Beneficial Use (BU) Virtual Workshop

ERDC + USACE + HQ

Engineering With Nature® (EWN®)
Regional Sediment Management (RSM)
Coastal Inlets Research Program (CIRP)

July 13th, 14th, and 15th, 2021

US Army Corps of Engineers®

ERDC

BU Virtual Workshop – Day 3 Agenda

July 15, 2021: ERDC, Districts, HQ Develop Alternative Actions and Next Steps
AUDIENCE – ERDC + Districts/Field

1400 – Opening remarks and Summary of the workshop so far *Kelsey Fall and Amanda Tritinger (ERDC - CHL)*

1415 – Importance of BU to the Nation *Todd Bridges (ERDC – EL)*

1425 – Guided Discussion: What's Next?

Moderator: *Julie Rosati (ERDC – CHL) & Danielle Szimanski (USACE – NAB)*

1. **What are BU big picture needs?**
2. **Create action items.** *(i.e. Statement of Need dev. plans)*

1535– Final thoughts/Comments *Kelsey Fall (ERDC - CHL)*

1545 – Announce Award *Todd Bridges (ERDC – EL)*

1555 – Closing remarks *Amanda Tritinger (ERDC - CHL)*

As we wait for attendees to get seated, re-introduce yourself with your ONE BIG BU WISH LIST

Welcome & Opening Remarks

– Purpose –

This BU workshop will discuss common BU design and application tools and procedures, as well as success stories on innovative BU projects. We will discuss challenges and lessons learned related to engaging with stakeholders, regulatory issues, state and federal policies, the federal standard, programmatic guidance, and schedule coordination.

– Objectives –

1) Develop and document the status of BU across USACE,
2) Organize a BU community across ERDC and USACE,
3) Develop effective communication and collaboration on BU within USACE,
4) Identify obstacles and levers for BU, and
5) Identify and initiate actions for making progress on BU.

– Due Out –

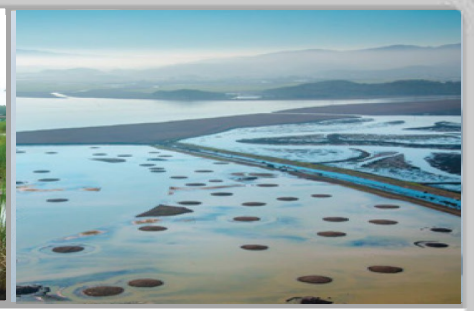
At the end of this workshop, our goal is to have more BU. The major due-out from this workshop is to define and assign specific implementable action items towards this goal.

Summary

- Consistent communication is key; collaboration across USACE, upward, and outward (start early, do often)
- BU overall varies across regions, scales, and benefits. The definition of BU needs to be allowed to change; we need a team to help develop this definition.
- Communication of progress and state of BU is important (for funding, for buy in, to get outside groups to the table, to get public support); we need a team who can lead this.
- We need to create opportunities for knowledge sharing (as SMEs and Champions retire, we need that experience to transfer), and to build connections, and to be PRESENT (i.e. ERDC puts boots on the ground for District project)
- There is a need to build a BU network; database, ask questions, share experiences…

The Beneficial Use Imperative

Dr. Todd S. Bridges
Senior Research Scientist (ST), Environmental Science
National Lead, USACE Engineering With Nature®
US Army Corps of Engineers
Todd.S.Bridges@usace.army.mil



Engineering With Nature®

N-EWN

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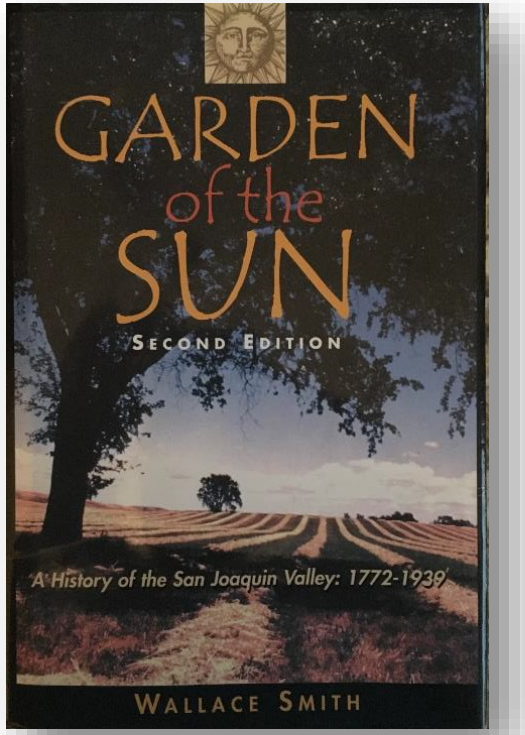
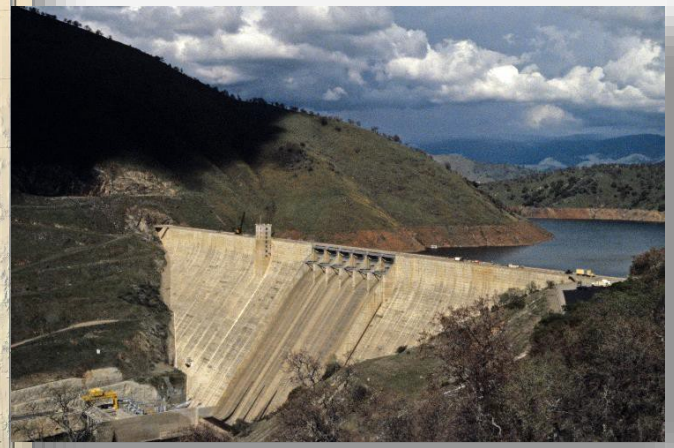
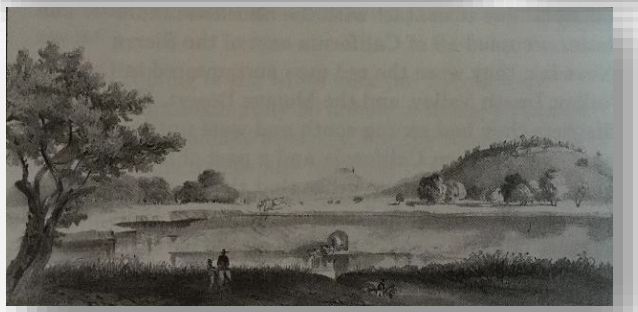
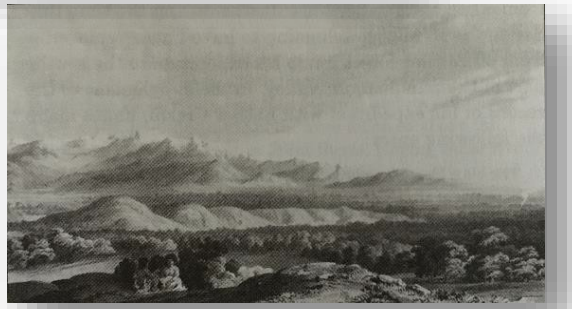
The San Joaquin Valley, California






California "Satellite" Image, ca. 1851
by Mark Clark





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Beneficial Use: *Status and Opportunities*

"Beneficial use" is using dredged sediment to achieve additional benefits beyond its removal from a channel/waterway, including other economic, environmental or social benefits.

- **USACE has a long track record of BU**
  - 30% of dredged material beneficially used over last 20 years (60 out of 200 mcy/yr)
  - >1.5 billion cy used in beach construction over last 100 years
- **BU supports:**
  - Climate change adaptation thru *Engineering With Nature*®
  - Habitat for fish and wildlife
    - Tribal equities, Threatened and Endangered Species
  - Social value to enhance resilience of communities and vulnerable/underserved populations
- **BU challenges:**
  - Budget constraints
  - Federal policies/regulations/business practices
  - State policies/regulations/business practices
  - Advancing the 'technology'
  - Synchronizing government and the private sector


Horseshoe Bend, Atchafalaya, LA

Middle Harbor, Port of Oakland, CA


Hamilton Wetlands, San Francisco Bay, CA


Galveston Bay, TX


Cat Island, Green Bay, WI


Thin-Layer Placement for Wetlands, Avalon, NJ

A "Sustainability Ledger" for Sediment Management: A Mindset

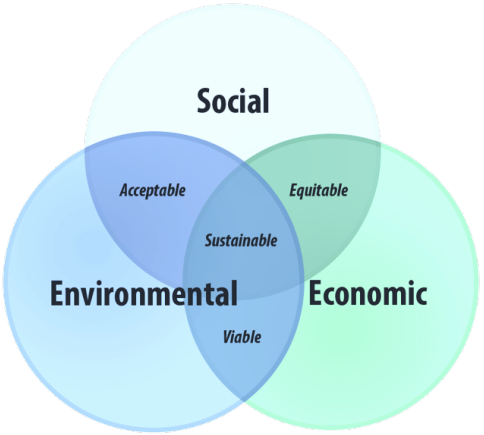
Sustainability is achieved by efficiently investing resources to create present and future value

Efficiency

- Reducing sedimentation in channels & reservoirs
- Reducing transport distances for dredged material
- Reducing dredging time
- Expanding operational flexibility
- Linking multiple projects
- Reducing resource consumption and impacts

Value Creation

- Restoring natural sediment processes to sustain landscapes
- New nature-based features that reduce flood risks
- New habitat for fish and wildlife
- New features that provide recreational and other social value
- Budget space for additional infrastructure work



Applying the Full Range of Beneficial Use

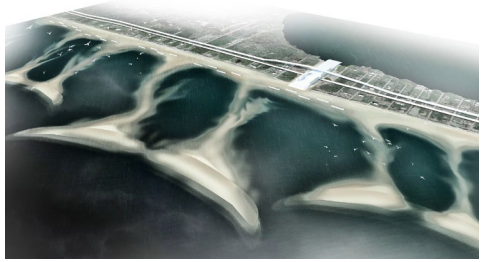
Sediment “Recharge” via Dredging

Direct Wetland “Nourishment”

Wetland Creation

Island Enhancement or Restoration

Engineering / Operational Effort



Strategic Placement

Thin-Layer Placement for Bottom Contouring

Beach and Dune Construction

New Island Construction

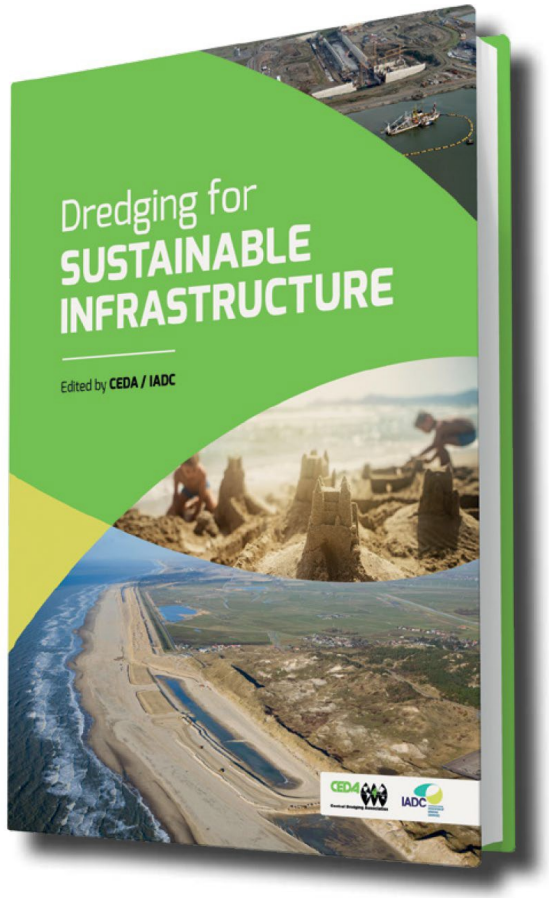
Dredging for Sustainable Infrastructure

Integrating Dredging with Sustainable Development

By Todd Bridges and Tiedo Velinga

Guiding Principles

1. ***Comprehensive consideration and analysis of the social, environmental and economic costs and benefits of a project is used to guide the development of sustainable infrastructure.***
2. ***Commitments to process improvement and innovation are used to conserve resources, maximize efficiency, increase productivity, and extend the useful lifespan of assets and infrastructure.***
3. ***Comprehensive stakeholder engagement and partnering are used to enhance project value.***



- A Call to Action -

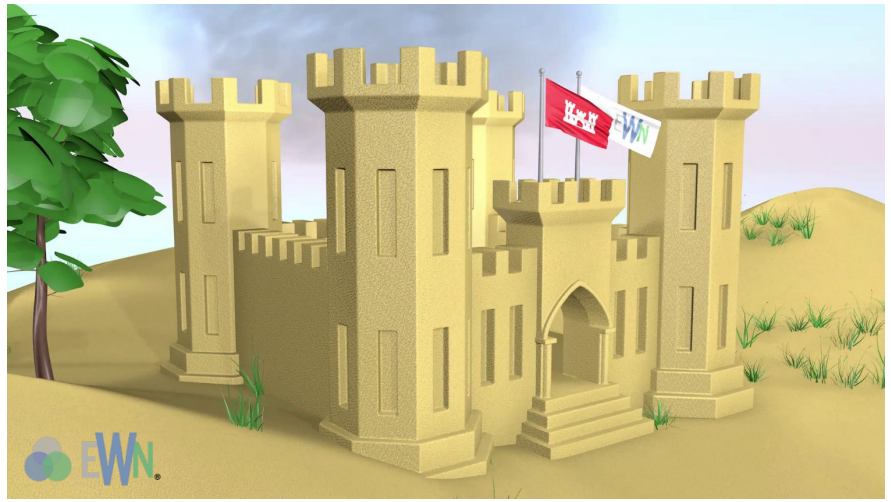
An Imperative for the 21st Century:

"Revolutionary" Amounts of Beneficial Use

Beneficial Use Innovation: ***There's something for everyone to do!***

- **Government Agencies Doing Dredging:** Doing business differently
- **Ports / Navigation Sector:** Multi-purpose projects
- **Regulatory Agencies:** Efficiently pursuing win-wins
- **Dredging / Engineering Companies:** Innovative engineering and operations
- **Environmental NGOs:** Facilitating P3s

The Key: Affordability, Affordability, Affordability



San Joaquin River National Wildlife Refuge

SJRNWR, March 2017

Dos Rios

Guided discussion:

What is Next?

Moderator: *Julie Rosati (ERDC – CHL) & Danielle Szimanski (USACE – NAB)*

1. **What are BU big picture needs?**
2. **Create action items**

Please make extensive use of the WebEx chat feature – we want to capture all of your ideas!

Increase BU material (sediment, rock, etc) use, how? What is that one thing that holds you back?

- **What is that one thing that holds you back?**
  - **Fear of unintended impacts.**
    - **To overcome this it takes demos, personal relationship (trust), which is hard to build with employee turnover.**
    - **Can we demo or quantify degree of impacts? Education that is easily accessible (cough Brooke et al-website), publish, conference, share!**
    - **What about showing similar project elsewhere? The key is make it personnel, how can we do that?**
    - **There is a lot of knowledge out there, but having more, EASY to access, be able to really "strut our stuff" would be HUGELY useful. Overwhelm them. (outside USACE firewalls.**
  - **Partnerships with aggregate users could help. Logistics are challenging.**
    - **Upland there are opportunities to give away material, but getting to them in challenging.**
    - **Logistics associated with having these conversations, making the "deals" (regulatory fine tape?)**
    - **Are testing standards high enough? Is it safe? Tough to get material to those to show this. Time consuming.**
    - **How is NJ/NY harbor doing it? They seem to have do it well. (follow up with NAN?)**
    - **We (SAM) are finding that when we are the material donor and the resource agencies are the owners of the restoration project we move things forward on scales never seen before**
  - **Straying from the historical/prior placement locations (upland DMMAs, etc) that are already permitted and ready to go**
    - **New placement site permit hold it up, getting the correct documents in order**
  - **Timeliness of planning documents in order to align with dredging needs**
    - **Environmental placement windows**
    - **Things that I have see hold us back are logistics on dredging and the restoration site needs and getting internal agreements executed in timeframes that allow work to move forward with willing partners.**
    - **O&M projects are on a set schedule, extra planning for BU (additional testing and env requirements) takes more time than offshore disposal and PM and Division level don't want to risk delays in execution**
  - **Cost**
    - **Cost and the federal standard (who pays the incremental cost- and is that the right question). Commitment by Districts to look for and plan for reuse opportunities (even it if costs more in the short term)**
    - **Federal Standard - BU sites may be considered an incremental cost. Opportunity - Section 125 to help redefine Federal Standard (perhaps).**
    - **Cost associated with not doing BU (erosion shoreline). We look at the short term cost and benefits when making decisions and not the long term benefits**

Increase BU material (sediment, rock, etc) use, how? What is that one thing that holds you back? (cont.)

- **Cost cont.**
  - **Mechanism to incorporate BU site for federal cost and not incremental cost. Guidance on what you need to do to incorporate this in their project. Is it DMMP? Or is it the last decision document.**
  - **We need to build up benefit side (to overtake the cost). Is this Post creation monitoring? Models for the region?**
    - **Develop regional frameworks for quick and efficient quantification of benefits and costs.**
    - **O&M dredging isn't required to document benefits. Often you have $$ for design, contract, not necessarily funds to document benefits. Duild, walk away and forget about it" is not smart or sustainable practice in 2021 and beyond.**
    - **Couple with restoration group and collaborative projects with monitoring in the plan been shown useful (get them at the beginning)**
    - **Adaptive management- buy down risk**
    - **Adaptive design, as well.**
  - **Educate-**

- **Equipment needs (Do you have everything you need to do this?)**
  - **A limitation in the industry and us in lining up the equipment needs for BU construction as we are focused on the needs of the channel dredging.**
  - **Technology is there but doesn't align, Big channel, big dredge need, but small restoration with small dredge need. How can we get these to match up?**
  - **Inventory of regional resources used for BU?**
  - **On the west coast we need more pumpashore options. We are trying to think about minimizing double handling of material to keep costs down. Also, in a shallow bay, we need a scow that can get closer to shore.**
  - **Industry concern- Performance SPECS, risks to industry to take on these BU projects. Get smarter in owning sharing the risks. How do we share in the risks on these types of projects.**
    - **Tolerance and field fits are a good way to lower the risk and reduce the cost.**
  - **A serious discussion with the dredging industry about innovation. I would propose that there has not been substantive innovation in the dredging industry in more than a 100 years. Just making a dredge bigger is NOT innovation.**
  - **St Paul District will be experimenting with agricultural land amendments plowing/discing to loosen clay soil. lots of different types of plots will be studied. Also may experiment with sprinklers for thin layer placement or manure injection to reduce labor.**

Solutions and Action Items

- How do we educate? What do we need?
  - Story map, list of on going monitoring, books, podcasts, training?
  - Videos (2-3 min target man on the street)
    - ~10k for a very well done video and graphics from ITL team. Peanuts
    - Videos for different audiences
    - Field video
    - Time lapse of BU
    - Video on top of dredge-with music- youtube (example from MVN)
  - Not just outside, but internal shift on BU
    - Would demonstrated case studies help. What is needed to get too that?
      - Top down, bottom up approach. Need to get other folks in our business line to understand BU worth. Corps wide advertising*
      - Can we get the big wigs to show BU is next step, but there are challenges, but we are USACE we can overcome it.

Action Items

1. Gen LTG Spellmon to create a wallet-side CORE (Corps) VALUE: Just Do BU in Corps (Todd you got this ☺)
   - It got to be more then a broad statement. We have to change a culture and lay the ground work so that each time we do it there is not a new internal obstacle to overcome.
2. Establish Beneficial Use Work Group (A/K will be contacting all of you to follow up ☺)
   - MVR and MVP has stood up a Beneficial Use Work Group, state and federal partners, NGOs, and hopefully in the future industry and contractors
   - BU website revamp (USACE BU website)- utilize BU practice leads
   - Plan how to have conversations with the dredging industry about innovation. I would propose that there has not been substantive innovation in the dredging industry in more than a 100 years. Just making a dredge bigger is NOT innovation.
     - WEDA conference (Laurel Reichold) workshop with industry. Help form agenda.
   - Organize documents:
     - shares best practices (best practice library)
     - A roll-up of regional issues, topics, opportunities to the national view. There will be common and unique elements for collective awareness, planning and action.
     - Inventory of regional resources used for BU?
3. BU Practice leads: Experienced folks that are available to help districts navigate challenges on particular projects to get more success stories (Any volunteers- let us know!)
   - Our BU group in Mississippi are great with years of experience and lessons learned (A and K will follow up with- Elizabeth Godsey)
   - BU subject matter experts- regulatory POC, real estate POC, contracting challenges POC etc.
   - Districts having a BU lead a must!
   - Research area review group teams-good resourse.
   - I'm happy to volunteer as a ecological assessment/monitoring SME if needed. (Jacob Berkowitz).
4. Organize the out from this very productive discussion this week into a number of follow-up topics that could form the basis of future focused web-meetings and/or projects. (Kelsey and Amanda -with counsel from Todd, Katie, Tanya)
5. Innovation with Industry (POC- David Moore)- Create way to share with industry, perhaps similar to the WEDA conference suggestion, can we get industry partners in the room with us?

What is next?

Create action items.

- **Create USACE BU Working Group**
  - **Create Communications Team**
  - **Need to create Research Implementation Teams**
  - **Create Research Implementation Strategy**

First Annual, Innovative Beneficial Use Project Award

US Army Corps of Engineers

ERDC

The Timothy L. Welp Award for Advancing Beneficial Use of Sediment

The Timothy L. Welp Award for Advancing Beneficial Use of Sediment is given annually to recognize teams (across and outside of USACE) that have achieved progress on BU through collaboration, partnering, innovation and the creation of diversified value through BU.

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Winner: Seven Mile Island Innovation Laboratory (SMIIL) Gull & Sturgeon Island Habitat Restoration and Marsh Protection

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Honorable mentions to recognize projects leading BU practice:

Swan Island, MD Restoration Project

Removal of Beneficial Use Impairments at Duluth Harbor

Middle Mississippi River Island Creation

BU – Thank you for attending!