



Innovative Reuse Dredged Material

Lessons Learned: Lightweight Aggregate Pilot Project

Carroll County Commissioners
Environmental Advisory Council
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Background

- ▶ Maryland's Dredged Material Management Program
 - **Dredging Needs** – maintain a safe and clear shipping channel
 - Bay material
 - Harbor material
 - C&D Canal approach channels material
 - **Placement Capacity** – availability; cost-effectiveness; public acceptance
 - **Management Solutions: Priorities for the Program**
 - Beneficial Use
 - Innovative Reuse
 - Goal: Recycle 500,000 cy of Harbor material per year
 - **What's in the Material?**
 - Sediment Quality
 - Physical Characteristics
 - Chemical Characteristics



Innovative Reuse

- ▶ **Innovative Reuse:** includes the use of dredged material in the development or manufacturing of commercial, industrial, horticultural, agricultural, or other products.
 - MPA Demonstration Projects 2008 – 2013
 - Schnabel Engineered Fill
 - Shirley Plantation Reclamation
 - Lightweight Aggregate
 - Manufactured Topsoil Processing
 - Agricultural Amendments
 - Request for Information (RFI) for LWA 2013
 - Joint Chairmen’s Report (JCR) 2014
 - Revised Innovative & Beneficial Reuse Strategy 2014
 - Interagency Regulatory Workgroup 2015-2016

Lightweight Aggregate

- ▶ Lightweight Aggregate (LWA)
 - LWA is a coarse aggregate used in the creation of lightweight products such as concrete block or pavement.
 - Thermal processing technology proven to meet industry standards for a marketable product on a demonstration scale.
 - MPA conducted small-scale pilot project 2009 - 2012





RFI - LWA

- ▶ Public-Private Partnership RFI issued December 2013
 - **Purpose:**
 - obtain information on capacity recovery at Cox Creek DMCF by converting dredged material to LWA.
 - Sent to over 375 companies and academic institutions, advertised on MPA's main and Safe Passage websites, and eMaryland Marketplace.
 - **Response:**
 - one turn-key provider,
 - seven equipment/systems suppliers,
 - one mining and processing firm
 - **Conclusion:** severe lack of competition therefore ultimately no RFP was pursued. Unsuccessful effort to expand the LWA pilot project into a full scale operation.



Joint Chairmen's Report

Considerations



- ▶ **Technical Feasibility**
 - Effort, Time, Costs, Practicality
 - Only limited pilot scale experiences; no analysis of production level scale projects
- ▶ **Commercial Viability**
 - Project Costs
 - Revenue from Sale of LWA
 - Marketability – Competing Products / Demand / Contaminants
- ▶ **Environmental Impacts / Permits**
- ▶ **Competition**
- ▶ **Regulatory Questions**
- ▶ **Public Acceptance Questions**



Joint Chairmen's Report

Analysis



- ▶ Technically feasible, but no full-scale implementation anywhere
- ▶ Market demand for LWA, but due to contaminants in Harbor dredged material demand is speculative
- ▶ Estimated commercial value comparable to existing LWA products, however, competing products are not associated with contaminants – likely barrier to market acceptance
- ▶ Understanding/assessing full value of LWA needs a performance history of a comparable product
- ▶ 1.5 times more expensive than the most expensive traditional methods of dredged material management
- ▶ Recommended implementing **Revised IR Strategy**

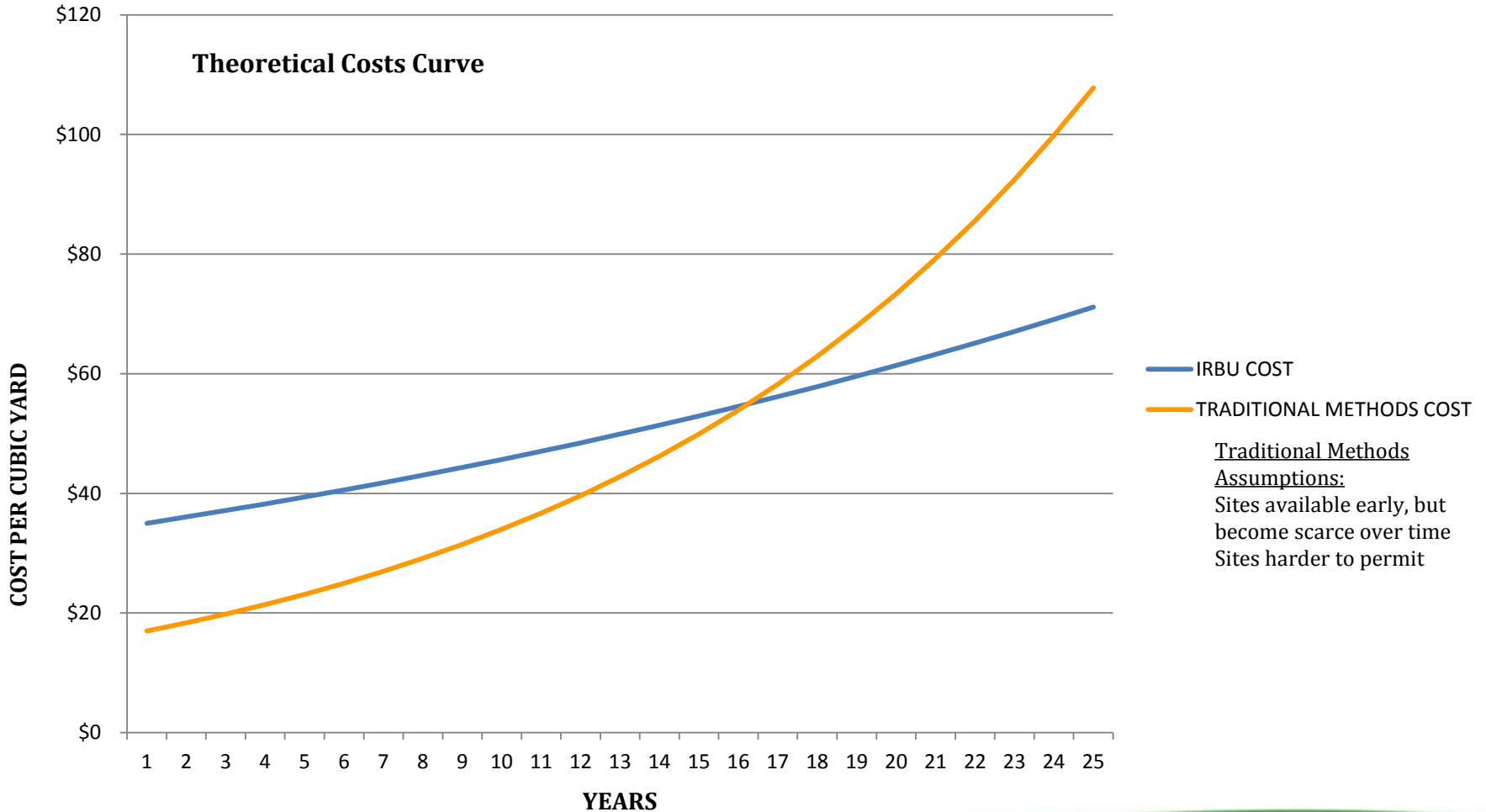


Lessons Learned

- ▶ Market and market sustainability difficult to predict.
- ▶ Reliable volume and quality of available dredged material key to project economics.
- ▶ All IR options studied to date have costs per cy that are significantly higher than those associated with traditional dredged material placement options.
 - However:
 - Most cost per cy estimates do not take account of all future costs or the full suite of benefits.
 - There are fewer and fewer options for long-term placement, and costs for placement and management are expected to increase over time.
 - Cost estimates have not been “apples to apples”.



Cost considerations for decision IRBU vs. traditional land-based containment methods





IBR Regulatory Workgroup

- ▶ **Goal:** As part of the 2014 Revised IBR Strategy, conduct comprehensive review of best practices around the country and identify recommendations for policy changes to establish a more predictable, streamlined regulatory framework within which to implement IR in Maryland.
- ▶ **Key Findings & Recommendations:**
 - Technical Screening Criteria & Guidance Document
 - Close Regulatory Gaps through Existing Permitting Mechanisms where Applicable
 - State Agencies as a Leader in Reuse
 - Outreach & Education – Public Support/Acceptance Needed
 - Continue to Evaluate Need for Statute Change/COMAR
- ▶ **Next Steps:**
 - Outreach/Education Tools: Fall 2016
 - MDE Approved Technical Screening Criteria & Guidance: Spring 2017
 - Executive Order for State Agencies: 2017



Questions?

END