**EM-4 Beneficial Use of Dredged Material and Dedicated Dredging**

1. **OBJECTIVE(S)**
2. To make use of material when dredging activities or dedicated dredging occurs within or adjacent to the Barataria Terrebonne Estuary System (BTES) in order to create, maintain, and/or restore marsh, coastal ridges, and bird islands.
3. **DESCRIPTION**

This action will take advantage of existing sediments which must be periodically removed existing navigation channels or oil field canals. These materials will be used to restore degraded habitat and to create new habitat. Dredged material from maintenance dredging operations, is periodically removed from ports, harbors, navigation channels, and oil field canals representing a potential source of material. Using dredged material beneficially is an alternative to ocean disposal of dredged material, upland disposal or other non-beneficial disposal options. In addition when material is deliberately removed from one area in order to enhance another it is referred to as dedicated dredging, this activity represents another potential source of material for beneficial use.

Dredging of oil and gas field canals occurs frequently in the Barataria- Terrebonne basin. The material excavated from oil and gas pipeline and production canals may be readily usable in beneficial ways. In addition, compost or sewage sludge might also be used under certain circumstances, only if deemed harmless and appropriate.

Although a number of factors – including logistics, grain size, and presence of contaminants – will limit beneficial use of dredged materials, use of these material to nourish, restore, and create coastal habitat will be encouraged. There is a potential to use up to 20 million cubic yards (mcy) annually in Louisiana to enhance coastal wetlands through marsh creation, wetland nourishment, barrier island restoration, ridge restoration, bird islands, and other techniques.

1. **BACKGROUND**

Dredged materials can be used for various purposes that are beneficial to society and to the environment. Numerous uses for dredged materials may be considered beneficial based on the user’s perspective. Conservation uses could consist of the creation of habitat and the restoration of degraded habitat. Development uses could consist of new land for ports, infrastructure or parks. The National Environmental Policy Act (NEPA) requires consideration of project alternatives that are environmentally sound, so beneficial use should be considered for operations requiring dredged material disposal.

Two source categories for dredged material should be defined:

1. Dredged material removed from new or existing navigation channels, ports, or harbors, and from the construction or maintenance of oil and gas pipeline and production canals may be used as a resource in a productive way.
2. Dedicated dredging, which is the deliberate removal of material from one site to restore or enhance another site.

Historical beneficial use of maintenance dredged material within the BTES has been varied. Initial use was to establish new land for ports, airports, homes and industries. More recently; however, use has shifted to conservation with wetland and barrier island restoration projects and the construction of upland areas, bird nesting islands, wetlands and woodland restoration projects, and aquatic and marine habitat.

Dredged materials from both maintenance dredging and dedicated dredging operations are used beneficially in Louisiana. Plans exists for using maintenance dredged materials in projects such as marsh creation, nesting habitat creation, canal filling, and barrier island restoration. There are plans for using dedicated dredging to accomplish barrier island breach sealing, shoreline protection, beach and dune nourishment, nesting habitat creation and marsh creation projects. Implementation of these actions is hampered by high costs and conflicting uses of water bottoms (i.e., the presence of oyster leases). Because of cost implications, these actions can only be accomplished economically in areas free of oyster leases, near waterways where maintenance dredging is undertaken, or where dedicated dredging is possible. However, it might be possible to use innovative technologies to transport dredged material through newly constructed pipelines for this purpose over greater distance than currently practiced.

Permits from the Louisiana Coastal Resources Program (LCRP) for coastal uses and the Department of the Army Section 404 and Section 10 permit system are required for the construction or maintenance of oil and gas pipeline and production canals. These permits may be conditioned to require that the dredged material be used beneficially whenever possible. Due to the smaller volumes removed for these dredging operations, compared to Federal navigation channels, it may be more feasible from an economic and engineering standpoint to use dredged material from oil and gas canals beneficially.

1. **LOCATION**

Dredged material should be used to restore and create marsh at all possible locations with available technology whenever it is cost effective to do so. Because of economic and engineering realities, this action is recommended where it is economically feasible to do.

1. **LEAD AGENCY RESPONSIBLE FOR IMPLEMENTATION**

 **U.S. Army Corps of Engineers (USACE or Corps), New Orleans District**

To date, the Corps has constructed over 49 square miles of land in Louisiana through beneficial use of dredged material. The Barataria-Terrebonne has received the majority of this material.

For example, the Corps created approximately 850 acres of wetlands in 2014 through the beneficial placement of approximately 60 percent of the material dredged from Southwest Pass of the Mississippi River.

Currently, approximately 38 percent of the suitable/available material dredged under the O&M program is used beneficially. Due to either the physical characteristics or the location of the dredged material, not all of the material dredged by the Corps is available for beneficial placement in the coastal ecosystem. However, if funding were made available, there is the potential to use up to an additional 15-20 million cubic yards annually to enhance coastal wetlands through marsh creation, wetland nourishment, barrier island restoration, ridge restoration, and other techniques.

The 2007 Water Resources Development Act (WRDA) directed the Corps to integrate its work with coastal restoration efforts.

**Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) Task Force**

Dedicated dredges are used by CWPPRA to create new marsh in both the Barataria and Terrebonne basins. Dredges are used to pump materials from the Mississippi River into the Barataria basin and it is possible to get material from the Atchafalaya River as well.

 **State of Louisiana - Coastal Protection and Restoration Authority (CPRA)**

The State of Louisiana currently has a “Comprehensive Master Plan for a Sustainable Coast.” In the plan, it currently has marsh creation projects that are created through the beneficial use of dredged material.

**State of Louisiana – Office of Coastal Management (OCM)**

Through the state LCRP since 2009, the State also requires private applicants who want to dredge more than 25,000 yd3 of sediment to place the material in coastal restoration projects or pay a fee to support restoration. The table below lists the cubic yards used and acres created within the BTES since 2009 by OCM through its’ LCRP and beneficial use policy.

|  |  |  |
| --- | --- | --- |
| Cubic Yards | Acres Created | Year |
|  129,134.00  |  77.29 | 2009 |
|  769,952.00  |  119.99  | 2010 |
|  839,569.24  |  173.73  | 2011 |
|  1,029,910.00  |  652.33  | 2012 |
|  1,787,526.30  |  230.35  | 2013 |
|  2,897,314.43  |  252.33  | 2014 |
|  219,428.17  |  125.79  | 2015 |
|  29,607.00  |  171.37  | 2016 |
|  7,702,441.14  |  1,803.18  | Total |

1. **TIMELINES AND/OR MILESTONES**

Over the next 20 years, the Corps Beneficial Use of Dredged Material (BUDMAT) Program has identified the following areas of opportunity within the BTES: Barataria Bay, Port Fourchon, Berwick Harbor, Atchafalaya River, Mississippi River, and the Houma Navigation Canal.

CWPPRA is currently authorized through 2017. It is anticipated that the program will be reauthorized for an additional 10 to 20 years. Projects will be built as they move through the public process.

Over the next 20 years, the State of Louisiana CPRA will be implementing its Comprehensive Master Plan for a Sustainable Coast creating some marsh projects via the beneficial use of dredged material.

The States OCM continuously utilizes adaptive management by re-evaluating the policies and procedures of the LCRP and how to manage coastal uses among all users. Specifically to this action plan the OCM will review the effectiveness of its’ beneficial use policy and adjust it appropriately as needed over the next 20 years.

1. **POSSIBLE RANGE OF COSTS AND SOURCES OF FUNDING**

The Corps Beneficial Use of Dredged Material (BUDMAT) Program objective is to cost effectively increase the beneficial use of material dredged from federally maintained waterways at a total cost of $100 million over a ten-year period.  Implementation of the BUDMAT Program is authorized by the Water Resources Development Act (WRDA) of 2007 - Section 7006(d) within the Louisiana Coastal Area Program.

CWPPRA currently spends on average between $2.5 and $18 million on marsh creation projects that beneficially use dredged material. Projects are identified and funded based on a competitive wetlands value assessment. CWPPRA is currently authorized through 2017. It is anticipated that the program will be reauthorized for an additional 10 to 20 years. Funding for aforementioned projects will be available as the projects move through the public process.

The State of Louisiana has plans for large scale marsh creation projects laid out in Louisiana’s Comprehensive Master Plan for a Sustainable Coast. It is envisioned that some portion of the $5 billion Gulf Coast Ecosystem Restoration Task Force funds will go toward this technique.

Additionally, The Natural Resource Damage Assessment (NRDA) process may also provide funding under the EPA Clean Water Act to repair damages caused by the Deepwater Horizon Oil Spill. Louisiana will receive approximately $500 million to implement projects for the coast under the State Master Plan. It is anticipated that a portion of these funds may be used in the BTES for this type of restoration.

1. **PERFORMANCE MEASURES**
	1. **Possible Data Gathered:**

 All organizations maintain a list of acres created.

Some organizations maintain a list of the millions of cubic yards used.

* 1. **Monitoring:**

Corps completes BUDMAT reports

CWPPRA keeps track of acres created and maintained

State of Louisiana keeps track of acres created or maintained

CPRA’s Coastal Reference Monitoring Stations (CRMS) collect water quality and vegetation data on most restoration sites

* + 1. **Parties Responsible**: Corps, CWPPRA, State of Louisiana, CPRA
		2. **Timetable for Gathering Data:** Annual Report
		3. **How Data is Shared:** Via Agency Websites
		4. **Possible Data Gaps:** None Identified
		5. **If Additional Funding is Needed:** Yes, as available