July 15, 2022

Virginia Fay
Assistant Regional Administrator for Habitat Conservation
Attn: Rusty Swafford/Dawn Davis
National Marine Fisheries Service, Southeast Regional Office
263 13th Avenue South
Saint Petersburg, Florida 33701

Re: Final Response to Conservation Recommendations under the Magnuson-Stevens Fisheries
        Conservation and Management Act on the Mid-Barataria Sediment Diversion Project, Proposed
        for Funding Under the Deepwater Horizon Oil Spill Natural Resource Damage Assessment in the
        Louisiana Trustee Implementation Group (TIG) Restoration Plan #3.2

Dear Ms. Fay,

The Louisiana TIG received your April 23, 2021 letter acknowledging initiation of the essential fish
habitat (EFH) consultation for the proposed Mid-Barataria Sediment Diversion (MBSD) project. Your
letter details your agency's EFH coordination efforts as a cooperating agency and member of the
Louisiana TIG for the proposed MBSD project review and Environmental Impact Statement (EIS)
development. Your letter also included EFH Conservation Recommendations (CRs).

On May 24, 2021, the NOAA Restoration Center (RC), on behalf of the Louisiana TIG, provided an interim
response to comply with Section 305(b)(4)(B) of the Magnuson-Stevens Act and 50 CPR 600.920(k). At
that time, we stated that a final response to your comments would be provided at least 60 days prior to
issuing our final restoration plan. Since our interim response, the NOAA RC and Louisiana TIG have
remained in regular coordination with you as the proposed MBSD restoration plan has progressed. This
letter serves as our final response.

The following EFH CRs were provided by your office:

1. The Monitoring and Adaptive Management (MAM) Plan should clearly identify variables and
    conditions to be monitored and describe the monitoring protocols. The MAM Plan should also
    identify specific management alternatives including, but not limited to alternate flow rate,
    frequency, timing and duration, and an effective decision-making regime to modify project
    management if monitoring and subsequent analyses indicate diversion operations are not
    providing the desired outputs, or are causing unexpected or unwanted effects to resources of
    concern.
2. The Coastal Protection and Restoration Authority (CPRA) and Louisiana TIG should continue
    investment in ecosystem (e.g., Ecopath with EcoSim and EcoSpace (EwE) and Comprehensive
    Aquatic Systems Model (CASM) and individual species models (e.g., Habitat Suitability Indexes)
    development and refinement for their use in comparing alternatives in the MAM Plan.
    Recommended ecosystem model improvements to support MAM, include but are not limited
    to:

a. Continued calibration
b. True validation with independent data
c. Sensitivity analyses with biotic and abiotic parameters
d. Refined uncertainty analyses
e. Structural sensitivity analysis
f. Translation of salinity or other environmental parameters to changes in growth, mortality, reproduction, movement/distribution, production, prey availability, etc. to get at population-, or food web-level effects

In response to CR #1, the Louisiana TIG has continued to work on the MAM Plan for the MBSD project. The MAM Plan identifies monitoring parameters associated with each of the three project objectives:

1. Deliver freshwater, sediment, and nutrients to Barataria Bay through a large-scale sediment diversion from the Mississippi River;
2. Reconnect and re-establish sustainable deltaic processes between the Mississippi River and the Barataria Basin (e.g., sediment retention and accumulation, new delta formation); and
3. Create, restore, and sustain wetlands and other deltaic habitats and associated ecosystem services.

The monitoring parameters will be used for measuring performance of the MBSD project and mitigation actions. The MAM plan also establishes a framework for assessing the need for potential adaptive management actions, identifies critical uncertainties and actions to address them, and outlines the structure for governance of Project implementation, including adaptive management. The MBSD operation will be guided by an annual operations plan developed by the Operations Management Team, consisting of CPRA personnel and possibly other state agencies. As part of the MBSD project implementation governance, the Adaptive Management Team (AMT), composed of staff from CPRA, and state and federal technical representatives for aquatic resources, will provide annual recommendations for adaptive management action, including outfall management and changes to operations, data collection, or other adaptive modifications; evaluate questions or issues that arise during operational periods and data analysis; evaluate long-term project performance; and reduce critical uncertainties. These efforts will include model outputs and evaluations of potential project features, alternate operations regimes, etc.

In response to CR #2, the Louisiana TIG is investing in the use of complex models such as the CASM and EwE to identify additional future monitoring parameters, locations, and frequency to evaluate the MBSD's influence on food web dynamics, as stated in the MBSD MAM Plan. Additionally, throughout the operational life of the diversion, CPRA will periodically utilize numerical modeling to better examine system responses, confirm project performance assumptions that are not directly measurable, and test the potential effects of adaptive operational modifications.

The Louisiana TIG agrees that additional refinement, uncertainty, and sensitivity analyses are needed for improvements to the CASM and EwE models.   The AMT will utilize these or other numerical models to assess baseline conditions, and will periodically update the models with data collected during pre-operations and post-construction of the MBSD. Pre-operations data will be used to refine responses of the individual components to environmental drivers. Post-construction monitoring data will be incorporated into model refinement to test, predict, and evaluate responses under diversion project conditions (MBSD MAM Plan Section 1.5.2). Furthermore, as an identified data need for refining and improving the capability of CASM or other numerical models to evaluate the MBSD influence on food

web dynamics, lower trophic level organisms will be sampled both pre-construction and post-operations either through the auspices of the Project MAM (MAM Plan Section 3.7.3.16) or directly by Louisiana TIG-funded efforts. To address the use of the models to predict changes under diversion operations, the models will undergo sensitivity analyses to analyze response of the modeled food web to changes in salinity. A specific series of steps for a multi-model analysis will be identified to improve predictive capabilities and enable bracketing of the uncertainty associated with model projections (MBSD MAM Plan Section 1.5.2).

For further questions about the project, please contact Christy Fellas, Compliance Coordinator in the NOAA RC, Deepwater Horizon Program, at 727-551-5714 or christina.fellas@noaa.gov. Thank you for your assistance.

Sincerely,

Rachel Sweeney
Program Manager, Deepwater Horizon Program
NOAA Restoration Center, Office of Habitat Conservation