



U.S. DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration
Fisheries Service
Damage Assessment, Remediation and Restoration
Program
Restoration Center

MEMORANDUM FOR: Ralph Markarian and Chris Pfeifer

FROM: John Rapp, NOAA Restoration Center

SUBJECT: DBL-152 Restoration Alternative Identification –
Preliminary Steps

The following was NOAA's rationale for targeting specific habitat types and geographic locations during an initial search for restoration alternatives to compensate for the DBL-152 incident. The rationale was proposed to representatives of K-Sea Transport on May 23, 2007, during a conference call. During the call, NOAA committed to providing a list of the restoration alternatives identified using the criteria below. Those projects are included in this transmittal. Please note that none of the projects listed have been screened using the OPA selection criteria. Additionally, listing them does not imply endorsement by NOAA; indeed, a preliminary review of several of the projects listed in this survey indicates that they would be non-preferred based on concerns regarding nexus, scalability, etc.

Identification of Potential Projects (to date) – An initial search for restoration projects with the potential to compensate for injuries related to the DBL-152 discharge focused on two key components: 1) nexus to the injury and 2) time to implement the alternative (*i.e.*, land is already protected, so servitudes or easements are not needed). The latter was identified as important because NOAA, being the sole Trustee, cannot enter into a conservation easement as a “holder” or “third party with rights of enforcement” due to legal constraints. Therefore, this necessitates seeking, and eventually implementing, projects on public land, or in state water or federal waters.

Nexus to Injury: Since the largest¹ injury was to sea floor, which is benthic habitat, projects that would benefit benthic resources were sought. Habitat types with the strongest nexus are: reef (coral, hard-bottom, and/or oyster) and marsh. Reef has the strongest nexus due to its high rate of secondary productivity and the amount of direct

¹ As discussed in the May 23, 2007, meeting between NOAA and K-Sea's representatives, there was likely injury to water column resources as well as benthos. However, in order to expedite settlement, reduce assessment costs, and speed restoration, NOAA's preference is to use benthic injury as a proxy for all injuries. This methodology necessitates that the parties adopt a more protective assessment of benthic injuries.

benthic habitat provided. Habitat trade-off ratios will be used to determine the compensatory acreage required.

Marsh also has a strong nexus, but is weaker than reef. Marsh productivity is primarily derived from primary production (plant growth). Benthic habitat is predominantly available in the inter-tidal zone versus the entire marsh platform; therefore, it is not as abundant or productive as a reef. Additionally, while there is a strong nexus, support of benthic communities is largely the result of the turn-over of plant matter and decomposition of plant material on the marsh surface. The process of decomposition is slow, and energy transfer to other trophic levels is inefficient. Habitat trade-off ratios will be used to determine the compensatory acreage required.

Time to Implement: As noted above, projects on public land are being sought due to legal constraints on land rights issues. Therefore, representatives of the following areas have been asked about potential restoration projects:

- Flower Garden Banks National Marine Sanctuary
- McFaddin NWR
- Texas Point NWR
- Anahuac NWR (through another colleague)

Proximity to the spill: Empirical and modeled observations of oil movement to date indicate the direction of oil movement is to the north-northwest toward Texas. Although NOAA considers it highly unlikely that oil will reach the coast, projects in Texas appear to have the closest proximity to the incident. Additionally, our initial preference is that the potential projects are located between Galveston and the TX/LA border. If a more distant project, for example one located in the Flower Garden Banks National Marine Sanctuary, creates a large benefit to species of concern, we would like to consider the project idea instead of eliminating it based on proximity.

Potential restoration alternatives identified in the FGBNMS:

- **Enhanced water quality monitoring equipment** – The FGBNMS currently has 4 "YSI datasonde" water quality instruments. These instruments are deployed on the seafloor on or near the coral reefs of the East and West Flower Garden Bank and Stetson Bank. They continuously record data on the following parameters: temperature, salinity, conductivity, pH, dissolved oxygen, light (PAR) and turbidity. This information is critical in determining background water quality conditions in the sanctuary. If a pollutant spill were to take place, the FGBNMS would need to know the natural environmental parameters to determine the impact of non-natural inputs. These instruments were purchased in 2000 and are beginning to fail; therefore, they must be replaced. No funds are currently identified for replacement. Ideally the FGBNMS needs 6 instruments - 3 to be deployed and 3 for calibration and switch out.
- **ADCP Current profiler for TABS buoys** - there are two Texas Automated Buoy System (TABS) buoys in the vicinity of the FGBNMS (see: <http://tabs.gerg.tamu.edu/Tglo/>). These were placed through a "Joint Industry

Project" (JIP) funded by oil and gas companies as required by MMS for oil spill planning and response. These buoys only measure surface current speed and direction. The FGBNMS feels it is necessary to know the current regime throughout the water column to properly plan for and respond to a non-surface discharge (i.e. pipeline).

- **Support for FGBNMS vessel** - The FGBNMS is currently building an all-purpose vessel - the R/V MANTA. It will be capable of cruising speeds of at least 22 knots, and can be used for emergency response, enforcement and surveillance. They are in need of additional equipment for the vessel to make it fully operational for incident response purposes. Equipment sought is:
 - Over the side "J" frame - needed for water quality and benthic grab sampling and sea turtle rescue.
 - Oceanographic winch - needed to operate J frame
 - Winch cable
 - "Seakeeper" water quality monitoring system - real time flow-through water quality sampling device to be used for water quality surveys in response to an incident
 - Install 5 new mooring buoys in the FGBNMS - original mooring buoy anchors were installed in 1988-92. They are becoming worn and some are in need of replacement.
 - Small ROV - Needed to investigate incidents below SCUBA diving range (>130'). Must be small and portable but powerful enough to operate in offshore Gulf currents.
- Stetson Bank Cleanup - There is a significant amount of marine debris (old shrimp nets, mechanical equipment, etc.) at Stetson Bank. This project would remove this debris from the reef.
- Baseline characterization of hydrocarbons - this would fund a one-time sampling event to test for a full suite of hydrocarbon and heavy metal pollutants in the sediments in and around the coral reefs of the FGBNMS. This baseline is necessary for comparison to possible future hydrocarbon contamination events.

Questions for FGBNMS personnel:

- Invasive species and ballast water issues?
- Is there newer marine debris from hurricane impacts?

Potential restoration alternatives identified in the Texas Point NWR:

- Acquisition of a 1000 foot long strip of private land at the mouth of the Sabine River
- Re-establishment of the jetties that lead up to the Ship Channel. A 1-mile long section of the jetties has subsided since being built.
- Beneficial use of dredged material during the dredging of the Ship Channel. The material would need to be piped to the TX Point NWR beach. To do so, the incremental cost of transport will need to be funded.

- Filling of an open water area with the TX Point NWR. The area to be filled is ¼ mile long, 50 feet wide and 20 feet deep.
- Local match for the incremental cost of dredging. This is different from the project mentioned above in that the Refuge wants to pump material over the jetties to create nearly 20 acres of marsh.

Potential restoration alternatives identified in the McFaddin NWR:

- Breakwaters along the GIWW

Potential restoration alternatives identified in the Anahuac NWR:

- Protecting a section of highly eroding shoreline with inter-tidal oyster reef and creating marsh, using dredged material or planting in shallow areas, behind the reef breakwaters.

Potential restoration alternatives involving reef:

- Individual reef alternatives have not yet been identified. However, both NOAA and the RP's representatives have agreed that we will inquire about potential reef projects in both federal and state waters; though preliminarily, federal waters are preferred.
- Since the May 23, 2007, call between NOAA and the RP's representatives, NOAA has not identified individual projects, but has spoken with NOAA personnel in Galveston, TX responsible for permit review. They have requested that we informally consult with them early in the development of any artificial reef projects as they have objected to both components of projects and entire projects in the recent past.