP Guidance developed for the Initial 2015 Funded Priorities List (FPL). Updates to the ODP and DMP Guidance will expand upon these efforts to meet the needs of the priority restoration approaches laid out in the FPL 3 Planning Framework. It will include, but will not be limited to, project monitoring and data management standards, reporting and tracking procedures, and guidance for addressing key information gaps. It may also outline guidelines for evaluating restoration progress and performing adaptive management for priority approaches and techniques described in the FPL 3 Planning Framework. The ODP and DMP Guidance will be reviewed and updated as necessary by the CMAWG throughout the period of restoration implementation. Once drafted and agreed upon by the CMAWG, the updated ODP and DMP Guidance will be submitted to the Council Steering Committee for review and approval.

1.5.2 Planning for Project MAM

The CMAWG may, as requested by the Council Steering Committee, support member agencies in applying the best available science to restoration project planning and design. The CMAWG may help inform the planning and design of new projects by aggregating project monitoring results, summarizing relevant scientific information, and providing these summaries to the Council Steering Committee. At the request of the member agencies, the CMAWG may provide support in developing project ODPs and DMPs in accordance with the ODP and DMP Guidance.

Where uncertainties may exist related to the implementation of a particular restoration technique, the CMAWG may also support the Council in developing additional project monitoring activities and adaptive management approaches to mitigate the uncertainties during project implementation.

1.5.3 Consideration of MAM Needs

The CMAWG may collect and consider individual members' MAM needs in support of identifying potential overlap between MAM priorities and Council Planning Framework priority approaches. The CMAWG may support coordination of similar data collection efforts across geographic boundaries. Identification of MAM needs may, where appropriate, include identification of opportunities to:

- (1) Build upon existing/planned monitoring or research programs to the extent that data provided by those programs would meet the Council members' needs.
- (2) Coordinate on monitoring efforts for any targeted geographic features (e.g., estuaries, bays) that cross geographic area boundaries.
- (3) Coordinate with other Gulf of Mexico restoration programs on planning for MAM activities, to the extent possible, to identify opportunities for leveraging and collaboration.
- (4) Engage with subject matter experts on specific restoration approaches or geographic areas, as appropriate.

1.5.4 Programmatic Review and Adaptive Management

Upon request from the Council Steering Committee, the CMAWG may synthesize monitoring information and overall restoration results at appropriate intervals and scales (e.g., across geographic areas and/or priority approaches) to evaluate and report on the Council's progress toward meeting the ecosystem goals and objectives described in the Comprehensive Plan. The CMAWG may also support Council members, at their request, in aggregating and synthesizing monitoring data and other information collected within a given geographic area or watershed. The CMAWG may also, at the approval of the Council Steering Committee, utilize subject matter experts in support of the programmatic review. Procedures for evaluation of progress toward restoration goals may include:

- (1) Consider the results of evaluations of restoration progress for individual Planning Framework priority approaches and geographic areas.
- (2) Consider the outcomes of restoration conducted to date, including restoration activities funded through other restoration programs in the Gulf of Mexico, to identify potential synergies and/or interactions among restoration efforts.
- (3) Consider any evidence of changing environmental conditions or previously unknown conditions that could influence future restoration outcomes.

(4) Engage with subject matter experts, as needed, to help evaluate progress toward restoration goals.

(5) Communicate the results of the programmatic evaluation to the Council Steering Committee and provide recommendations for adjustments to Council programmatic documents (e.g., Comprehensive Plan, Planning Framework), if needed.

(6) Support the Council, at its request, in reporting on progress toward meeting the restoration goals and objectives in the Comprehensive Plan.

(7) Support development and, at the direction of the Council Steering Committee, implementation, of a Council adaptive management plan, as committed to in the 2016 Comprehensive Plan Update.

1.6 RESTORE Council MAM Funding

1.6.1 Project-specific MAM Funding

Support for project-specific performance monitoring and associated project-specific adaptive management will be funded from the project specific funding provided through Funded Priorities Lists (FPL) or State Expenditure Plans (SEP) in accordance with final project ODP and DMPs. MAM-related activities that may be supported under FPL or SEP funds include, but are not limited to:

(1) Project-specific monitoring, evaluation, and data management.

(2) Implementation of project-specific adaptive management.

(3) Data collection and reporting in support of planning restoration projects.

1.6.2 Non-project specific MAM Funding

The Council will provide funding for MAM activities outside of project monitoring through the Council Comprehensive Plan Commitment and Planning Support (CPS) Funds. CPS funds are provided individually to each Council member to support CMAWG staff time and travel. Funding for additional non-project specific MAM activities may be applied for through CPS funds or other FPLs, as appropriate. The annual funding amount for MAM activities will vary based on Council needs and will be approved by the Council Steering Committee through CMAWG annual workplans. Activities that may be funded within this allocation include, but are not limited to, activities described in [Section 1.5](#).