Dredging material is an important resource that, if used appropriately, can provide environmental, societal, and financial benefits. This guidance is intended to promote appropriate use of dredged material by highlighting the necessary steps for implementing this project type.

**Benefits of Dredged Material**
- Environmental
- Societal
- Financial

**Dredging and Restoration Planning Process**

**Dredging Start →**
1. Understand project goals.
2. Determine dredge volume, grain size, and quality.
3. Evaluate the project using BUILD to determine if BU may apply.
4. Is the dredged material chemically and physically suitable for BU based on the MDE Innovative Reuse and Beneficial Use Dredged Material Guidance? Consult MDE for assistance.
5. Will the placement site benefit environmentally from the available quality of dredged material? Are water effluent discharges being considered? Engage MDNR Environmental Review for assistance.
6. Identify restoration project technique based on material type.
7. Estimate costs, and identify project goals, partners, and funding sources.
8. Determine land management and engage the property manager.
9. Evaluate the site:
   - Perform a desktop analysis to define site characteristics
   - Visit site to find opportunities & challenges
   - Demonstrate site restoration need
10. Did you obtain rights of way and access?
11. Establish quantifiable dredging and restoration project goals.

**Restoration Start →**
1. Understand project goals.
2. Identify project site and contact the property manager.
3. Identify project partners. Estimate costs and identify funding sources.
4. Evaluate the project in BUILD to determine if BU may apply.
5. Are the dredging and restoration sites volumetrically, spatially, and temporally aligned, and are dredging and placement methods cohesive?
6. Can the project wait or volumes be adjusted?
7. Is the dredged material chemically and physically suitable for BU based on the MDE Innovative Reuse and Beneficial Use Dredged Material Guidance and project goals?
8. Move restoration project forward without incorporation of BU.
9. Will the placement site benefit environmentally from the available quality of dredged material? Are water effluent discharges being considered?
10. Can the project wait or volumes be adjusted?

**Environmental Review Start →**
1. Understand project goals.
2. Does the proposed project intend to beneficially use dredged material?
3. Evaluate the project in BUILD to determine if BU may apply.
4. Is the dredged material chemically and physically suitable for BU based on the MDE Innovative Reuse and Beneficial Use Dredged Material Guidance? Consult MDE for assistance.
5. Will the placement site benefit environmentally from dredged material? Are volumes or volumes be adjusted?
6. Will the placement site benefit environmentally from the available quality of dredged material? Are water effluent discharges being considered?
7. Can the project wait or volumes be adjusted?
8. Recommendations for BU and direct project manager to this guidance.

**Acronyms**
- **BU** - Beneficial Use
- **BUILD** - Beneficial Use: Identifying Locations for Dredge
- **DMP** - Dredged Material Placement
- **MDE** - Maryland Department of the Environment
- **MDNR** - Maryland Department of Natural Resources
- **MOU** - Memorandum of Understanding
- **TOY** - Time of Year
- **USACE** - United States Army Corp of Engineers
The process is intended as a framework for utilizing the beneficial use of dredged material and may not be representative of all projects.

**Site Details**
- Identify placement site characteristics (biological, chemical, physical, and social), and accessibility.
- Consider design and engineering limitations (including timing).
- Identify physical challenges.
- Consider long-term site plans.
- Consider all potential positive and negative environmental impacts (e.g. effluent discharge).

**Resiliency**
- Consider opportunities for co-benefits (environmental, social, etc...).
- Consider ecosystem service benefits.
- Consider economic benefits.
- Consider climate change and opportunities to enhance resiliency.
- Consider social vulnerability and environmental justice.

**Community**
- Consider community engagement.
- Develop a communication framework with project partners.
- Consider impacts to public access.
- Identify user groups and Citizen Advisory Committees.

**Contemporary Issues**

**Continued**
- Initiate team meetings with all project partners (i.e. property manager, community, restoration planners, dredging planners, funding partners).

**Site Details**
- Fully consider project characteristics.
- Develop a preliminary 30% design. Determine positive and negative impacts and perform an alternatives analysis. Begin to consider long-term maintenance plans. Involve MDNR internal review if applicable.

**Community**
- Present at a Joint Evaluation meeting to receive critical feedback.
- Develop at minimum a 60% design. If applicable, elicit feedback from the community.
- Determine project cost. Is the project cost prohibitive?

**Legal Agreements**
- Confirm TOY restrictions and integrate regulatory feedback into the design. Confirm final designs and receive permits.

**Legal Agreements**
- Implement project plans.

**Evaluate Planning**
- Develop community engagement and monitoring plans, including plans for pre-construction monitoring for 3 years minimum.
- Develop adaptive management plans.
- Develop long-term maintenance plans.

**Legal Agreements**
- Obtain legal agreements authorizations.
- Obtain intra-departmental or inter-agency MOUs if applicable. Designate responsible party for monitoring and maintenance.

**Perform as-built survey.**
- Implement adaptive management as necessary.
- Implement long-term maintenance plans.

**For assistance, contact:**
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**Stage 4**
- Implement post-construction monitoring for a minimum of 3 years.

**Stage 3**
- Build the BU project.
- If appropriate, engage community in monitoring activities.
- Implement during construction monitoring.

**Stage 2**
- Build a framework for assessing progress and success.
- Engage the public in the stages of the project, making clear expected outcomes.
- Implement 1 year of pre-construction monitoring.

**Stage 1**
- Implement a communication framework between project partners.

**Keywords:**
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- Resiliency
- Community
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