

Thin Layer Placement of Dredged Material – A Web-Based Repository of Resources and Case Studies



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Outline

- **Definition**
- **Project Need**
- **Project Objectives**
- **TLP Website**
- **TLP GIS-based Map Portal**
- **Case Studies Demo**
- **Future Actions**



Definition of Thin Layer Placement

- Purposeful placement of dredged material for functional/ecological benefit
- Depends on Project Objectives
 - ▶ Placement depth not restrictively defined
 - ▶ Wetlands nourishment ~ 6 inches thick
 - ▶ Mobile Bay sediment budgeting – 6 to 12 inches
 - ▶ IJburg island creation > 12 inches



Photo from Steve Miller Ellicott Dredges LLC



IJburg – Island Creation (de Leeuw et al. 2002)



Mobile Bay



TLP Website and Database - Project Need

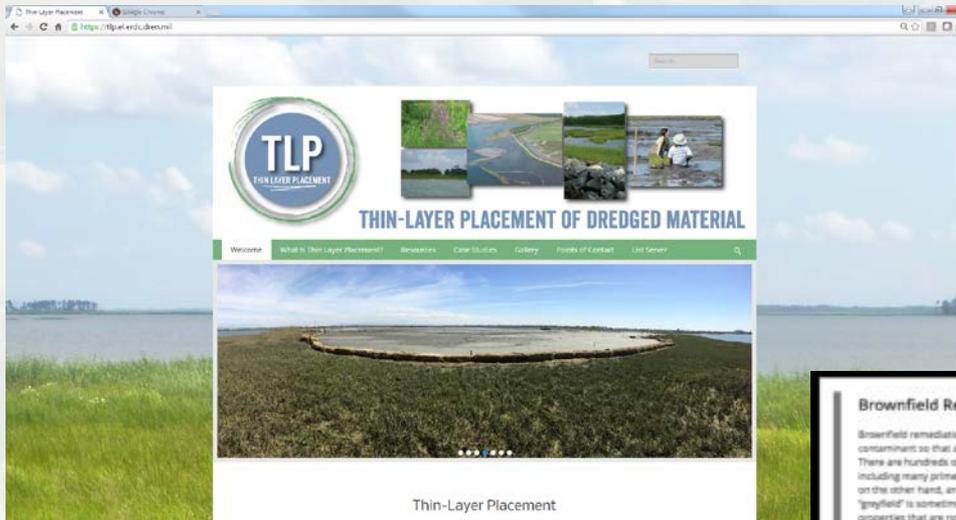
- Information and case studies for TLP not well documented
- Little or no technical guidance available for TLP design or implementation
- Multiple knowledge gaps
- An accessible, consolidated, living information resource is needed



Photo from Steve Miller Ellicott Dredges LLC

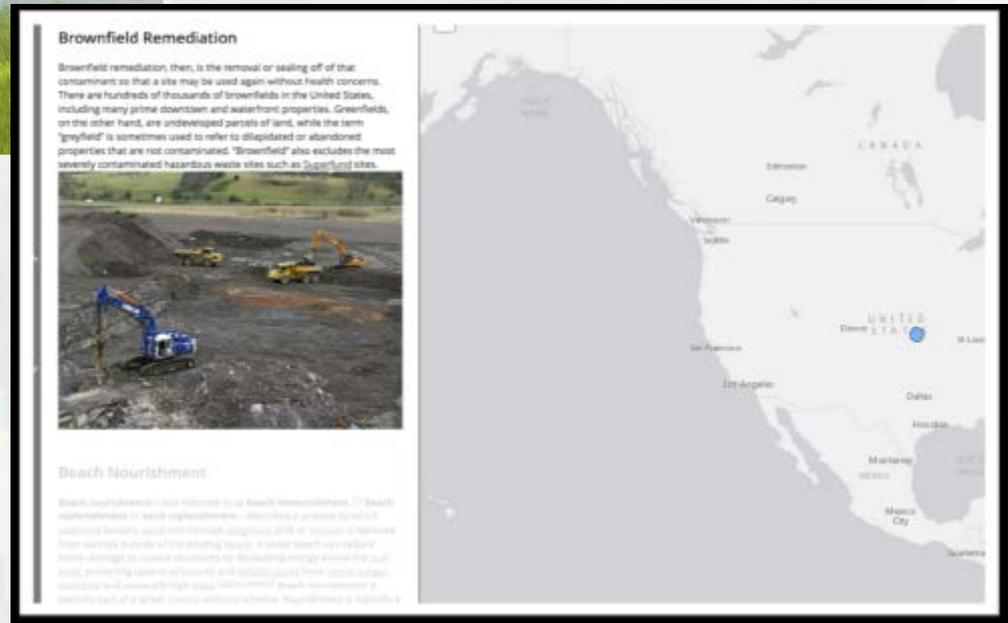


TLP Tools



Website

Map Portal



Website and Database Primary Objectives

- Aggregate the current state of knowledge regarding thin layer placement of dredged material
- Consolidate literature/references pertaining to all project phases – from design to post-construction monitoring
- Provide centralized, accessible, and consolidated resource for case studies
- Provide a basis for guidance development



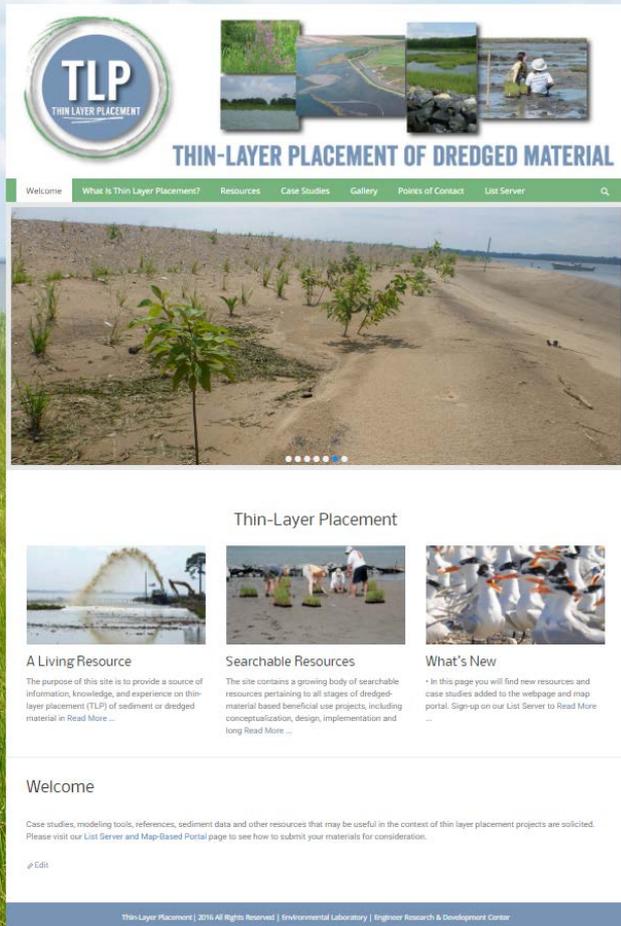
Website and Database Secondary Objectives

- Provide a vehicle for collection of case studies worldwide
- Create an engaging and user friendly product
- Create a database that was compatible with the USACE data integration initiative



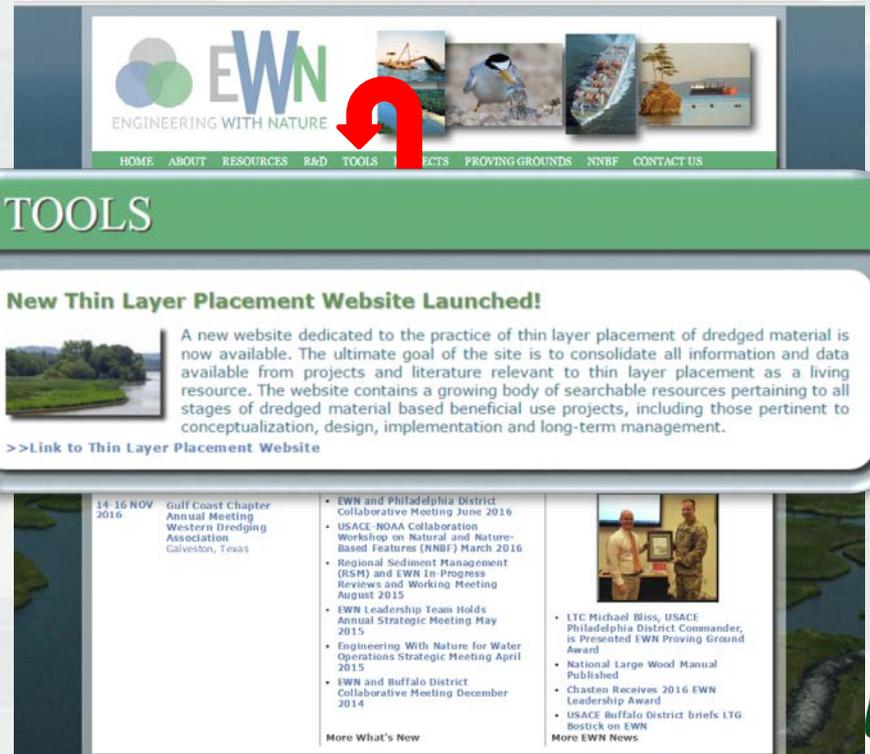
TLP Website - Access

<https://tlp.el.erdc.dren.mil/>



The screenshot shows the homepage of the Thin-Layer Placement (TLP) website. At the top left is the TLP logo, which consists of a circular emblem with 'TLP' and 'THIN LAYER PLACEMENT' text. To the right of the logo is a horizontal strip of four small images: a green field, a map, a rocky shoreline, and two people in a boat. Below this is the title 'THIN-LAYER PLACEMENT OF DREDGED MATERIAL'. A navigation menu includes 'Welcome', 'What is Thin Layer Placement?', 'Resources', 'Case Studies', 'Gallery', 'Points of Contact', and 'List Server'. The main content area features a large photograph of a sandy beach with young trees. Below the photo are three columns: 'Thin-Layer Placement' with a small image of a dredger, 'A Living Resource' with a small image of a beach, and 'Searchable Resources' with a small image of people. A 'What's New' section is also present. At the bottom, there is a 'Welcome' message and a footer with copyright information.

www.engineeringwithnature.org/



The screenshot shows the homepage of the Engineering With Nature (EWN) website. At the top is the EWN logo, which features three overlapping circles in blue, green, and red, followed by the text 'EWN' and 'ENGINEERING WITH NATURE'. To the right of the logo is a horizontal strip of five small images: a boat, a bird, a map, a tree, and a boat. Below this is a navigation menu with 'HOME', 'ABOUT', 'RESOURCES', 'R&D', 'TOOLS', 'PROJECTS', 'PROVING GROUNDS', 'NNBF', and 'CONTACT US'. A large red arrow points from the 'TOOLS' menu item to a highlighted 'TOOLS' section. This section contains a white box with the heading 'New Thin Layer Placement Website Launched!' and a small image of a green field. Below the heading is a paragraph of text: 'A new website dedicated to the practice of thin layer placement of dredged material is now available. The ultimate goal of the site is to consolidate all information and data available from projects and literature relevant to thin layer placement as a living resource. The website contains a growing body of searchable resources pertaining to all stages of dredged material based beneficial use projects, including those pertinent to conceptualization, design, implementation and long-term management.' Below the text is a link: '>>Link to Thin Layer Placement Website'. At the bottom, there is a 'More What's New' section with a list of recent events and a small image of two people.

TLP Map Portal

Key Features of the Redesign:

- ▶ **User-centered Design – intuitive and easy-to-use**
 - A more intuitive, easy-to-use interface
- ▶ **Login Options: LinkedIn Credentials or Email Log-in**
 - Login using email and password
 - Broader Access for Corps and non-Corps users
 - Connect your LinkedIn account to pull-in your professional profile
- ▶ **A Community of TLP Professionals**
 - Create a user profile and populate your professional information using LinkedIn or the user profile dashboard



TLP Map Portal

Key Functionality:

▶ **Draw Polygons: Unlimited Points vs. Setting a point**

- Easily draw your project area by plotting unlimited points. All geo-location information is captured including dimensions and longitude/latitude, etc.

▶ **Story Maps: Upload Rich Media and Documents**

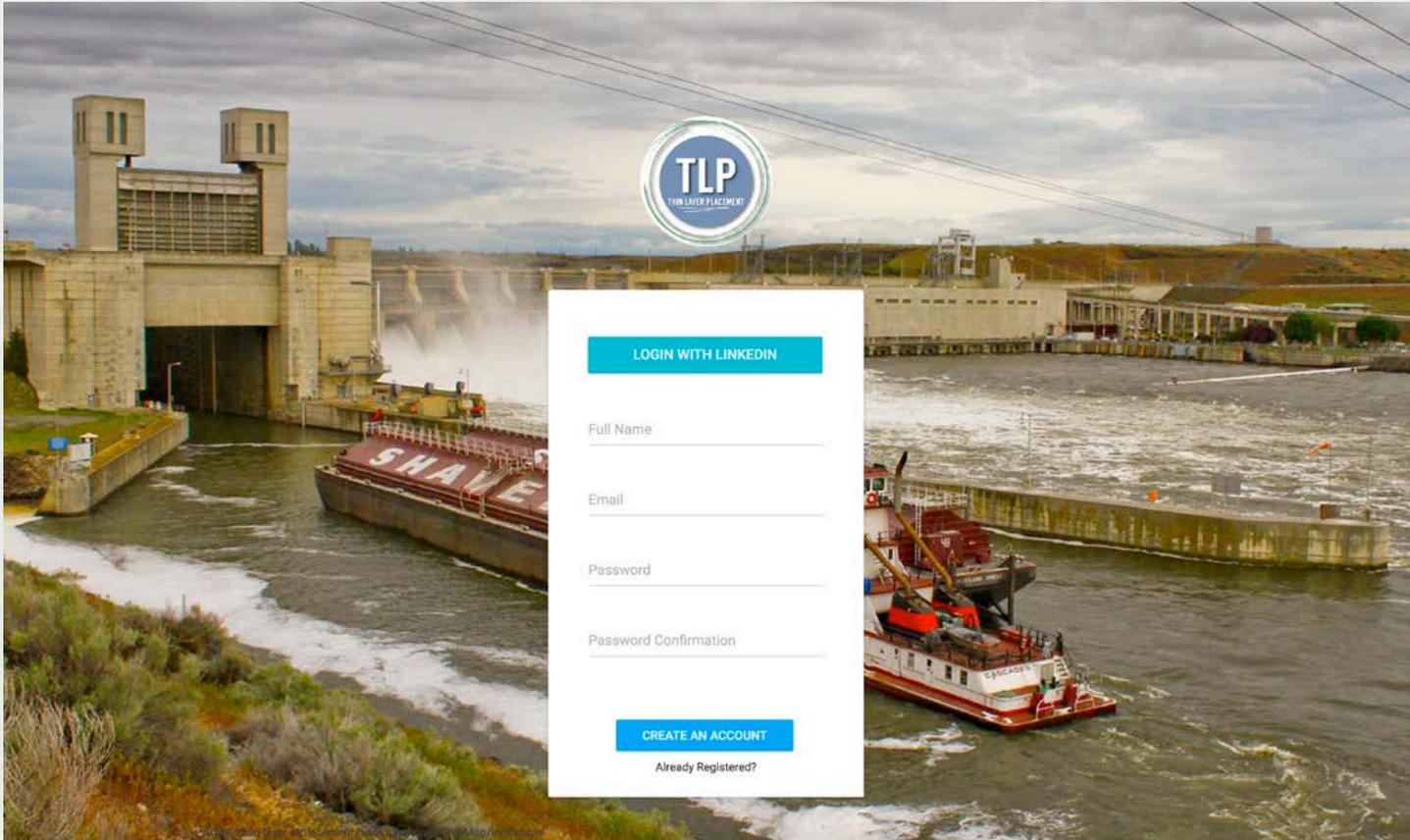
- Easily add and remove photos, video links, reports, and other documents from your case study project information area

▶ **Import/Export Data: Easily Upload & Access**

- The **Application Programming Interface (API)**: Easily share data for any TLP case study (or all) with approved web applications. Pull raw data for any case study via our online API web service



TLP Map Portal



TLP Map Portal

The screenshot displays the TLP Map Portal interface. At the top, there are navigation tabs for different project types: Sediment Remediation, Brownfields Remediation, Shoreline Stabilization, Beach Nourishment, and Dredged Material Disposal. Below these tabs are three project thumbnails: 1. Gull Rock, 2. Fowl River, and 3. Mississippi Sound. A map of the Gulf of Mexico is shown, with a pop-up window for the Mississippi Sound project. The pop-up window contains the following text:

Mississippi Sound

Mississippi Sound channel improvements required removal of 1 MCY from the channel (maintenance material) that were subsequently placed in a thin layer with thickness ≤ 12 in. in three, 300-acre disposal areas along the west side of the channel. Similarly, 1 MCY of new work material was removed and placed in a thin layer with thickness < 12 in. in three

The information panel also includes a 'General Information' section with an 'OVERVIEW' tab and a 'PROJECT AREA' section with a 'Map(Measurements)' tab. The map shows an aerial view of a coastal area with a red boundary indicating the project area.



What case study data is being captured?

Sections

- General Information
- Project Cost
- Containment Structures
- Pre-construction
- Design & Planning
- Construction
- Post-construction
- Monitoring
- Regulatory Aspects
- Lessons Learned

New! Upload projects using Excel

The screenshot displays a web form with four main sections, each with a blue dropdown menu:

- Average Sediment Properties**: Includes a text input field and a description: "Enter the average properties of the sediment here and upload data for individual data samples, composites, etc. either from your workstation or from SAGA."
- Material Type**: Includes a text input field and a description: "Enter the average properties of the sediment here and upload data for individual data samples, composites, etc. either from your workstation or from SAGA."
- Sediment Type & Composition**: Includes a text input field and a description: "Enter the average properties of the sediment here and upload data for individual data samples, composites, etc. either from your workstation or from SAGA."
- Chemistry Values**: Includes a text input field and a description: "Enter the average properties of the sediment here and upload data for individual data samples, composites, etc. either from your workstation or from SAGA."



How do I create a new case study?

Easy and User-friendly:

1. Create an Account
2. Create a New Case Study
3. Assign Contributors
4. Begin Inputting Information
5. Await Publishing Approval

PROJECT AREA

Map(Measurements)



Address Information

LONGITUDE	LATITUDE	SIZE OF AREA
-77.03652979999998	38.8976763	
COUNTRY	STATE	
COUNTY	CITY	USACE DISTRICT Alaska

SIZE OF AREA UNIT

Cubic Yards Cubic Meters Acres Hectare Square Feet Square Meters

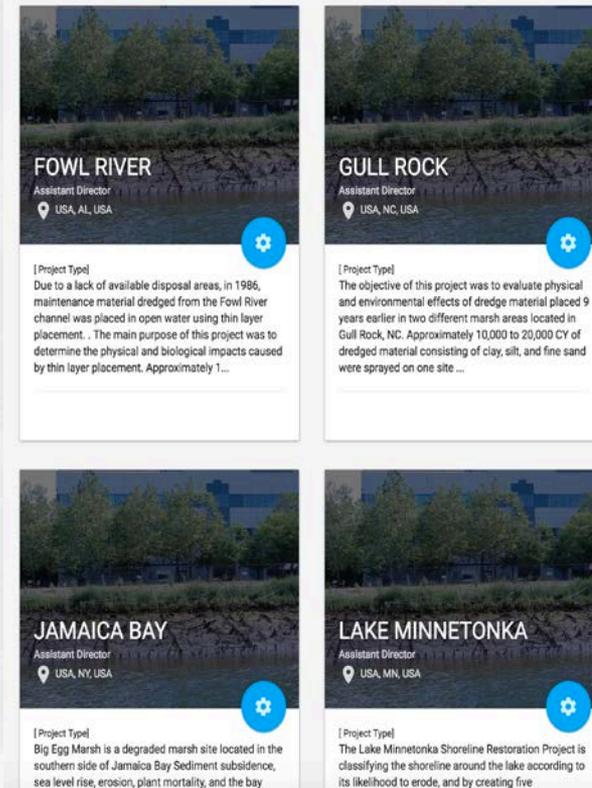
SUBMIT FORM CANCEL



What else can I do on the TLP website?

Join our Community!

1. **Improved:** Interactive Map
2. **New:** Create User Profile
3. **New:** Case Study Directory
4. **New:** Case Study Profile Page
5. **Coming:** TLP Media Library



FAQs: How do I get help if I need it?

Fast Answers!

1. Site-wide Guidance Text
2. Form Tool Tips
3. Online FAQ Section



ERDC

Future products and enhancements

- Website forum
- TLP Newsletter
- Enhanced search tool
- Enhanced case study page
- New case studies, resources, and photos will be added every quarter
- Formalized guidance for the practice of thin layer placement



ERDC

How can I contribute?

- Case studies, models, construction methods and other relevant information that may be useful to practitioners are solicited.
- Sign up on our **List Server** and **Map Portal**

<https://t1p.el.erdc.dren.mil/list-server-and-map-portal/>



Please contact us!

- **Website registration and contributions**

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Questions?



Photo from Kirk Gilligan, Seal Beach NWR Manager



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Innovative solutions for a safer, better world