Overview of Corps National Dredging Program and Regulations

Mr. Joe Wilson

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US Army Corps of Engineers

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Corps' Mission

- Establish and maintain navigation since 1824 Survey Act
- That mission requires dredging and disposal in compliance with applicable laws and regulations
- Properly manage contaminated sediments

Navigation System

- 25,000 miles navigation channels
- 11,000 miles commercially important

Quantities of Dredged Sediments

- 250 million cubic yards from 25,000 miles of navigation channels
- 75 million cubic yards from permits
- 325 million cubic yards each year

Authorizations

- Rivers and Harbors Act of 1899, and all subsequent WRDA's
- Clean Water Act
  - ►Section 404
- Marine Protection, Research, and Sanctuaries Act
  - ►Section 103

Quantities of Dredged Material Placed

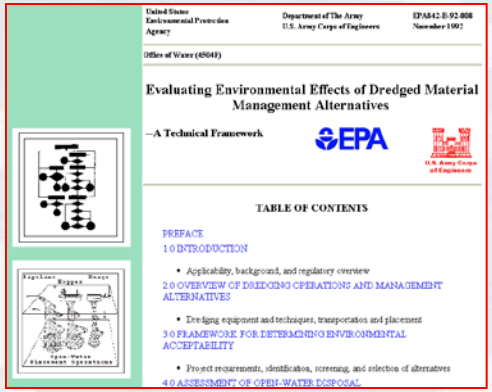
- 55 million cubic yards goes to 108 ocean sites regulated under the Marine Protection, Research, and Sanctuaries Act
- 270 million cubic yards regulated under the Clean Water Act

Quantities of Contaminated Sediments

- <u>3% to 5% or 12 to 20 million cubic yards</u> require special handling and management

Navigation Dredging

- 33 CFR 335-338 Corps Dredging Regulation
- EPA/Corps Technical Framework for DM
- Testing and Evaluation Manuals for Ocean (103) and Inland (404) Waters - National and Regional Manuals
- Ocean Site Designation Manual
- DM Capping Guidance Manual
- Upland Testing Manual



United States Environmental Protection Agency

Department of The Army U.S. Army Corps of Engineers

EPA842-B-92-008 November 1992

Office of Water (4504F)

Evaluating Environmental Effects of Dredged Material Management Alternatives

—A Technical Framework

EPA

U.S. Army Corps of Engineers

TABLE OF CONTENTS

PREFACE

1.0 INTRODUCTION

- Applicability, background, and regulatory overview

2.0 OVERVIEW OF DREDGING OPERATIONS AND MANAGEMENT ALTERNATIVES

- Dredging equipment and techniques, transportation and placement

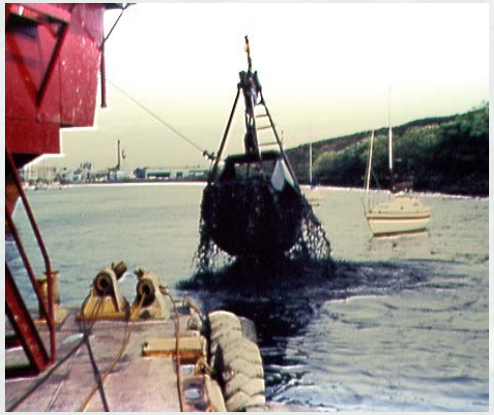
3.0 FRAMEWORK FOR DETERMINING ENVIRONMENTAL ACCEPTABILITY

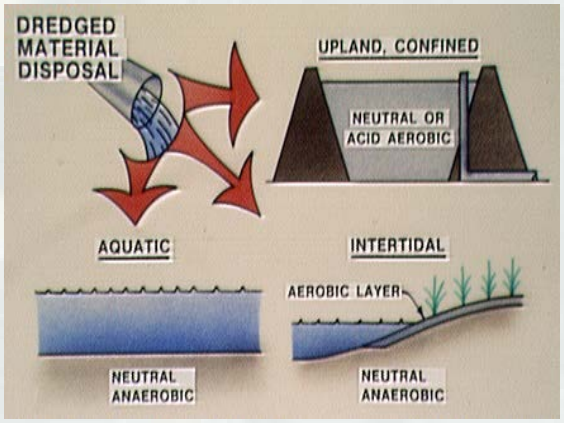
- Project requirements, identification, screening, and selection of alternatives

4.0 ASSESSMENT OF OPEN-WATER DISPOSAL

National and International Leadership

London Dumping Convention





CORPS/EPA Disposal Guidelines & Criteria

Questions?

2012 NWP Dredging Summary

Portland District

Elizabeth Smock, Team Lead, Dredging Contracts

Dredging and Resource Agency
Coordination Meeting

US Army Corps of Engineers
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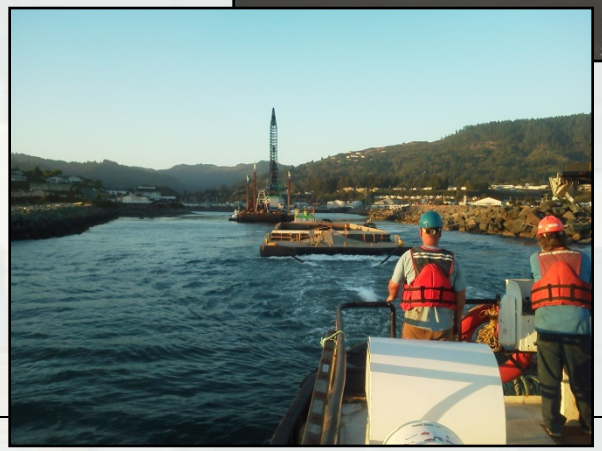
Dredging Contracts Completed in FY 2012

- Baker Bay Maintenance Dredging 2012
- North Coast Hopper Maintenance Dredging 2012
- Chetco Mechanical Dredging 2012
- Dredge Oregon Rental



Small Business Set Aside

- Baker Bay Maintenance Dredging 2012
  - Acquisition plan involved an unusual and compelling justification
  - Funded from 1% HQ Emergency Hold-back funds
  - 98,558 CY completed in 22 days

Hopper Maintenance Dredging 2012

- MCR Dredging

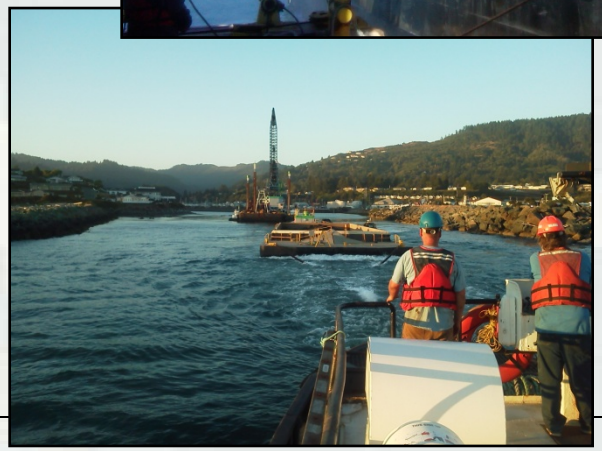
  Total dredged 2,164,346 CY

  - DWS 309,393 CY
  - SWS 1,561,411 CY
  - NJS 293,542 CY

- CLW Dredging
  - IW ~1.7 MCY

Chetco Mechanical Dredging 2012

- Chetco Mechanical Dredging 2012
  - Dredged 25,475 CY in 7 days in August
  - Disaster Relief Funds



Dredge Oregon FY 2012 Season

- 231 Days
- 10 Reaches (Miller Sands to St. Helens)
- 3,377,849 CY Moved
  - IW: 48%
  - UD: 27%
  - BN: 25%

Dredge Yaquina FY 2012

- In District Work (October 2011– September 2012)

Coastal Projects

- Yaquina Bay 293,007 CY
- Siuslaw River 76,035 CY
- Umpqua River 114,611 CY
- Coos Bay 146,577 CY
- Coquille 15,436 CY
- Rogue River 48,878 CY
- Chetco River 4,893 CY

Columbia River 242,555 CY

- Baker Bay 25,017 CY

Vancouver to The Dalles 132,231 CY

Dredge Essayons

Dredge Essayons

One of these things is not like the other

Dredge Essayons FY 2012

In District Work (October 2011 – September 2012)

Mouth of the Columbia River

- DWS 541,514 CY
- SWS 459,595 CY
- SJS 49,652 CY

Columbia River

- IW 2,716,347 CY

Coos Bay Entrance

- F-OS 74,777 CY
- F-NS 457,607 CY

Comments? Questions?

Upcoming 2013 Work
Portland District

Courtney Jones, Dredging Contracts

Kate Groth, PM, Coastal Projects

Jarod Norton, PM, Mouth of the Columbia River

Jessica Stokke, PM, Columbia & Lower Willamette Rivers

Dredging and Resource Agency
Coordination Meeting

Bonneville Power Administration
Thursday March 14, 2013

US Army Corps of Engineers
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Upcoming Contracts FY13

- West Coast Regional Hopper
  - MCR, Columbia River (and San Francisco)
  - Expected Award March 29, 2013
- Dredge Oregon Rental
  - Columbia River
  - Second year of (5) years
  - Port of Portland

Dredge Essayons FY13

Projects, Days (October 2012 – September 2013)

Columbia River
(58 complete, 5.5 Mar-Sept)

Mouth of the Columbia River
(54.5 days, June-Sept 2013)

Coos Bay Entrance
(17 days, August 2013)

Dredge Yaquina FY13

- Projects, Days (October 2012 – September 2013)

Coastal Projects

- Yaquina Bay (10 days Oct; 5 days April, 13 days July-Aug)
- Coos Bay (5 days May/June, 23 days, June-Sept)

Columbia River (10 complete, 11 mostly Sept)

Vancouver to the Dalles (7.5 Sept)

Environmental Coordination

- Coastal Environmental Assessments
  - Updates Completed July 2013
  - Submit WQC application to DEQ July 2013
  - WQC/ CZMA expected July 2014
- Columbia River
  - WQC from DEQ expected 2013

Comments? Questions?

SEDIMENT QUALITY Annual Summary

Portland District Annual Dredging and Resource Agency Coordination Meeting

Portland, Oregon

March 14, 2013

US Army Corps of Engineers
BUILDING STRONG®

Presentation Topics

- District Sediment Quality Roles & Staff
- District Sediment Quality Sampling
  - FY12 Sampling
  - FY13 Planned Sampling
- Ocean Dredged Material Disposal
  - FY12 Activities
  - FY13 Planned Activities
- Portland Sediment Evaluation Team (FY13 Reviews)
- Regional Sediment Evaluation Team

Sediment Quality Functions

- 1° Mission: Ensure District dredged material placement & disposal complies with:
  - §404 Clean Water Act
  - §102 Marine Protection, Research and Sanctuaries Act (Ocean Dumping Act)
- Evaluate sediment quality at District Civil Works projects

Sediment Quality Roles

- Ocean Dumping Coordinator
- Sediment Quality Specialists
- Data Quality Specialist
- Portland Sediment Evaluation Team Lead
- Regional Sediment Evaluation Team Liaison

Staffing: 2 full-time; 2 part-time

FY12 Sediment Sampling

- Navigation
  - Rogue River
- Willamette Valley
  - Cougar Reservoir
  - Fall Creek Reservoir
  - Cottage Grove Reservoir
- Ecosystem Restoration
  - Dairy Creek-Sturgeon Lake (Sauvie Island)

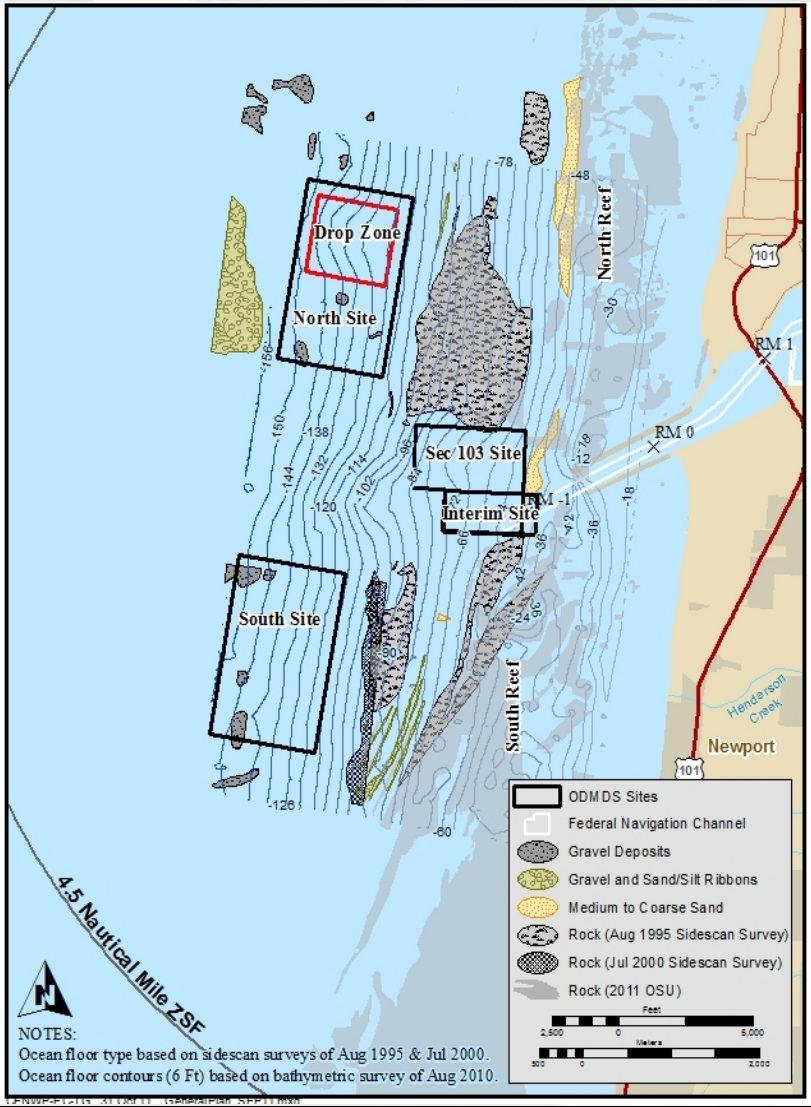
FY13 Planned Sampling

- Navigation
  - Wahkiakum Ferry
- Willamette Valley
  - Detroit Reservoir
  - Green Peter Reservoir
  - Foster Reservoir
- Interagency Agreement: USCG – Portland Marine Safety Unit Dredging
- Eco Restoration – Steamboat Slough (JBH NWR)

FY12 Ocean Disposal (Yaquina)

Yaquina Ocean Disposal Sites:
MPRSA §102 Designation
Assisted EPA with:

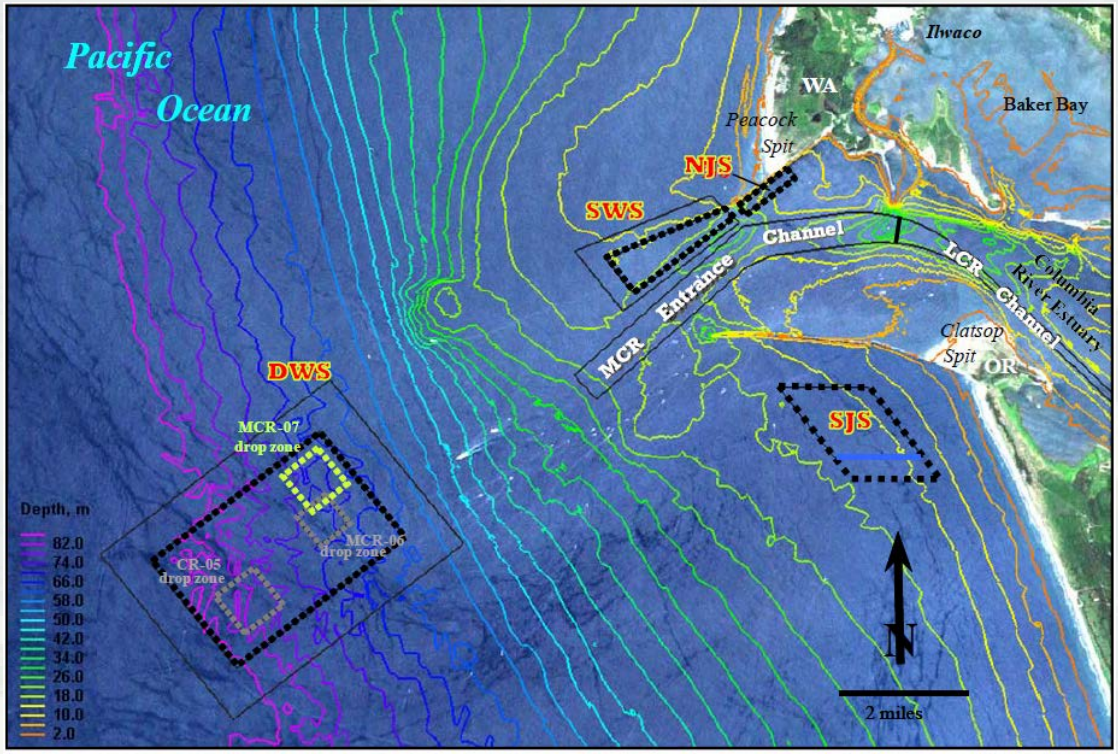
- NEPA & ESA documentation
- Agency correspondence
- Designation document prep.



FY12 Ocean Disposal/Placement (MCR)

MCR Ocean Disposal and Placement Sites:

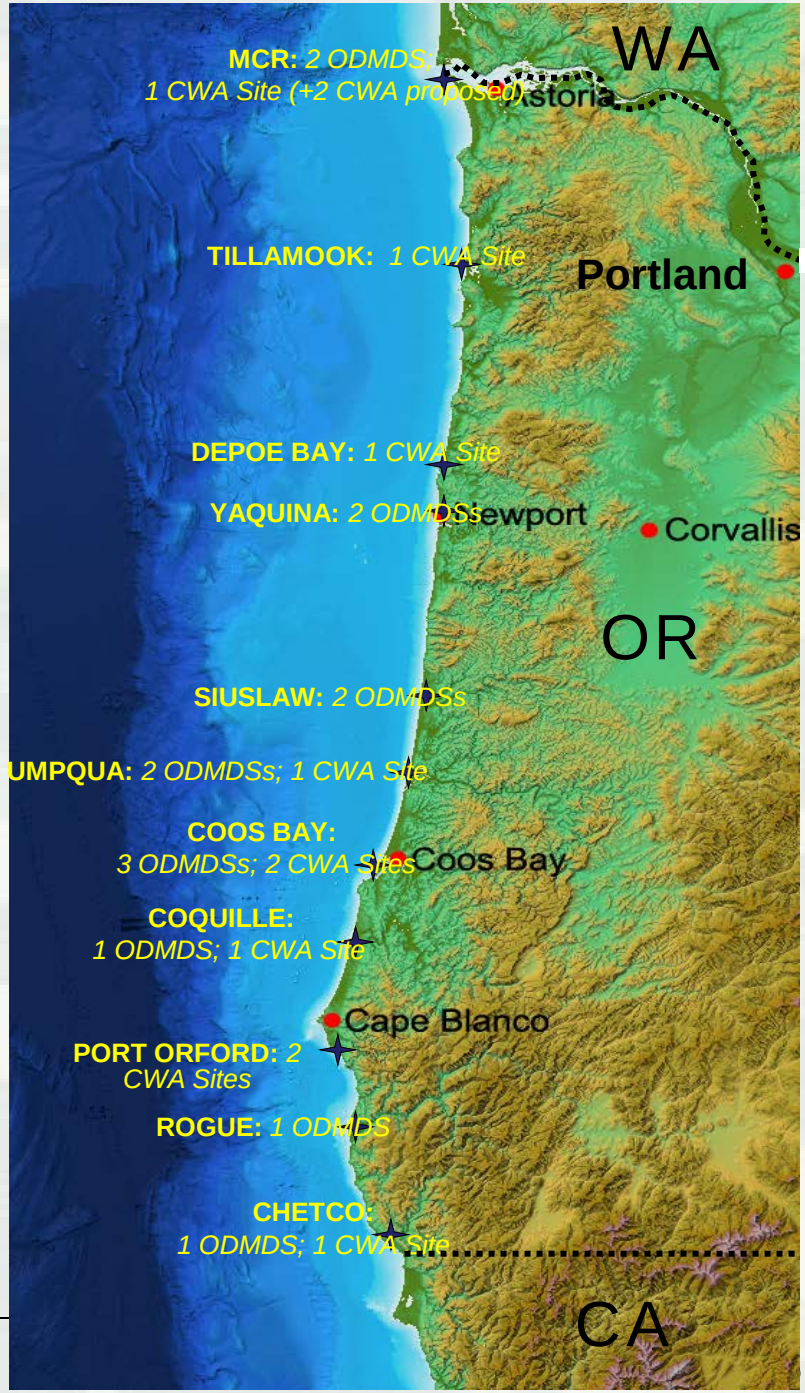
- Annual Use Plan
- EPA Coordination
- NEPA review for CWA §404 placement sites



DWS: Deep Water Site, 102 MPRSA SWS: Shallow Water Site, 102 MPRSA NJS: North Jetty Site, 404 CWA
SJS: South Jetty Site, 404 CWA

FY13 Planned ODMDS Work

- Coos Bay Site F – Major Monitoring
- EPA Interagency Agreement – ODMDS monitoring at:
  - MCR (Deep Water Site)
  - Coos Bay (Sites F & H)
  - Coquille
  - Chetco
- 2013 MCR Annual Use Plan



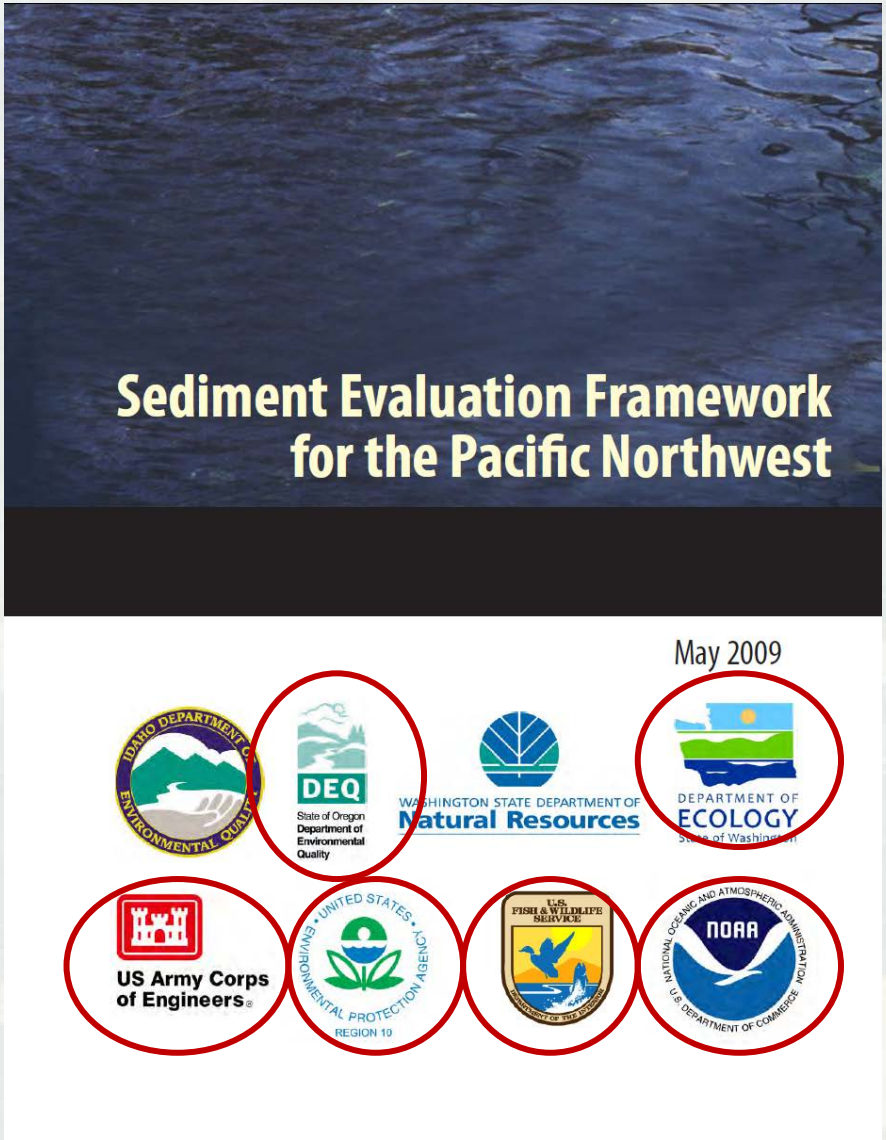
Portland Sediment Evaluation Team

What:

- Use the 2009 *Sediment Evaluation Framework for the Pacific Northwest* to evaluate dredging projects
- PSET evaluates the suitability of dredged material for unconfined, aquatic placement

Why:

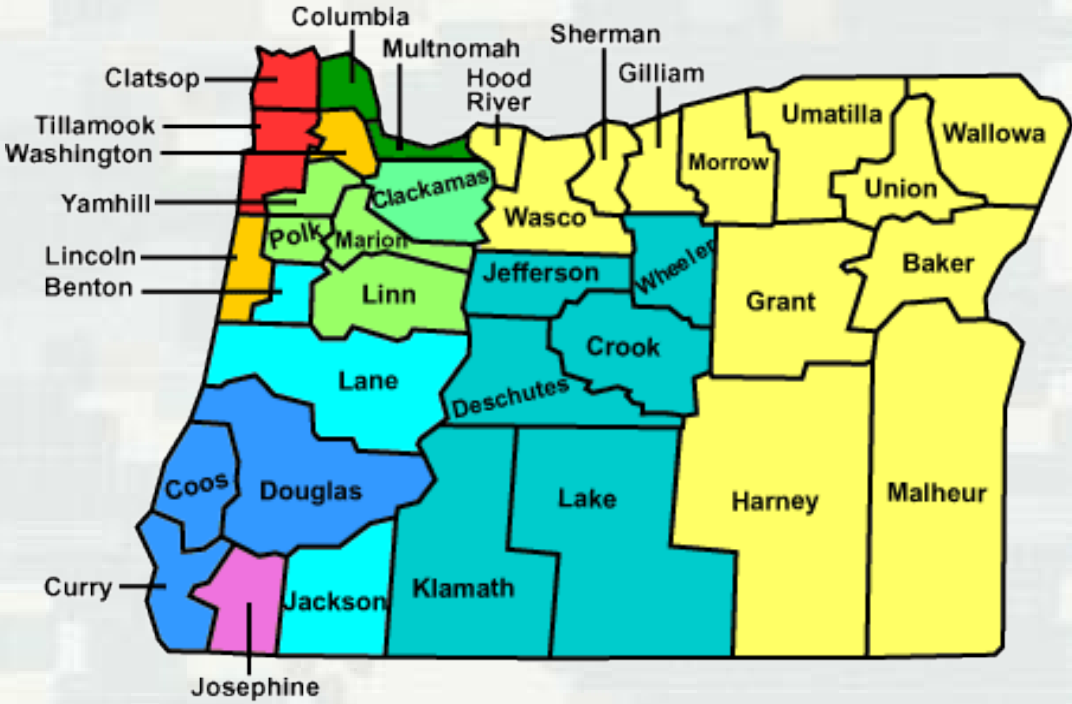
- 1° purpose: CWA & MPRSA dredged material suitability determinations
- 2° purpose: ESA and CWA 401 review



PSET Review Area

District Civil Works Boundary

District Regulatory Program Boundary



PSET FY13 Project Reviews

Corps Civil Works Projects (3):

- Federal Navigation Channels (2): Rogue* and Umpqua Projects (Sed Qual Evals.)
- Planning Study (1): MCR South Jetty foredune stabilization (no-test)

Regulatory Projects – No-test Determinations (10):

- Navigation (4): Port of Port Orford; OSU-Hatfield Dock; Port of Longview (vol. increase); Port of Vancouver (NuStar Cleanup)
- Habitat Restoration (2): Stearns Dam Removal; City of Eugene
- Other (4): Thompson's Mill State Heritage Site; Hewlett-Packard; Curry Co. Road Dept.; Cascade-Pacific

* - part of the project unsuitable w/o biological testing

PSET FY13 Project Reviews (cont.)

Regulatory Projects – SAP Review (3):

- Navigation (2): Port of Portland Terminal-wide SAP (peer review only); Port of Vancouver (Grain Terminal + Berths 1-14)
- Habitat Restoration (1): Calapooia Watershed Council

Regulatory Projects – Dredged Material Evaluations (3):

- Navigation (2): **Port of Portland (T4)*; Shore Terminals LLC ***
- Habitat Restoration (1): **Calapooia Watershed Council***

Regulatory Projects – Special Evaluations (1):

- Navigation (1): Vigor Industrial (dredging work plan; post-dredge surface eval.)

*** - material not suitable w/o biological testing**

Planning a Dredging Project?

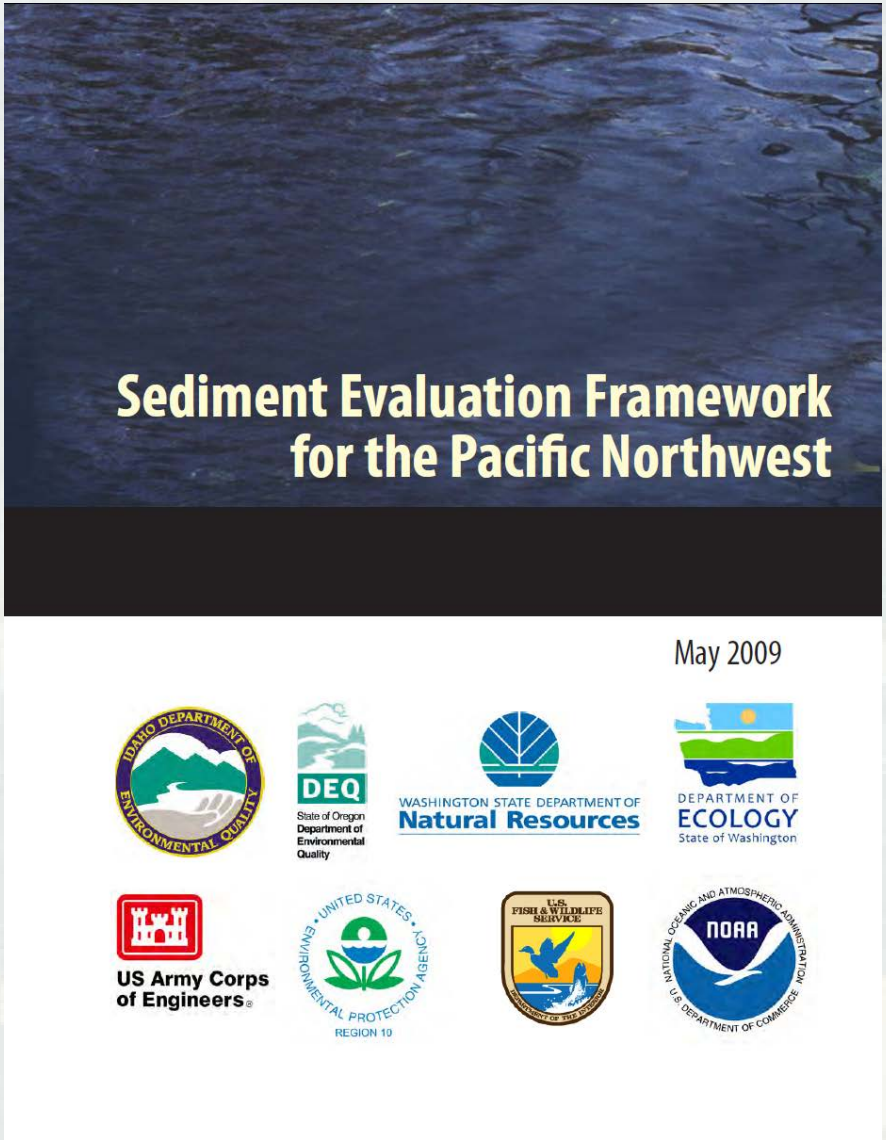
- Pre-application encouraged – contact us early:
  - James McMillan, PSET Lead
  - 503.808.4376
  - james.m.mcmillan@usace.army.mil
- We can help you plan your sampling event; we meet weekly (Wed.)
- Sampling and analysis plan guidance available at our website

http://www.nwp.usace.army.mil/Missions/Environment/DredgedMaterialManagement.aspx

Regional Sediment Evaluation Team

SEF Updates:

- Regional QA/QC Guidance (SEF CH 11)
- Freshwater Sediment Quality Guidelines (SEF CH 6)
  - WA revised their freshwater standards (as of Feb-2013)
  - RSET considering adoption of WA standards as sed. qual. guidelines
- RSET Clarification Paper



QUESTIONS?

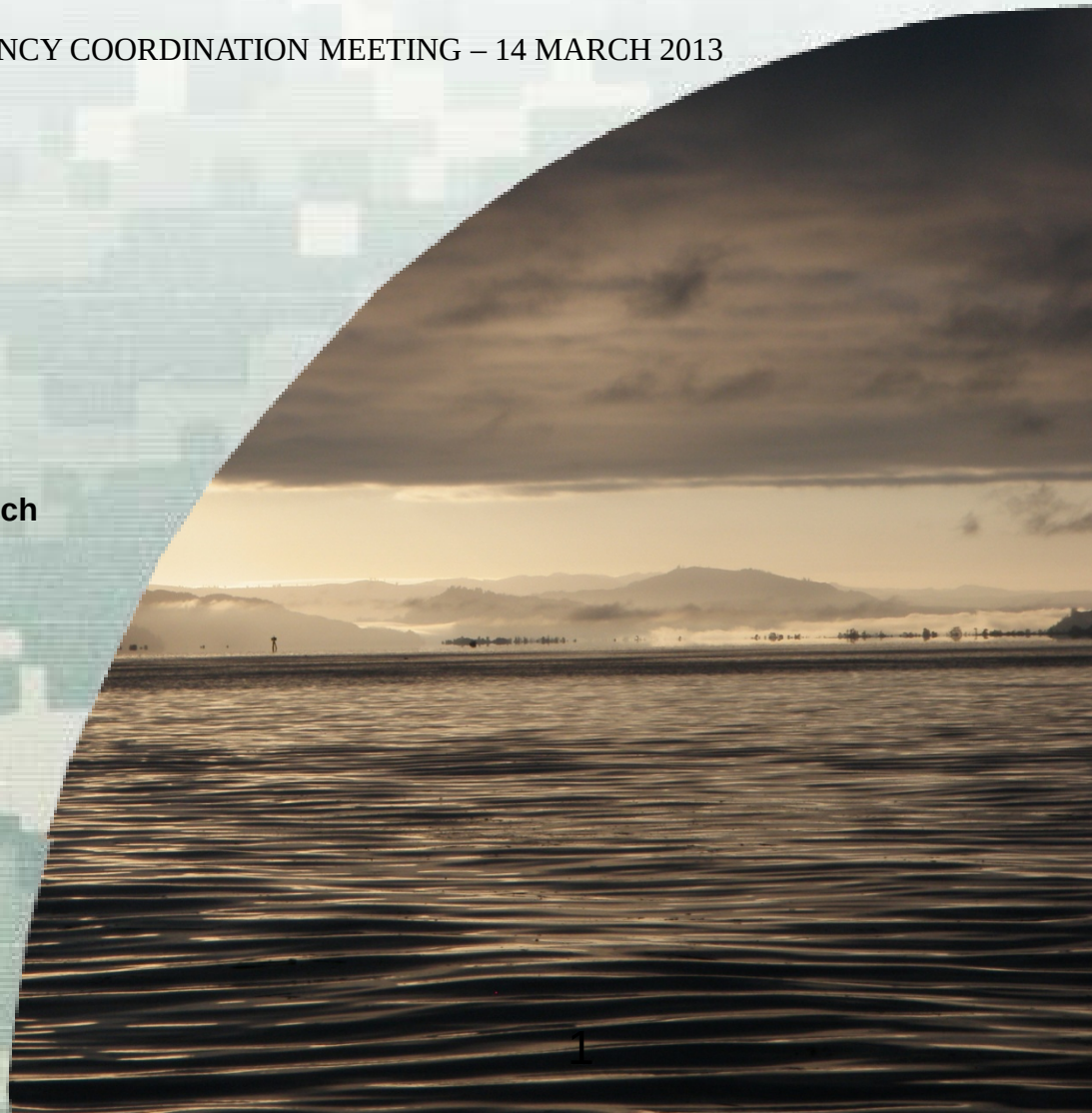
CONTACT US:

Sediment Evaluation: James McMillan, tel: 503.808.4376; email: james.m.mcmillan@usace.army.mil
Ocean Disposal: Wendy Briner, tel: 503.808.4975; email: wendy.k.briner@usace.army.mil

River & Coastal Navigation – New Analyses and Tools for Working with Nature

ANNUAL DREDGING AND RESOURCE AGENCY COORDINATION MEETING – 14 MARCH 2013

Presented by: Rod Moritz, PE
Hydraulics & Hydrology Branch
Portland District



US Army Corps of Engineers
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Outline

AdH Hydraulic Model & Particle Tracking Model- Application within the LCR

* Progress on Improve Dredged Material Management – Westport BAR

Verifying Sediment Deposition on the Seabed during Placement of Dredged Material at Nearshore Sites - Regional Sediment Management

*Comparison of Observations to Model Results – MCR SJS

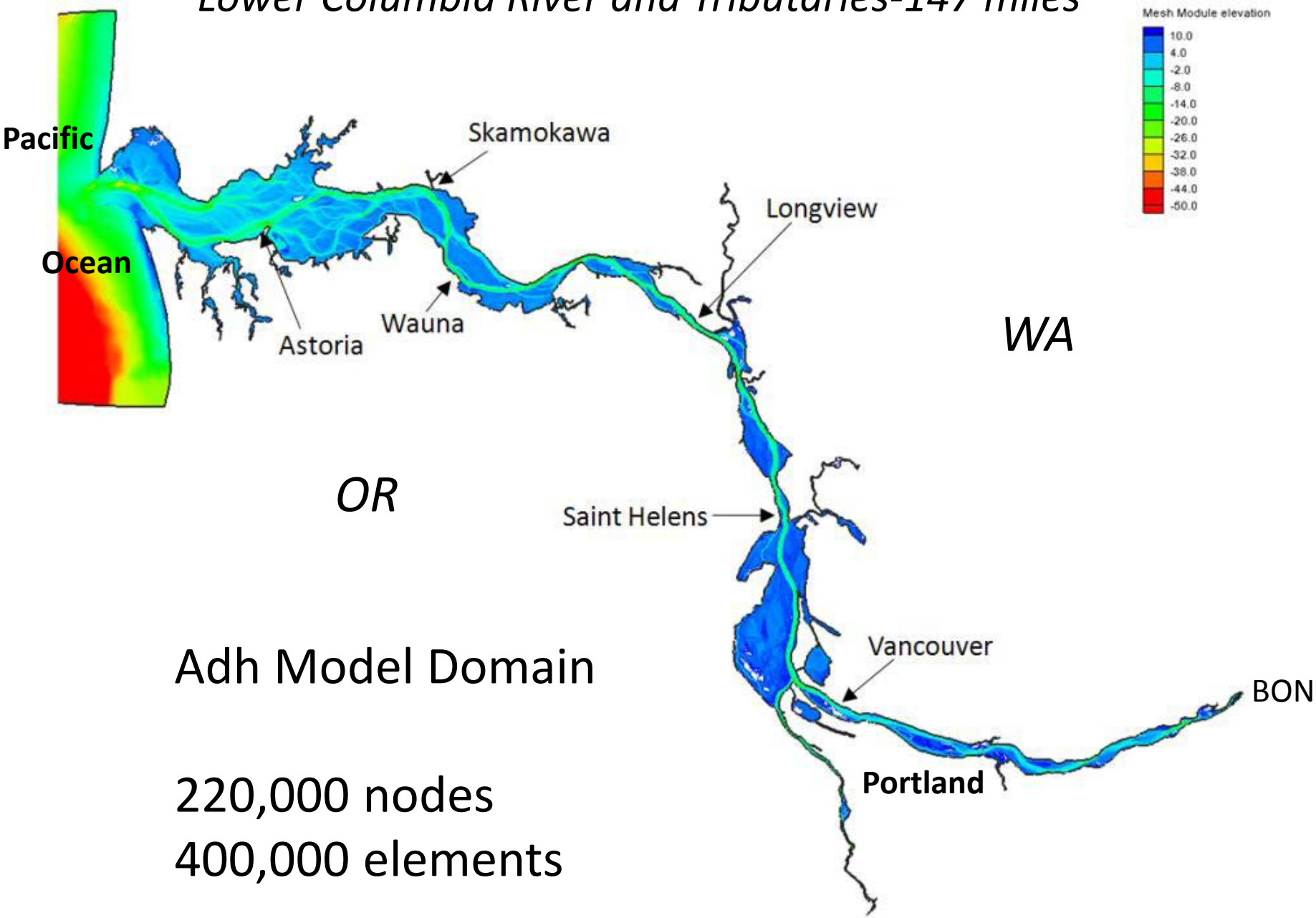
AdH Hydraulic Model
- Application within the Lower Columbia River (LCR)

* Investigate Shoaling at Westport Bar (2012)

* Evaluate Fate of Dredged Material Placed at
  Eureka Bar (2009-2011) and Skamokawa (2012)

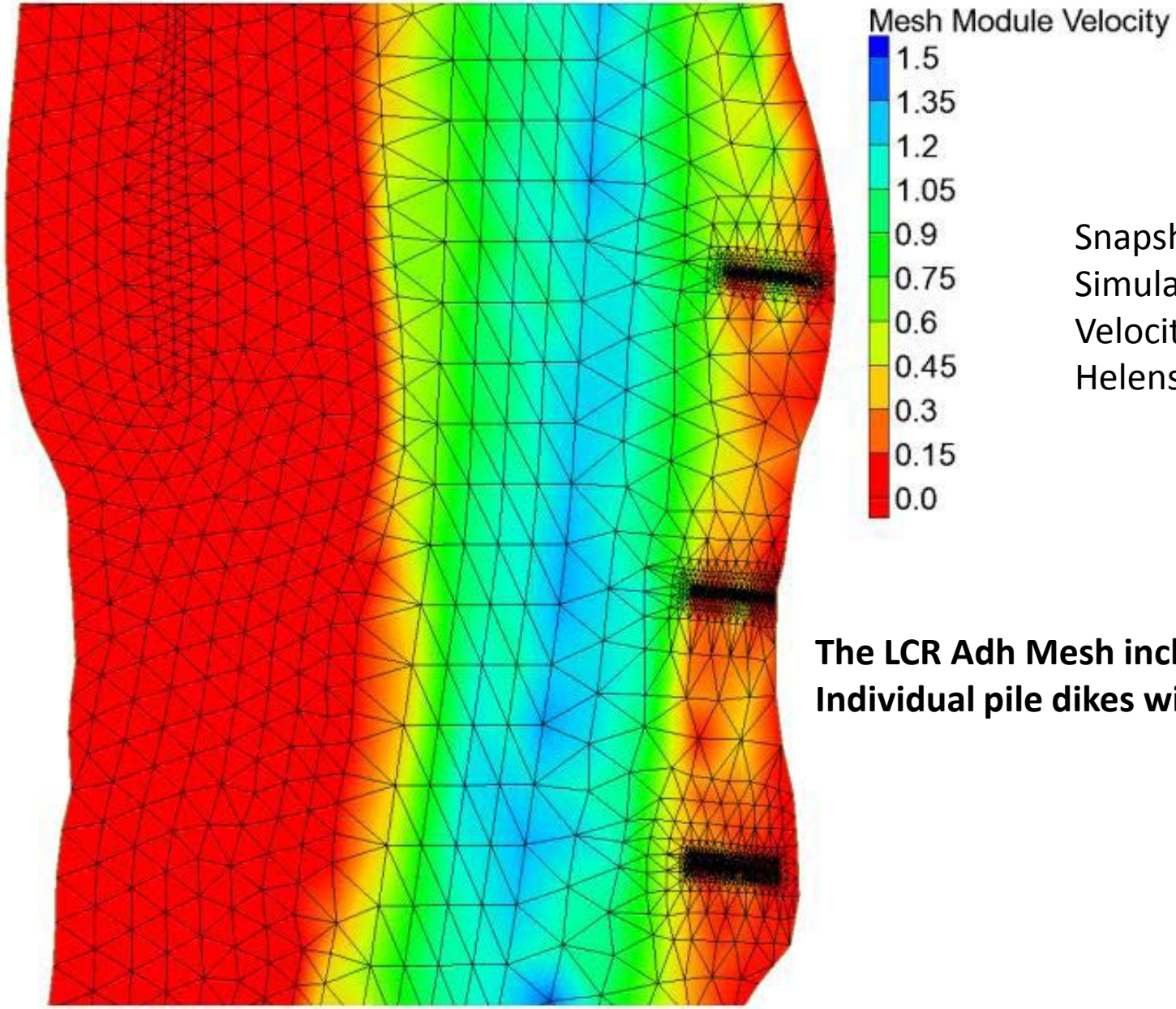
* Improve Dredged Material Management

Lower Columbia River and Tributaries-147 miles



Adh Model Domain

220,000 nodes
400,000 elements



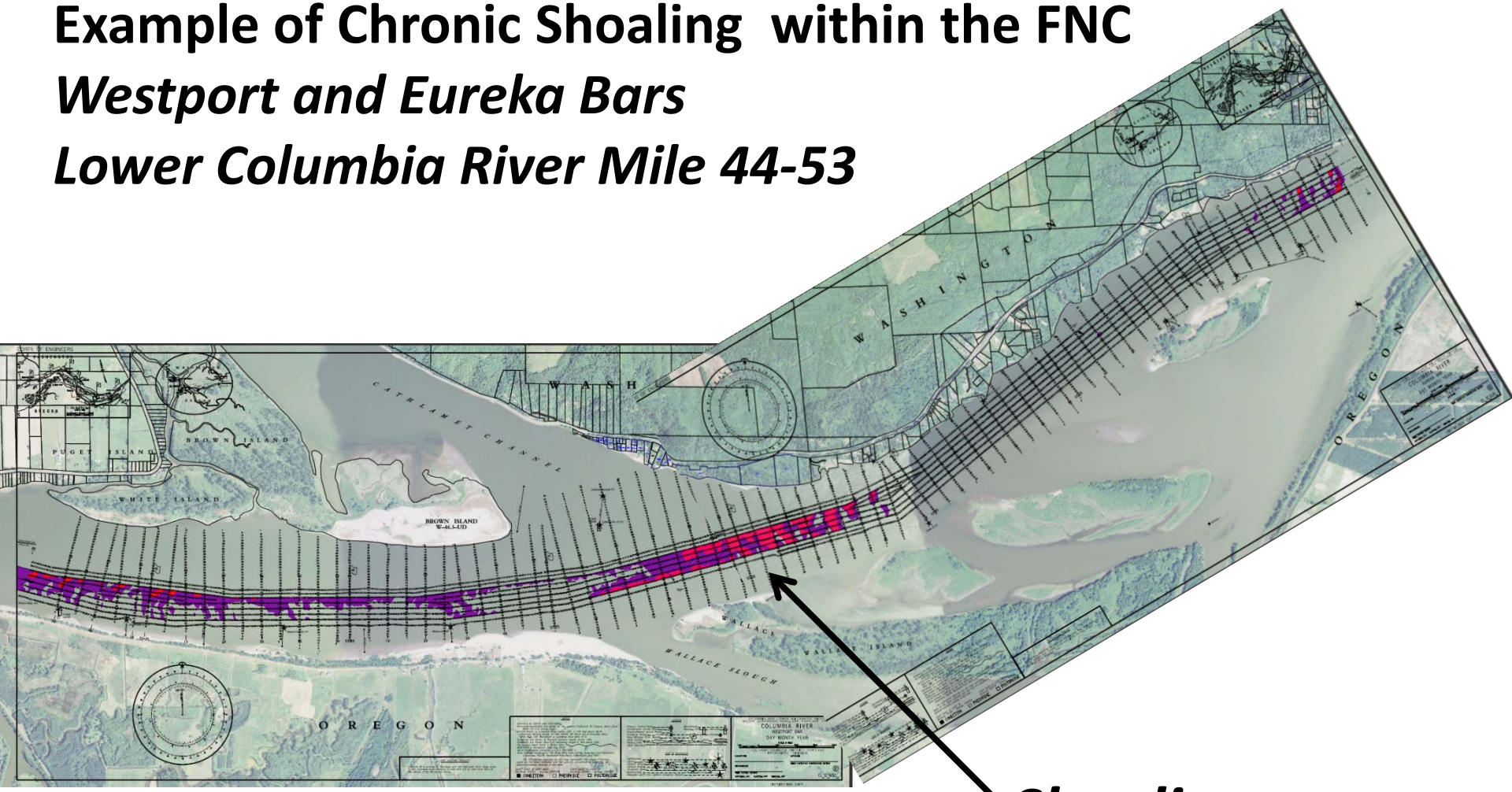
Snapshot of AdH Simulated River Velocity near Saint Helens

The LCR Adh Mesh includes Individual pile dikes within the model

Example of Chronic Shoaling within the FNC

Westport and Eureka Bars

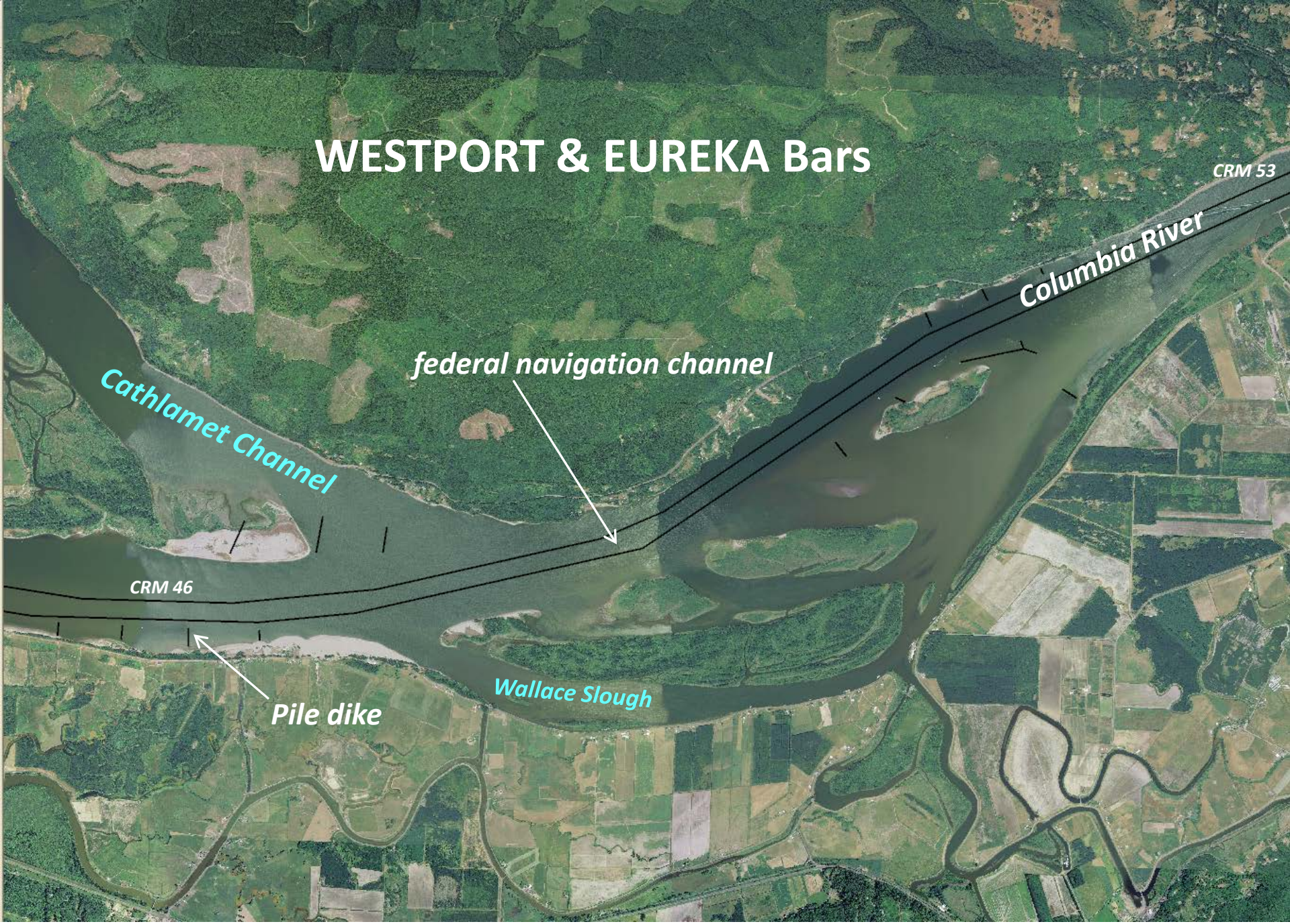
Lower Columbia River Mile 44-53



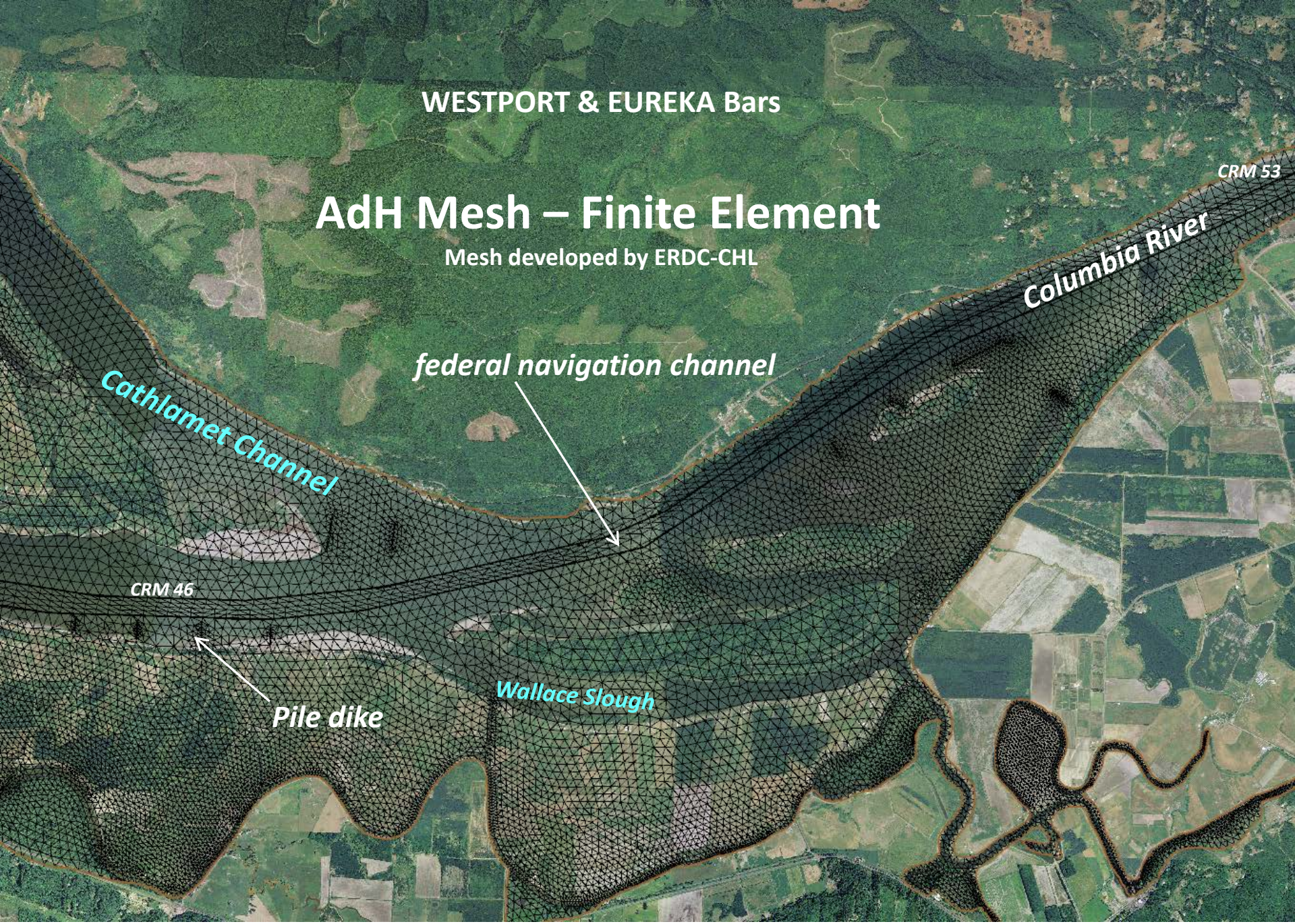
Shoaling

Purple =>-46 ft CRD

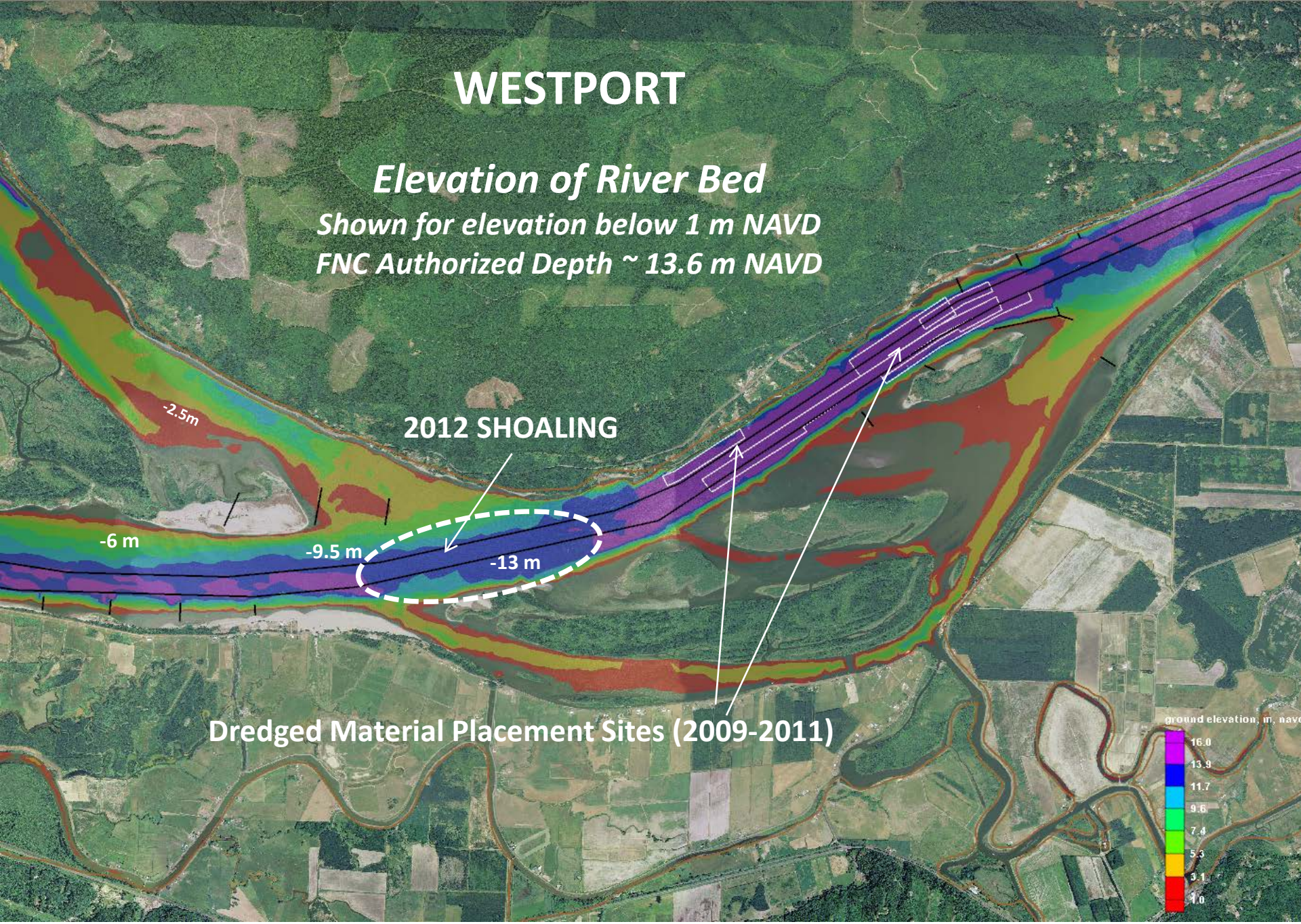
Red = > -43 ft CRD



ADH & PTM Modeling



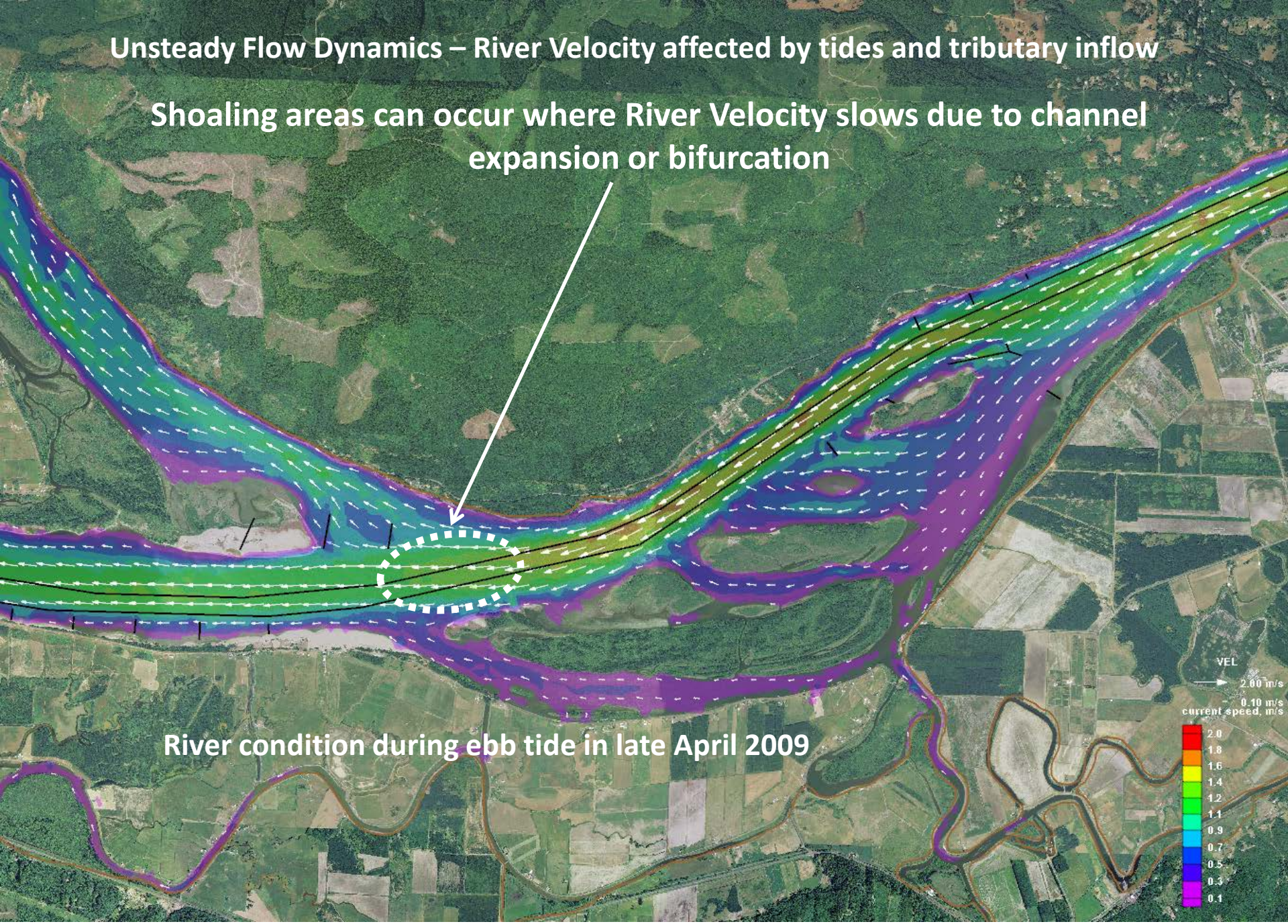
ADH & PTM Modeling



ADH & PTM Modeling

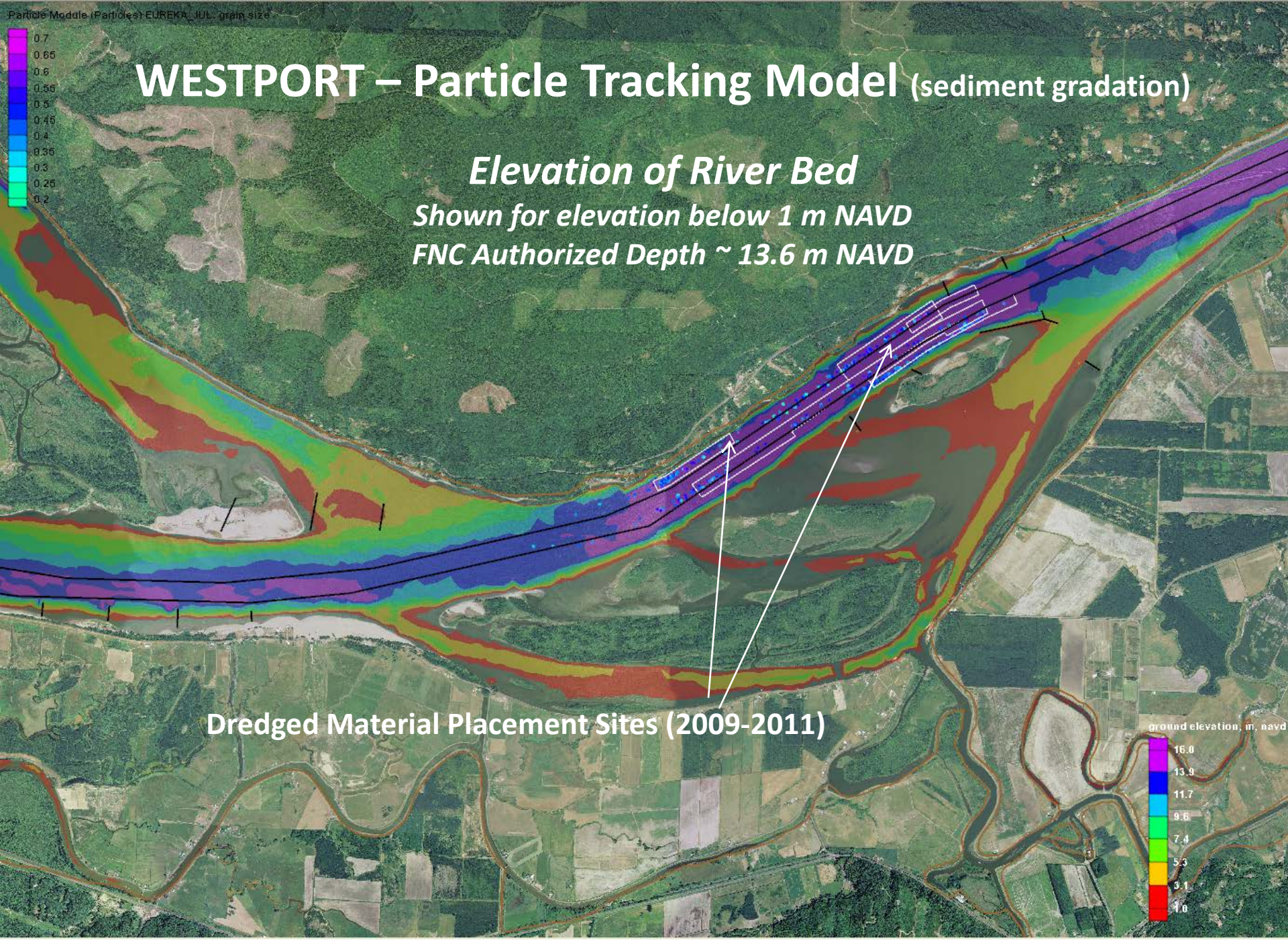
Unsteady Flow Dynamics – River Velocity affected by tides and tributary inflow

Shoaling areas can occur where River Velocity slows due to channel expansion or bifurcation



River condition during ebb tide in late April 2009

WESTPORT – Particle Tracking Model (sediment gradation)



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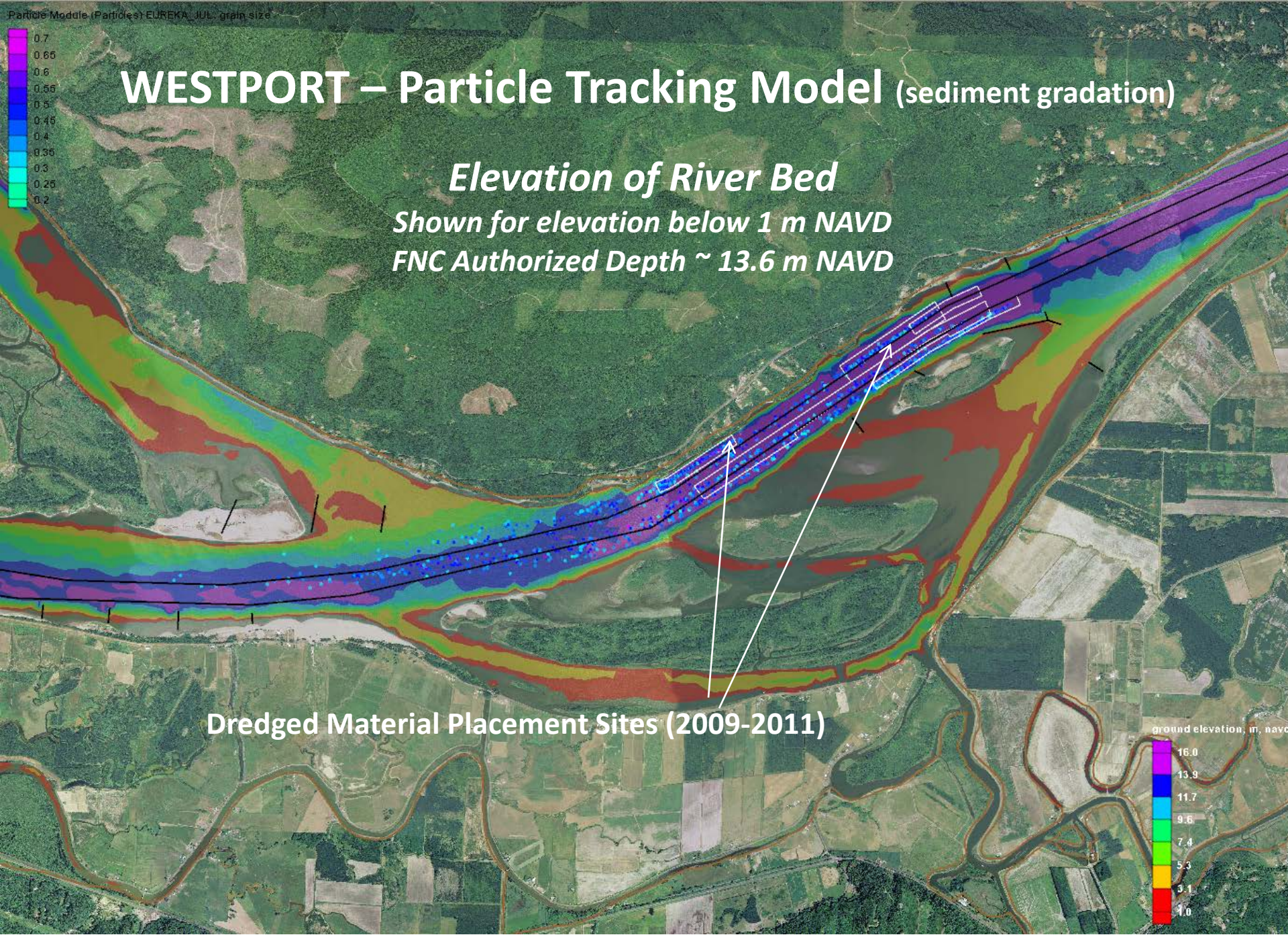

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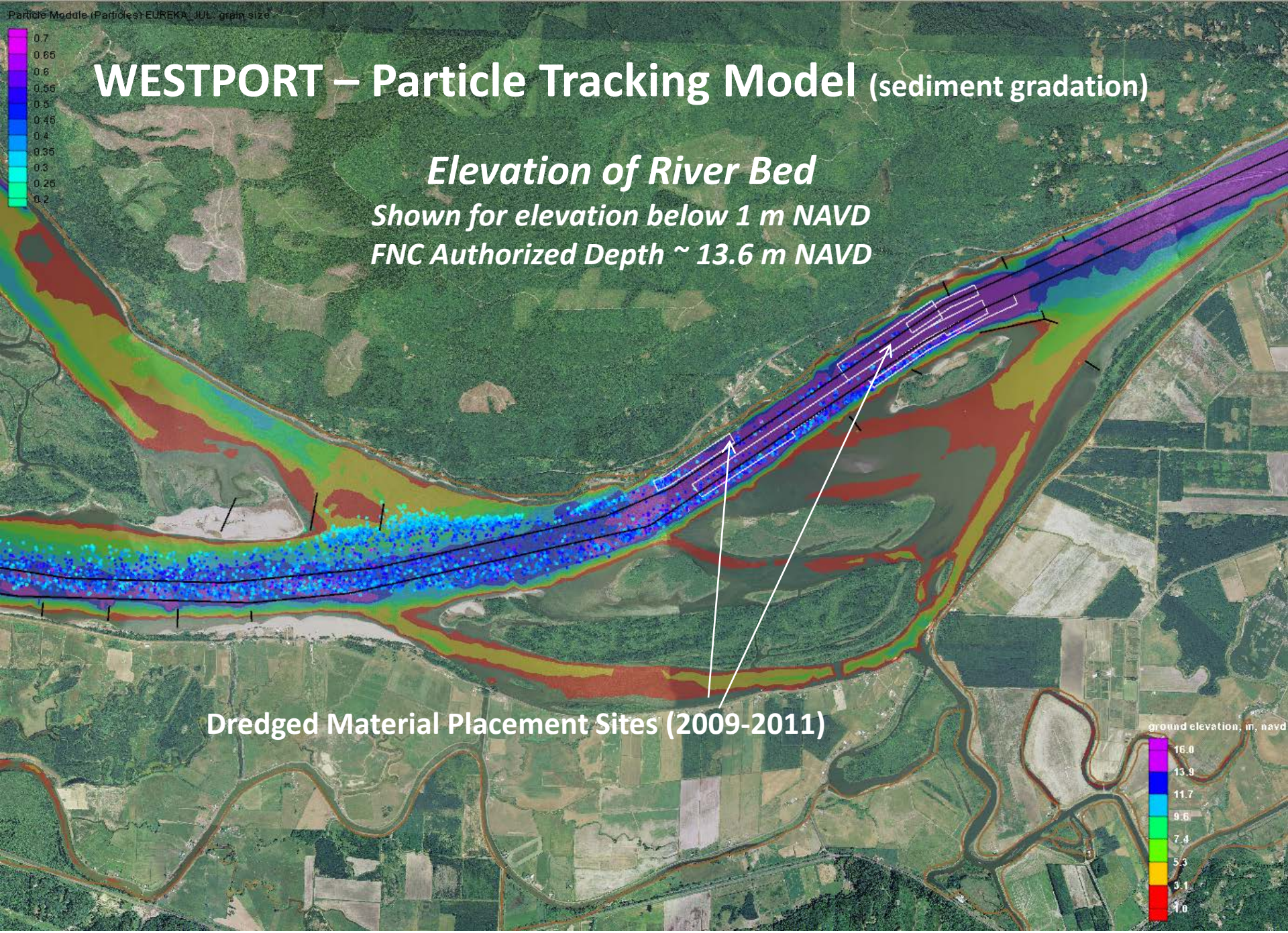

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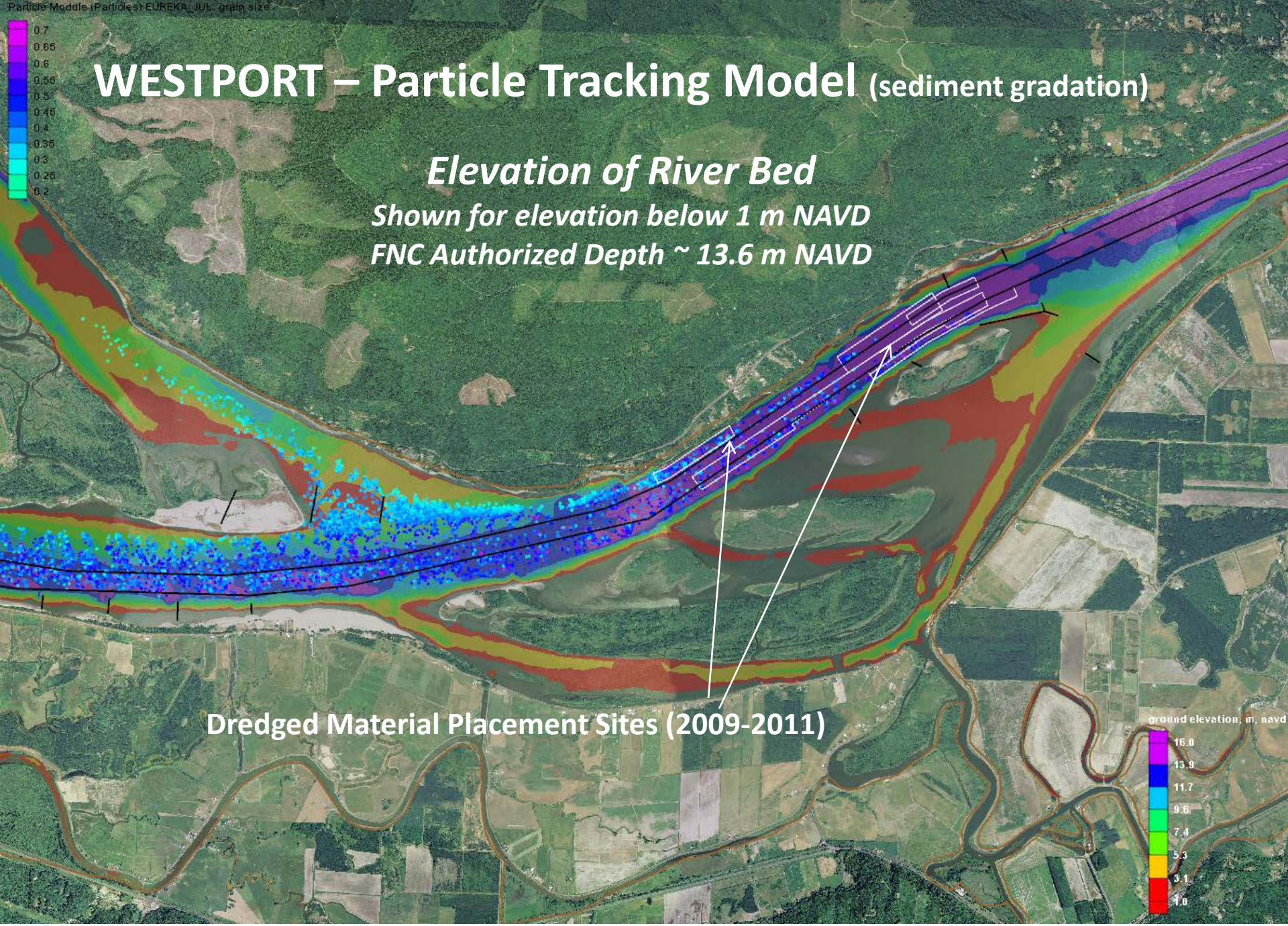

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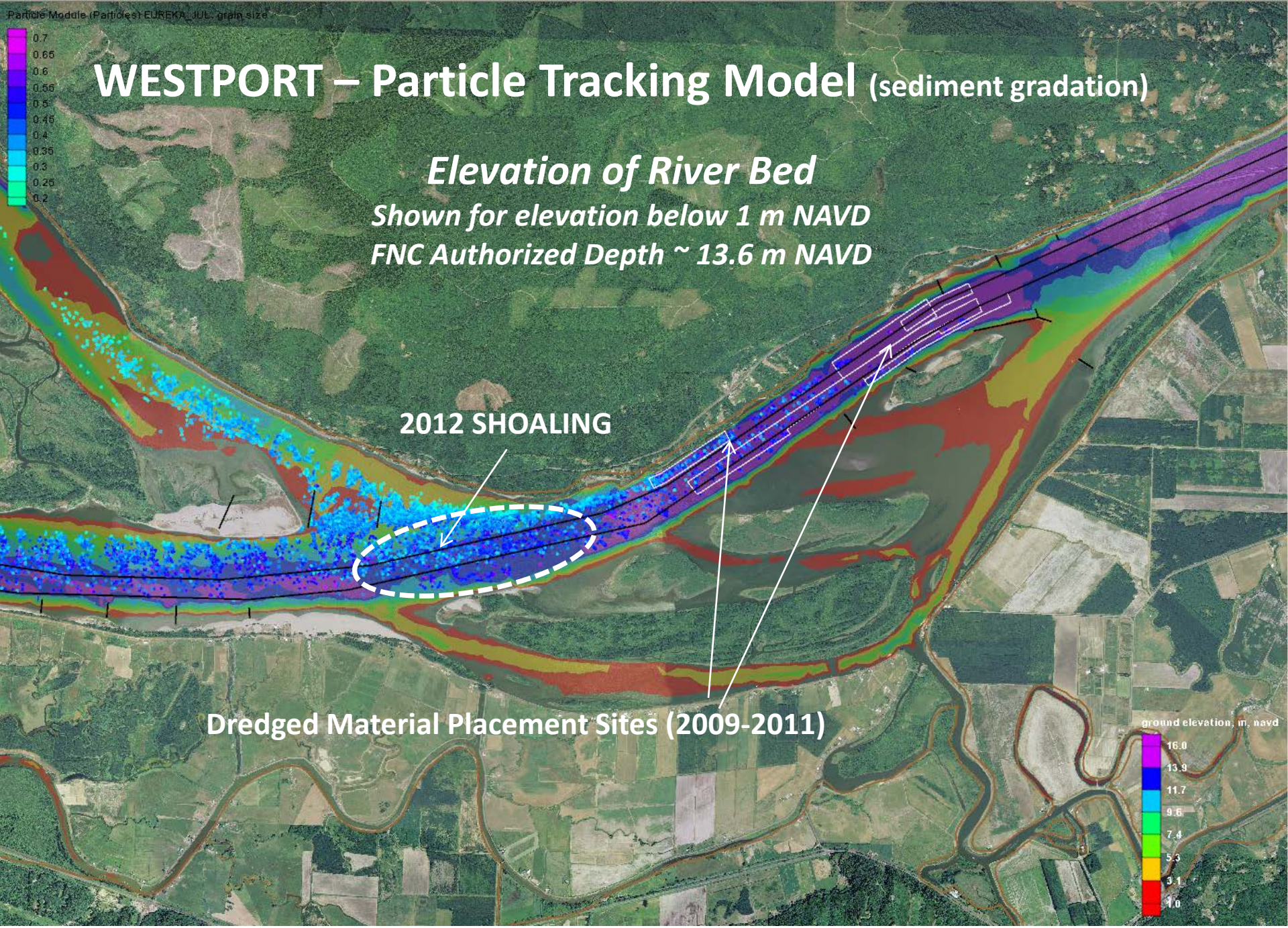
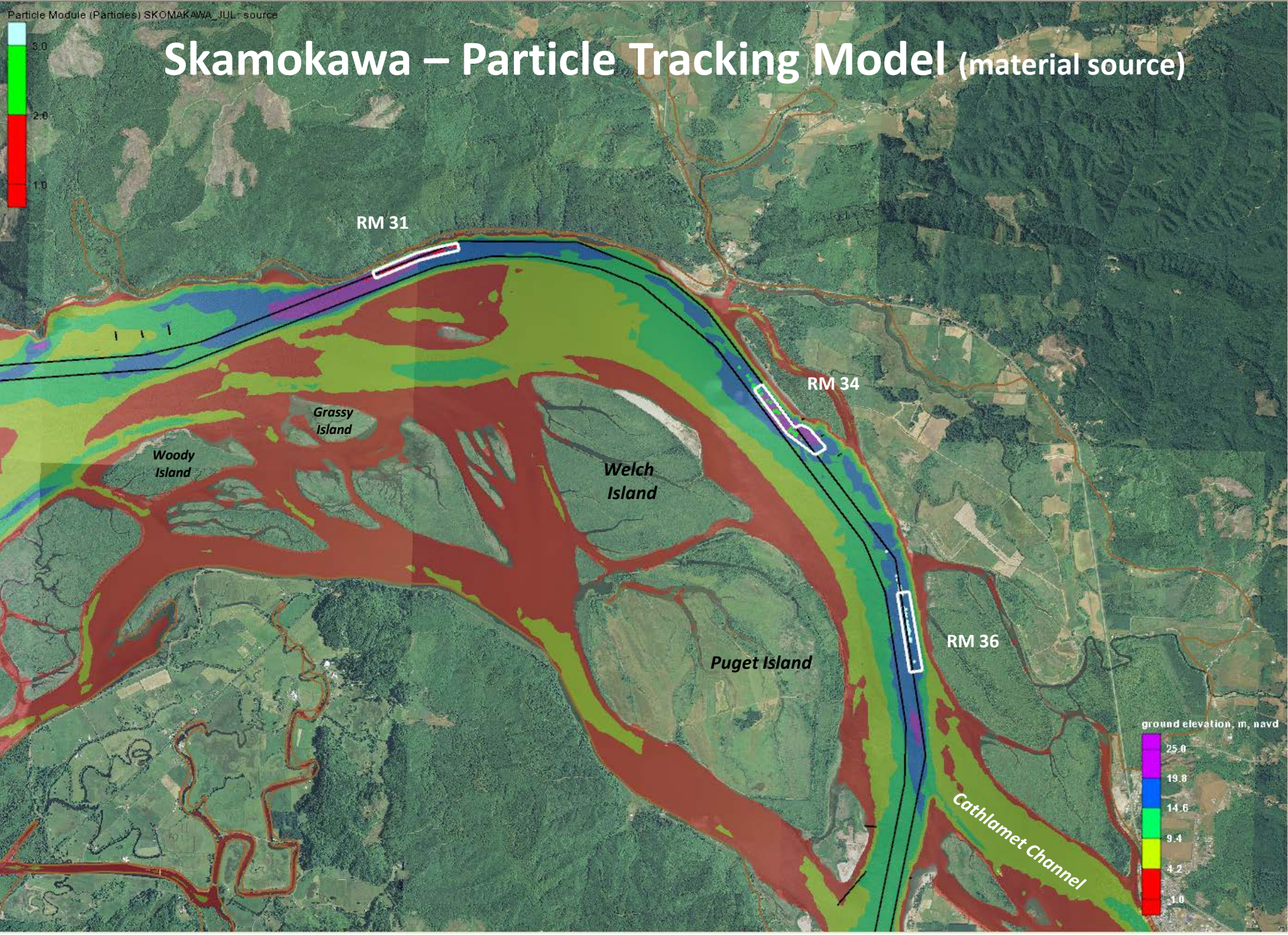


Skamokawa – Particle Tracking Model (material source)



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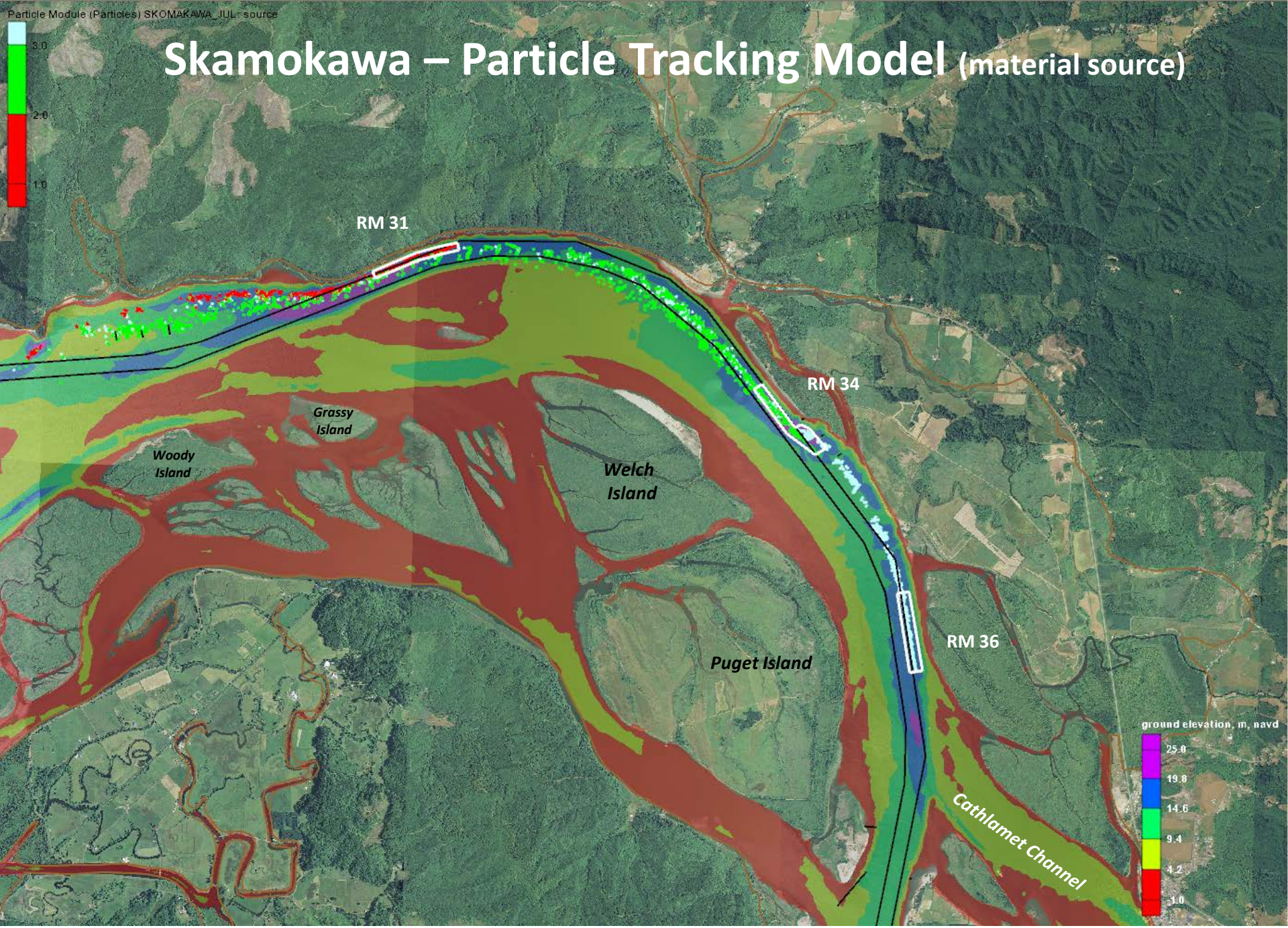
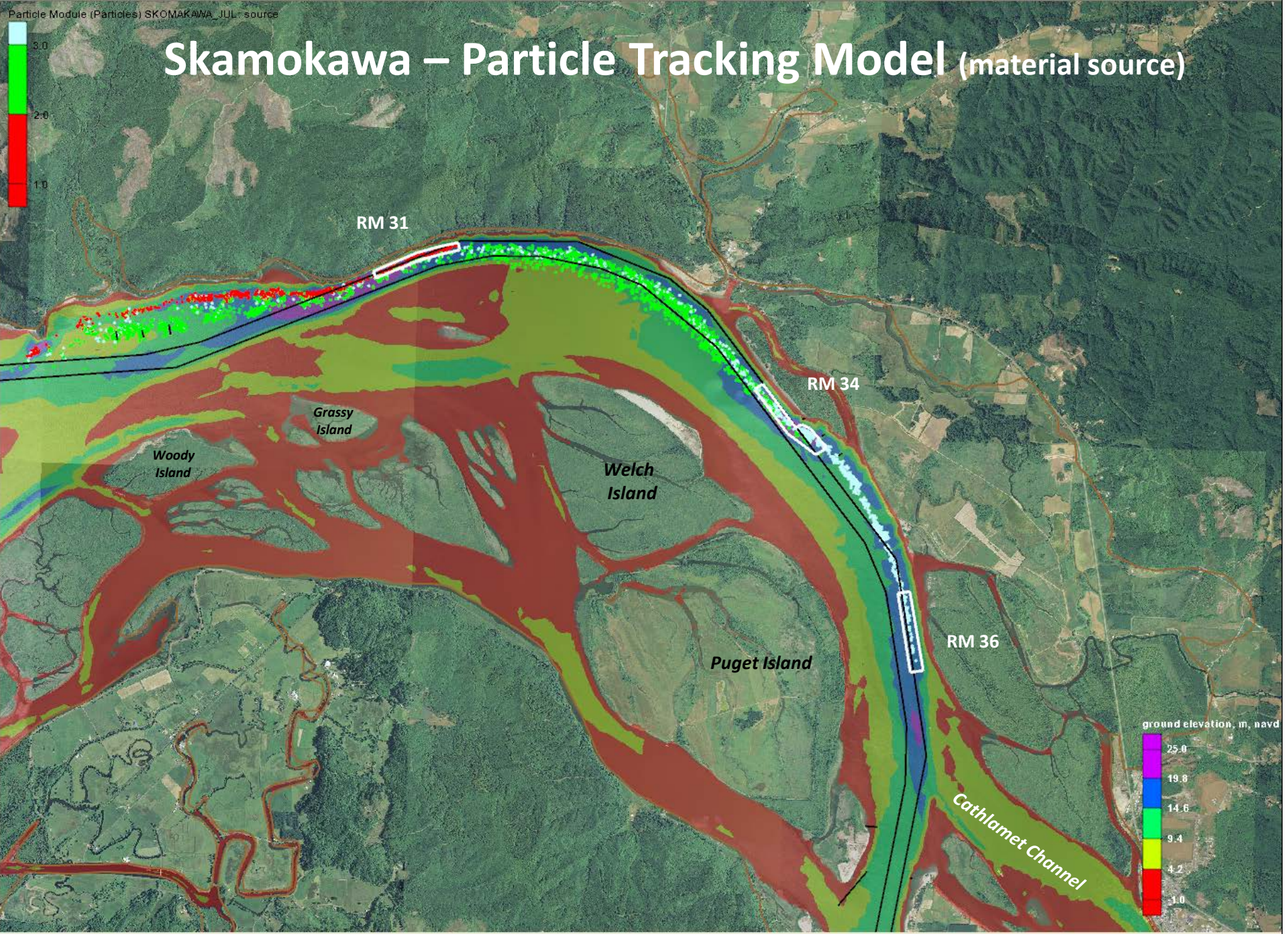


Skamokawa – Particle Tracking Model (material source)



Conclusion

To Reduce Shoaling in FNC at Westport Bar

Minimize Placement of Dredged Material at Eureka Bar

In-water Placement Sites

Verifying Sediment Deposition on the Seabed during Placement of Dredged Material at Nearshore Sites

Regional Sediment Management

Comparison of Observations to Model Results – MCR SJS

Mouth of the Columbia River - Bathymetry and 2012 Dredged Material Placement Sites

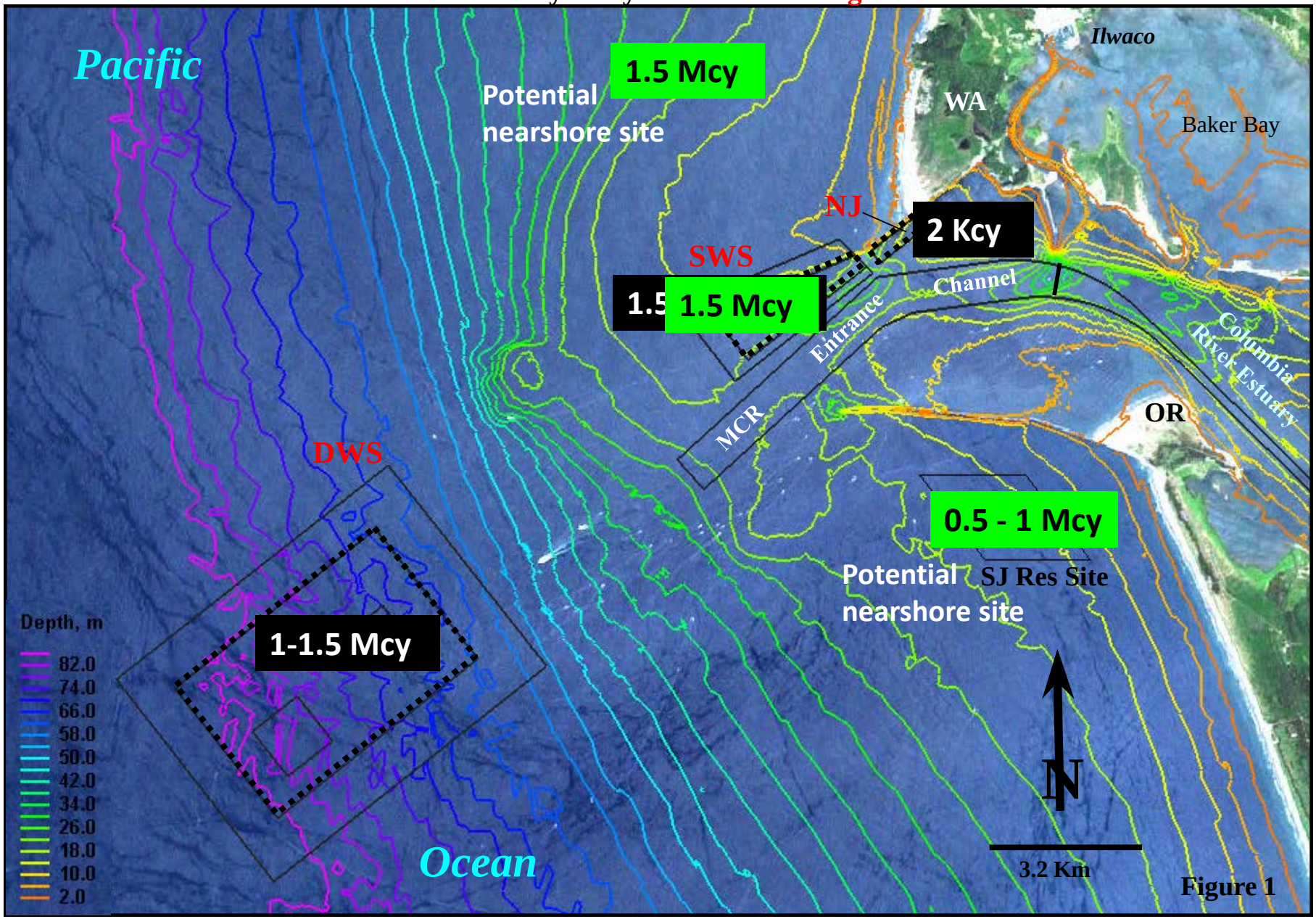
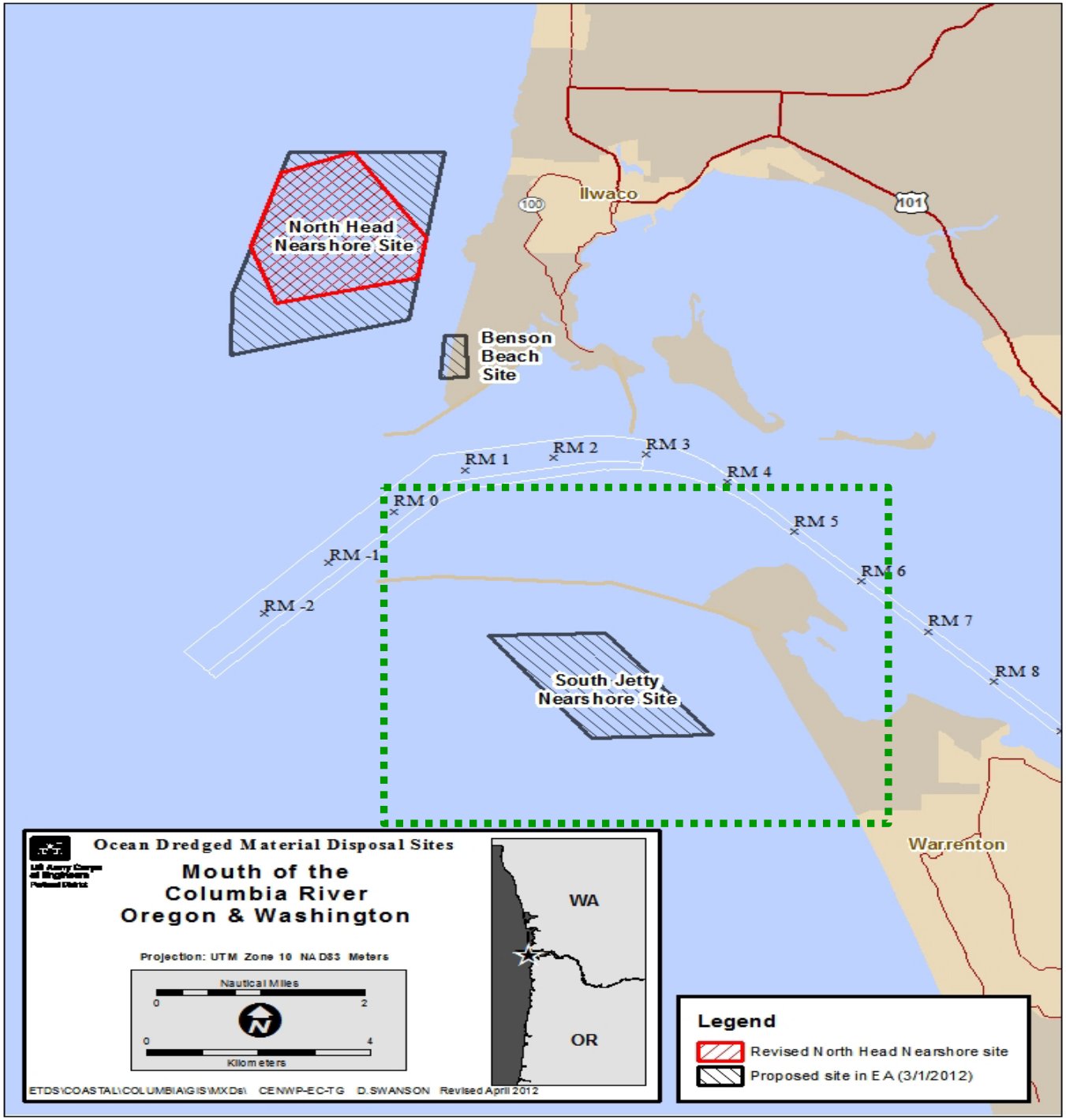


Figure 1

DWS= Deep Water Site, 102 MPRSA
SWS= Shallow Water Site, 102 MPRSA

NJ Site = North Jetty disposal site, 404 CWA

SJ Res. Site = South Jetty research site, restricted use by EPA permit



Proposed Network of Nearshore Sites

for

Placement of MCR Dredged Material

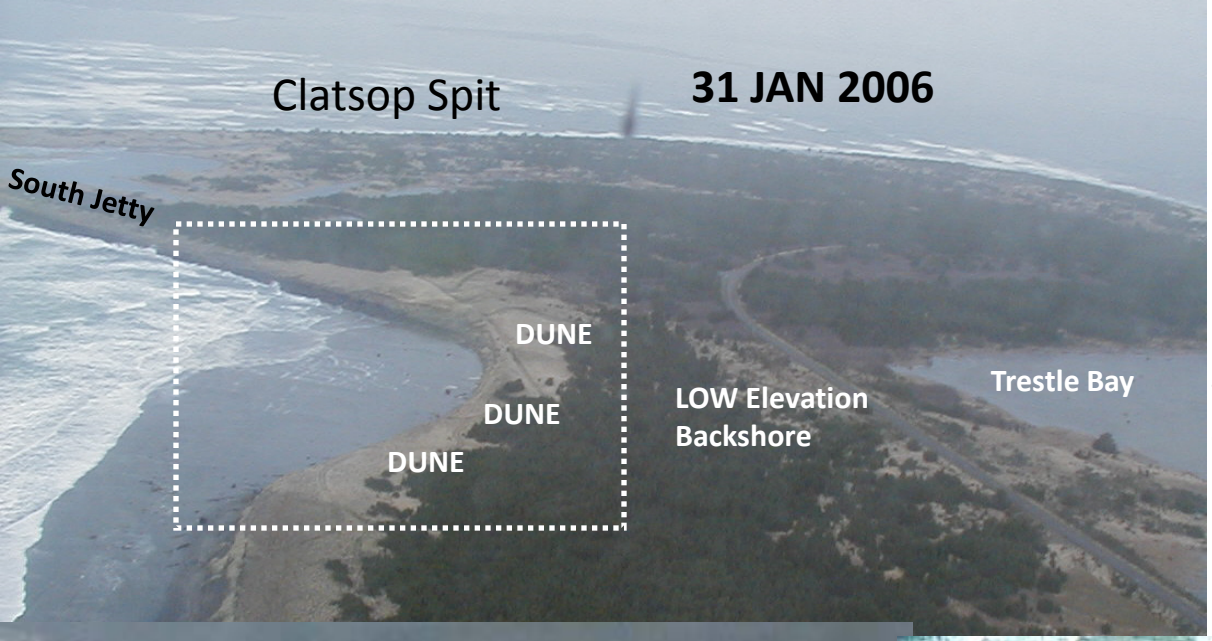
Developed in Cooperation with
States of OR & WA
USEPA
CRFA
NOAA
USFWS
USCG
USACE
Regional NAV

MOTIVATION for SOUTH JETTY Nearshore SITE

Sediment Budget Deficit at SOUTH Side of MCR Inlet…..

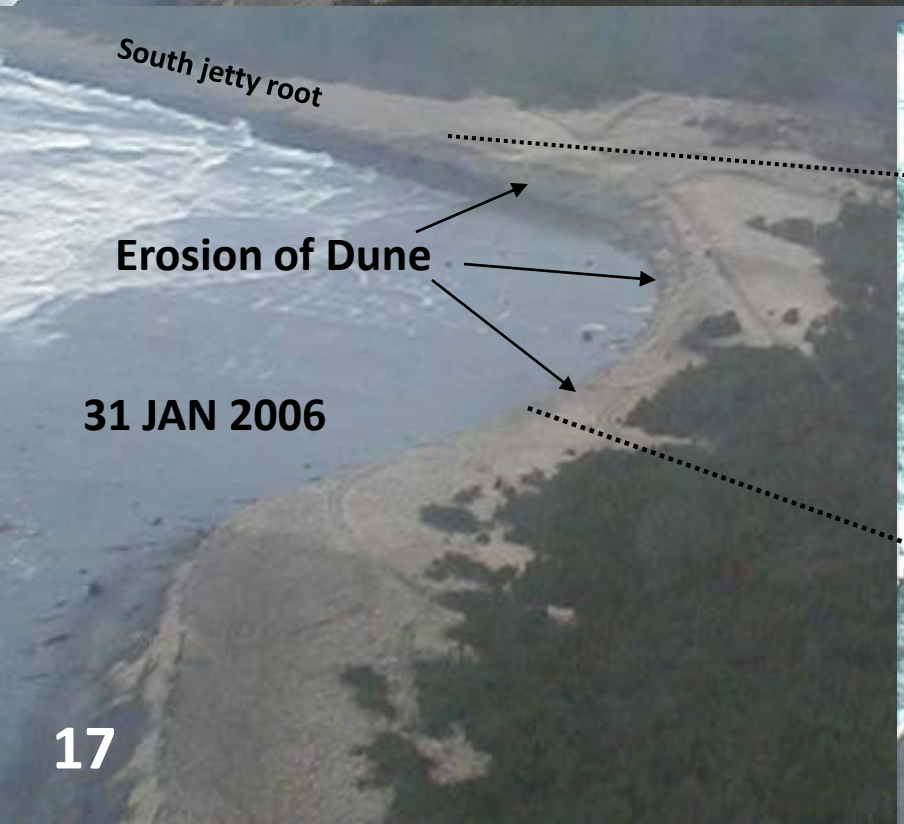
…..is Contributing to Instability Risks of South Jetty

SJS was First Proposed in 2003



Sediment Budget Deficit at SOUTH Side of MCR Inlet…

…is Contributing to Instability Risks at South Jetty Root



Dredged Material "Placement" Can be a Major Consideration

* Dredged Sand is a <u>Resource</u> – How to Best augment littoral sediment budget (RSM)

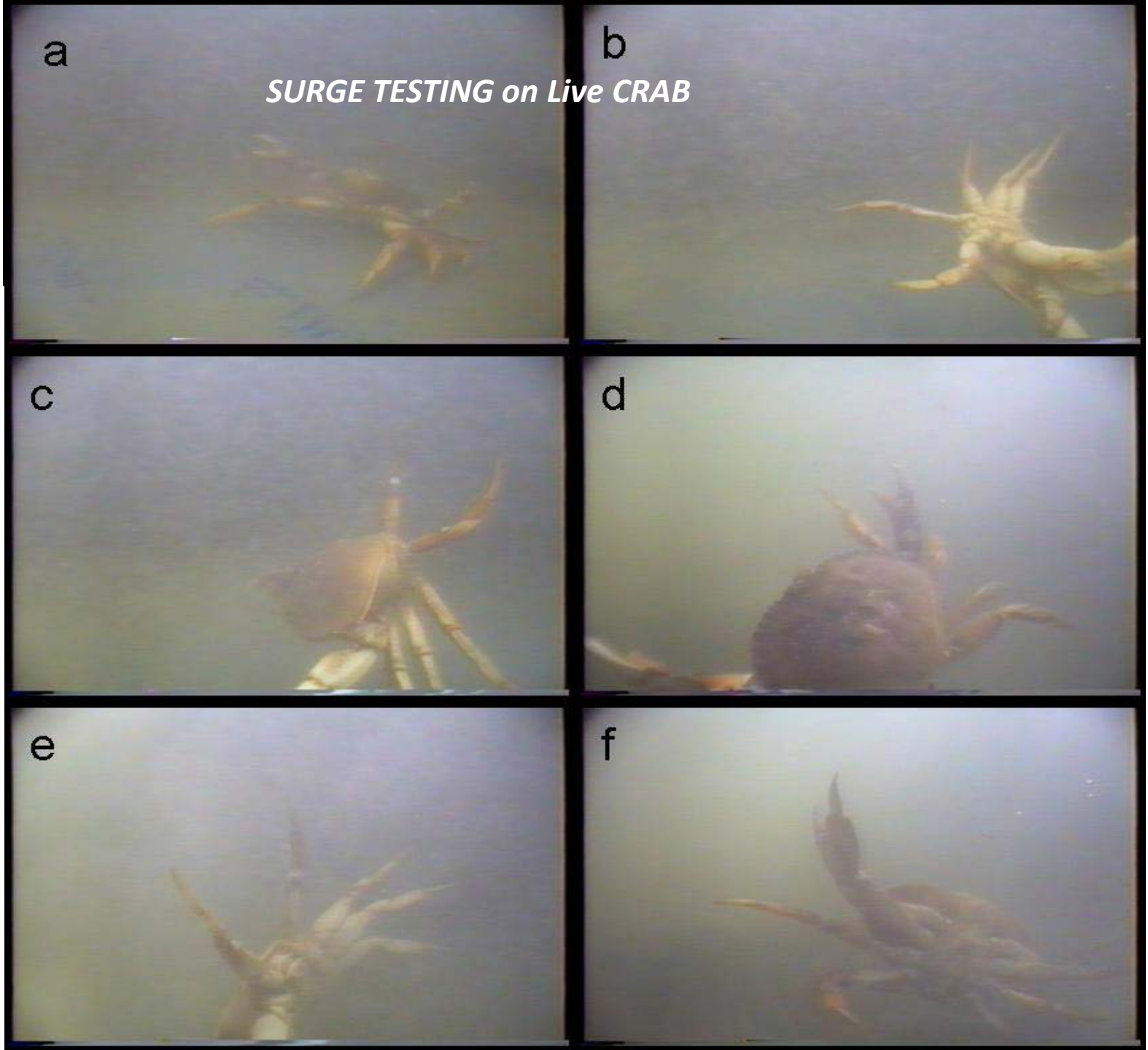
* Potential effects at Placement areas - How can ecological effects be minimized

Split-Hull hopper dredge placing dredged material in open water: AT SPECIFIED PLACEMENT AREAS

We Demonstrated that Dredged Material Placed at the SJS will Produce Intended Benefits, BUT…..

Pacific Northwest National Laboratory
Operated by Battelle for the U.S. Department of Energy

SURGE TESTING on Live CRAB



Lab Tests
To Evaluate
Crab Behavior/Injury

Due to Lateral
Bottom Surge from
Dredged Material
Placement

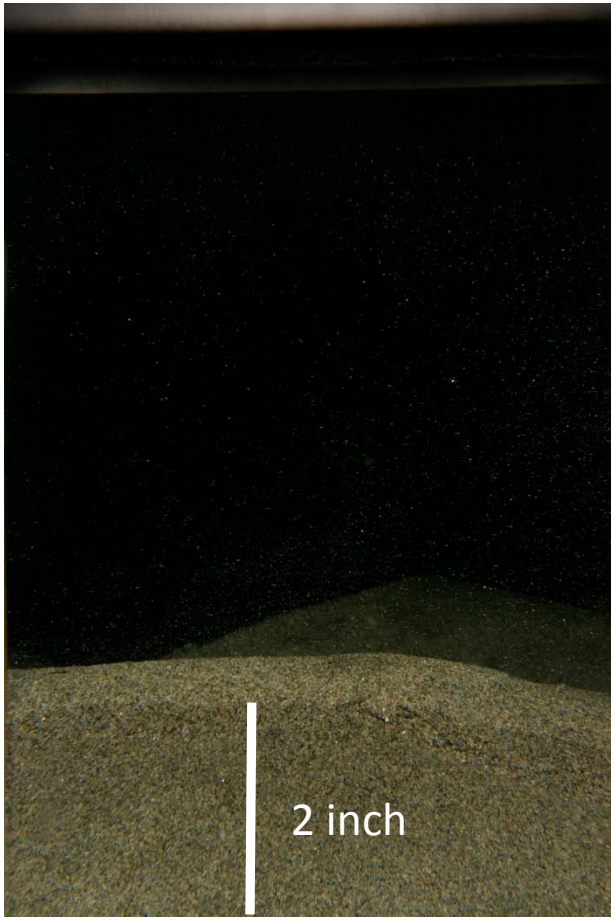
Bottom surge =
~ 12 ft/sec

<u>Repeat tests showed</u>
<u>No Injury</u>
<u>To CRAB</u>

Limitation of SPI Camera to Penetrate Sand substrate > 2 inch AND

Inability for KTR to discern distinct sediment Interface
(between insitu and placed dredged material)……

……..Rendered the SPI results as inconclusive



2004 PNNL Lab Tests Indicated that IF deposition on Crab less was than <u>4 inches per dump</u>, there would be very little affect on Crab Mortality

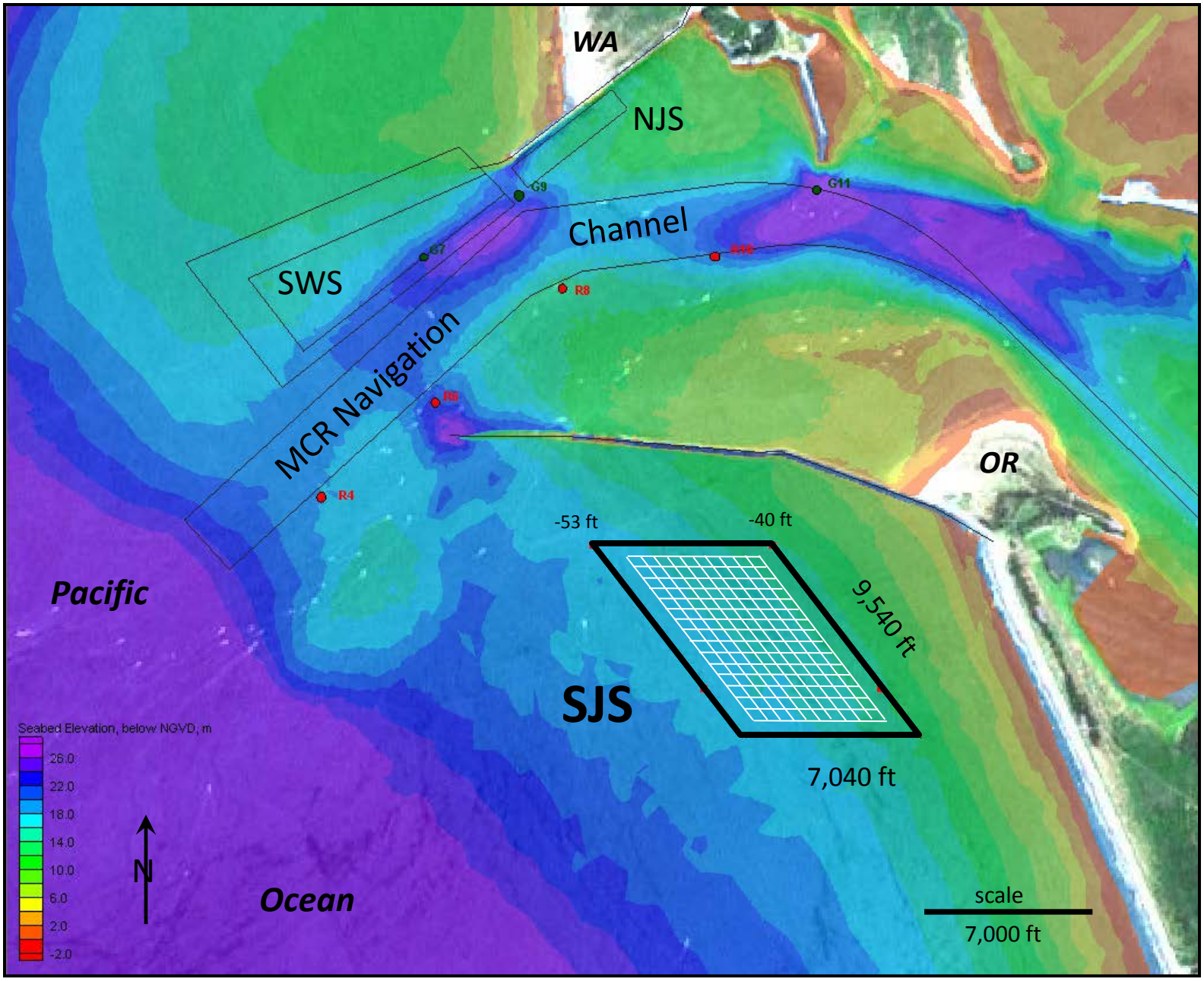
Evaluation & Monitoring for SJS Experimental Placement

SEP 2012

8 Loads Placed by Essayons

In-Situ Field Investigation for Dredged Material Deposition
&
Compare Observations to Modeling Results

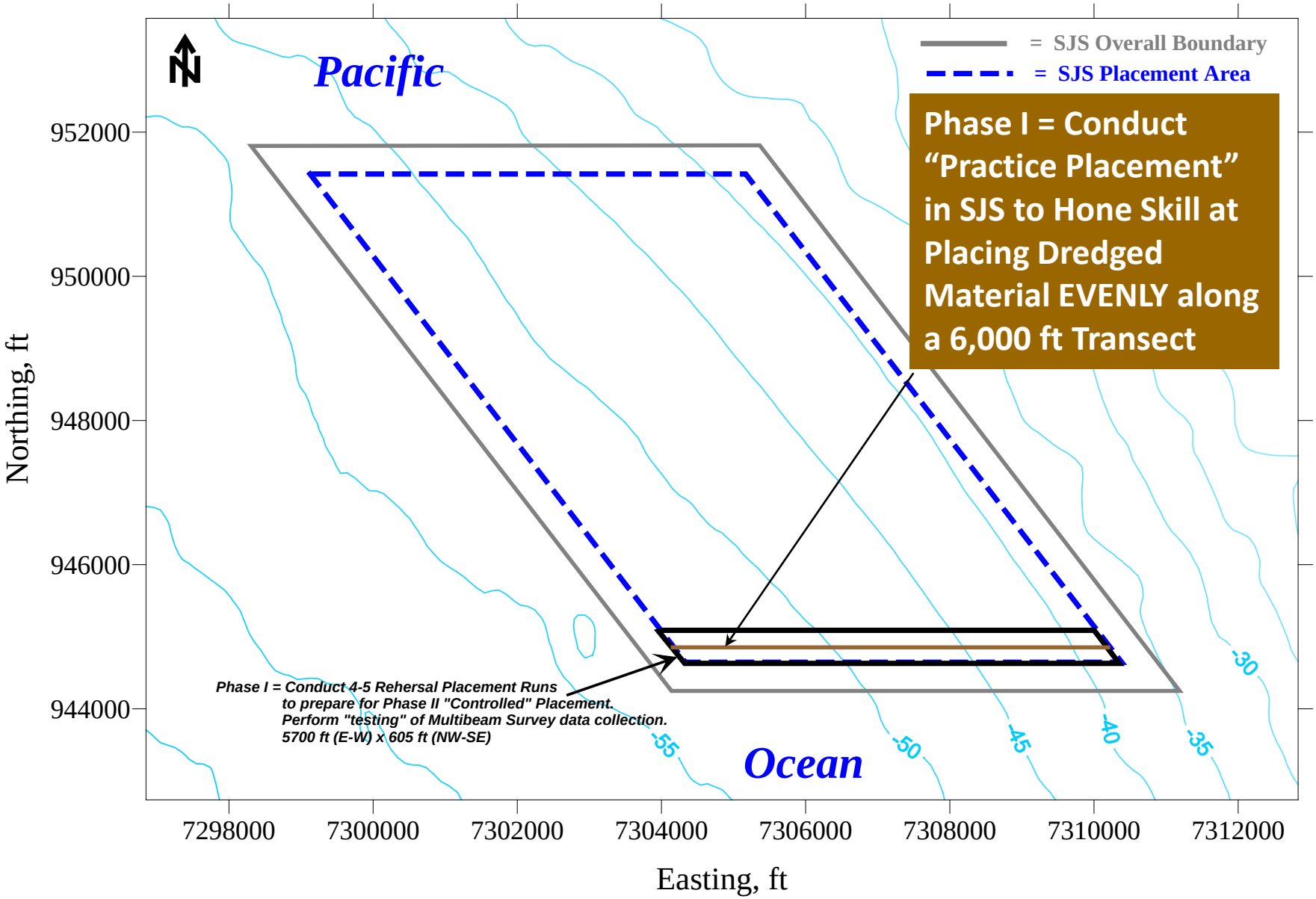
In-Situ Video Camera and MB Surveying



Proposed Location & Extent for MCR South Jetty Dredged Material Placement Site (SJS) 2012

MCR South Jetty Site - SJS (CWA 404)

Layout For Phased Implementation of Initial Site Utilzation & Monitoring Plan

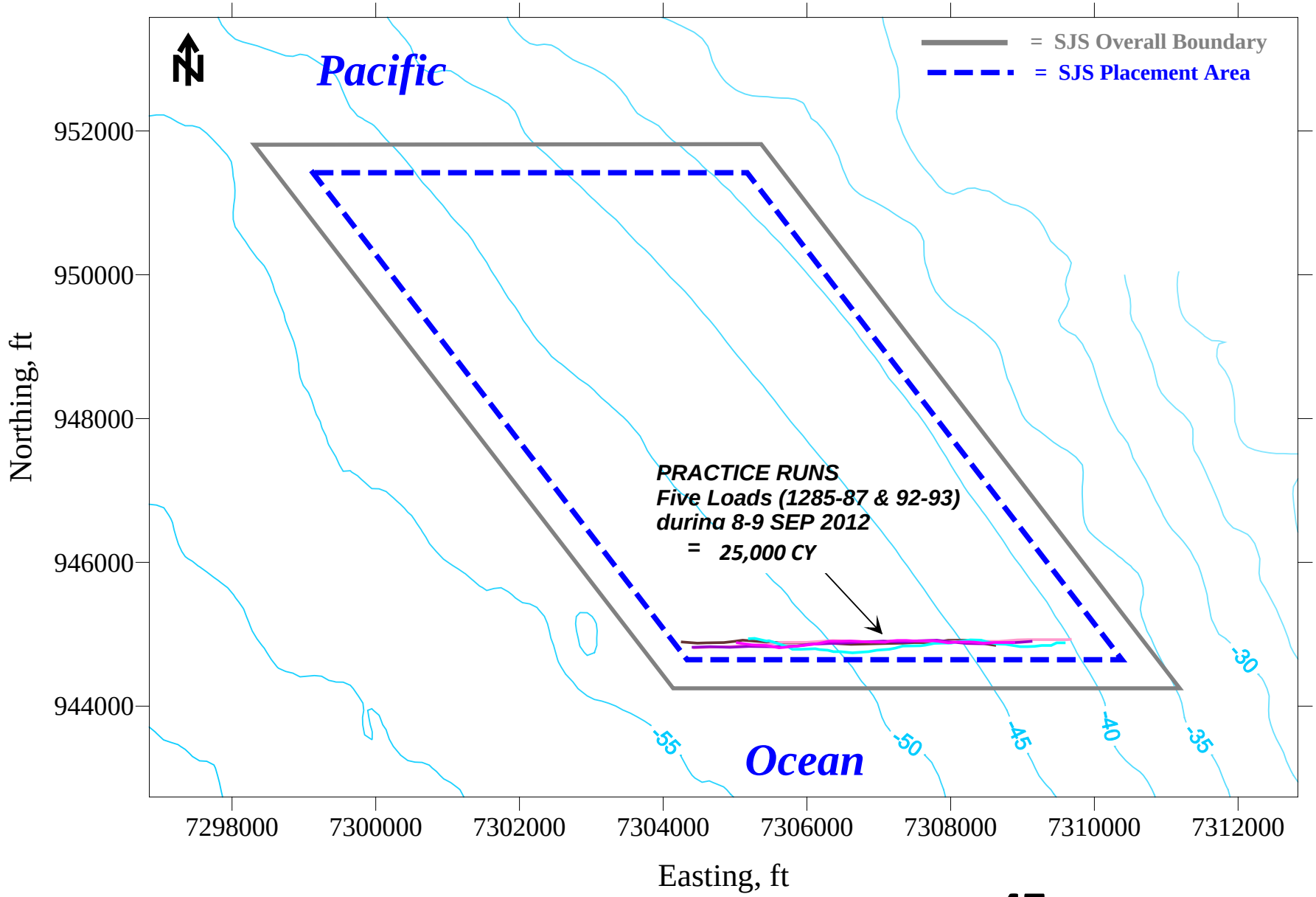


coordinates are SPCS Oregon, north, ft NAD83
elevations are in ft, below MLLW, data = Aug 2012, contour interval = 5 ft

US Army Corps of Engineers
Portland Distirct

MCR South Jetty Site - SJS (CWA 404)

Layout For Phased Implementation of Initial Site Utilzation & Monitoring Plan



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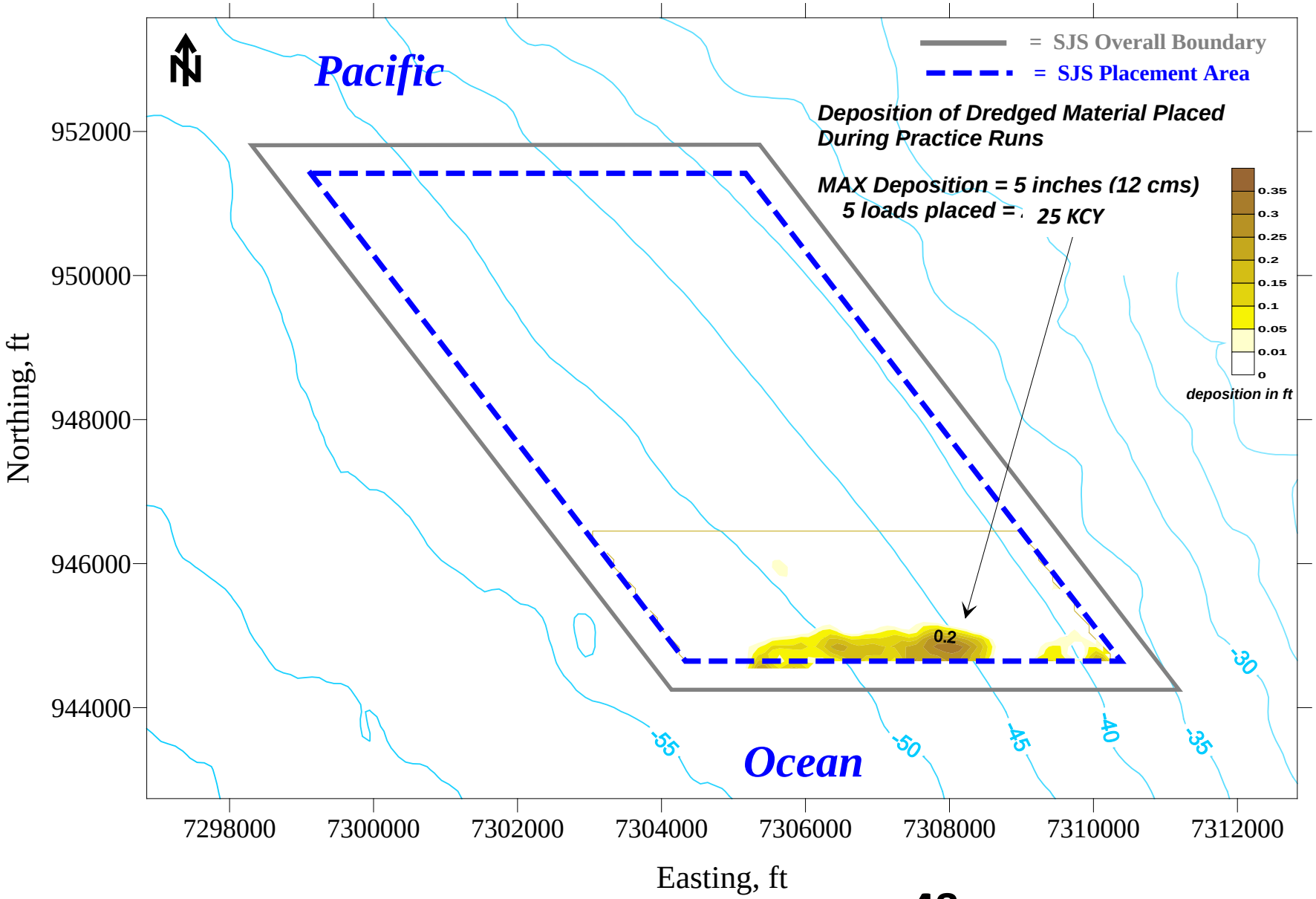
US Army Corps of Engineers
Portland Distirct

MCR South Jetty Site - SJS (CWA 404)

Layout For Phased Implementation of Initial Site Utilzation & Monitoring Plan



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US Army Corps of Engineers
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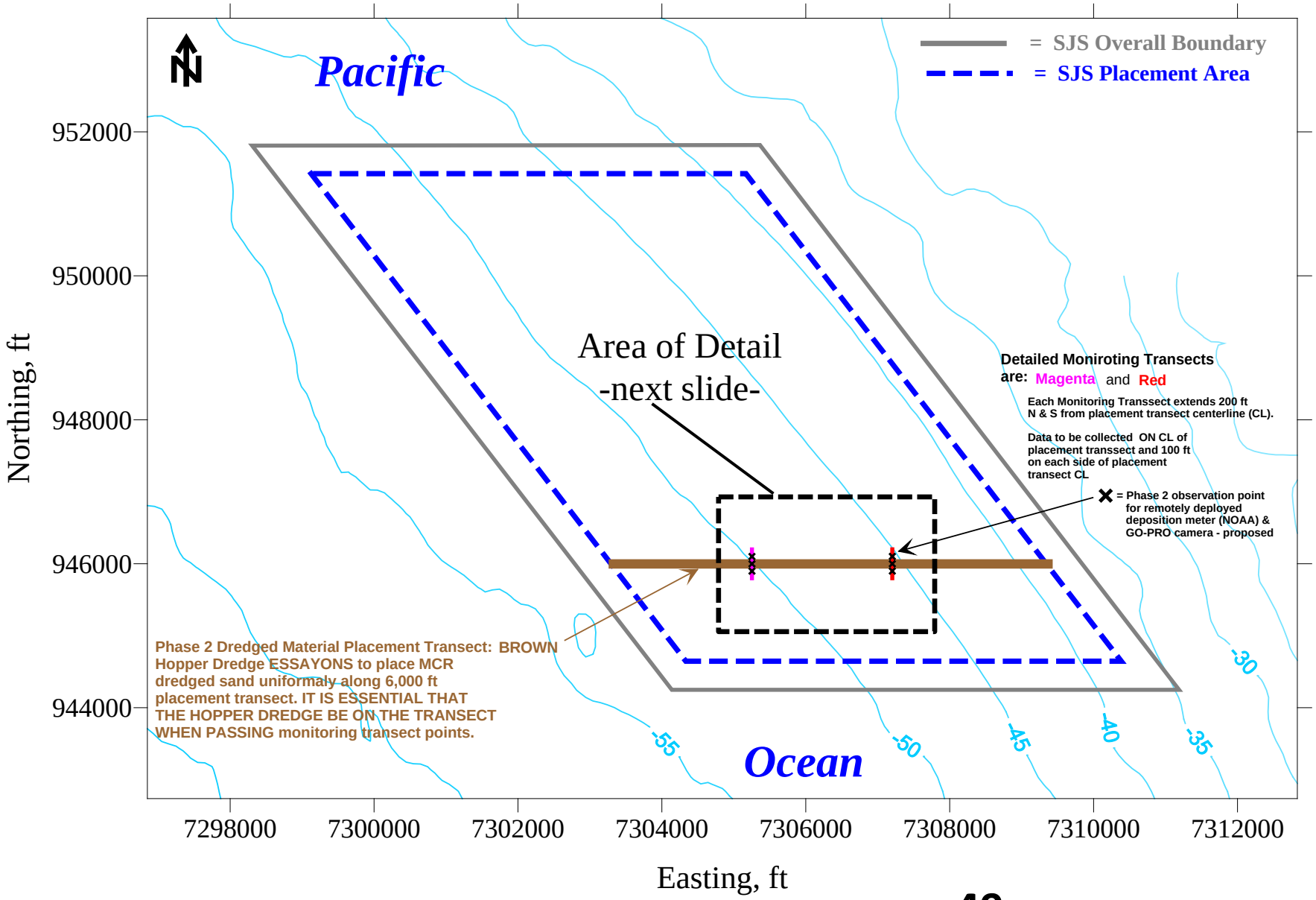
MCR South Jetty Site - SJS (CWA 404)

Layout For Phased Implementation of Initial Site Utilzation & Monitoring Plan



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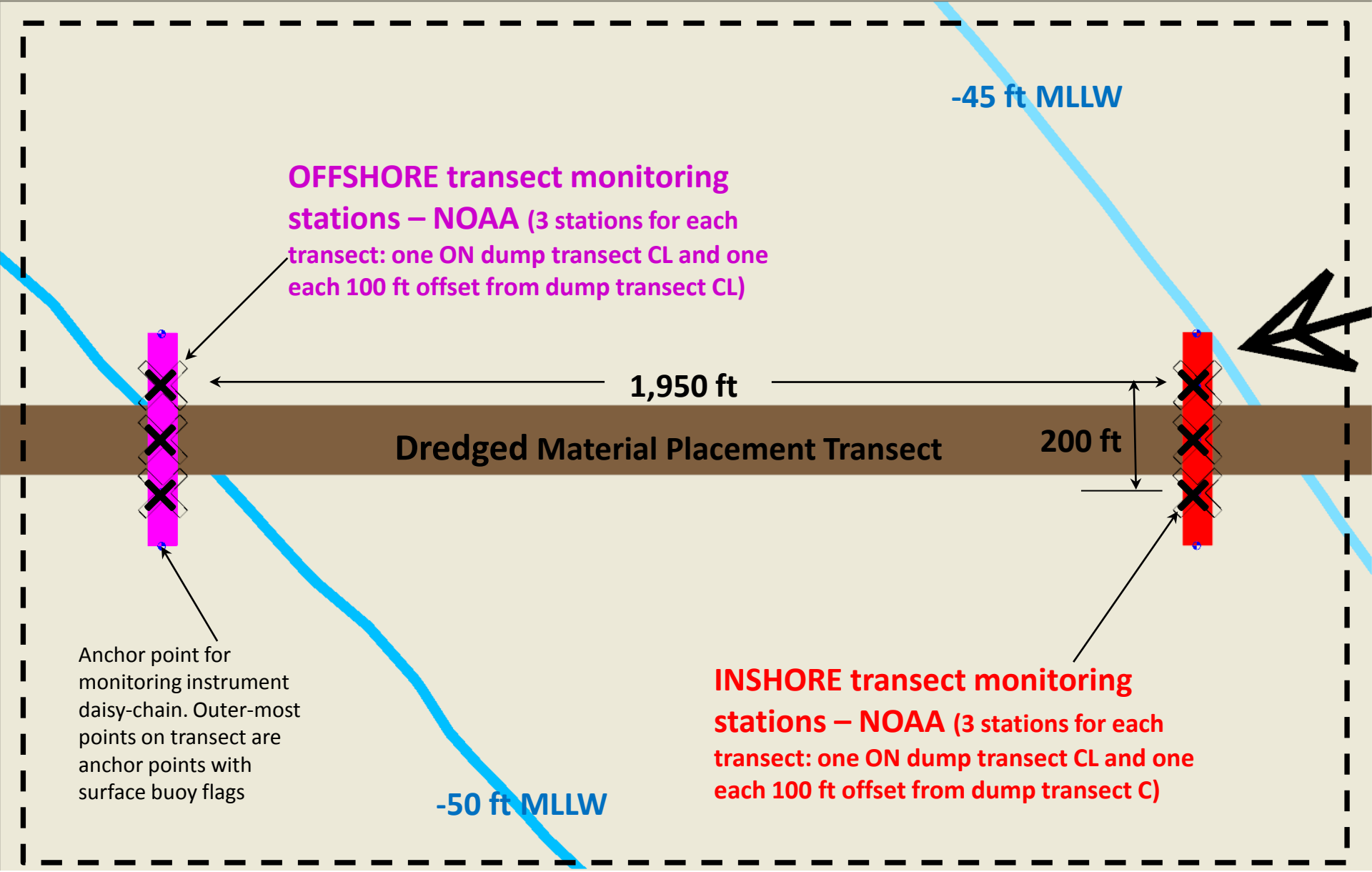
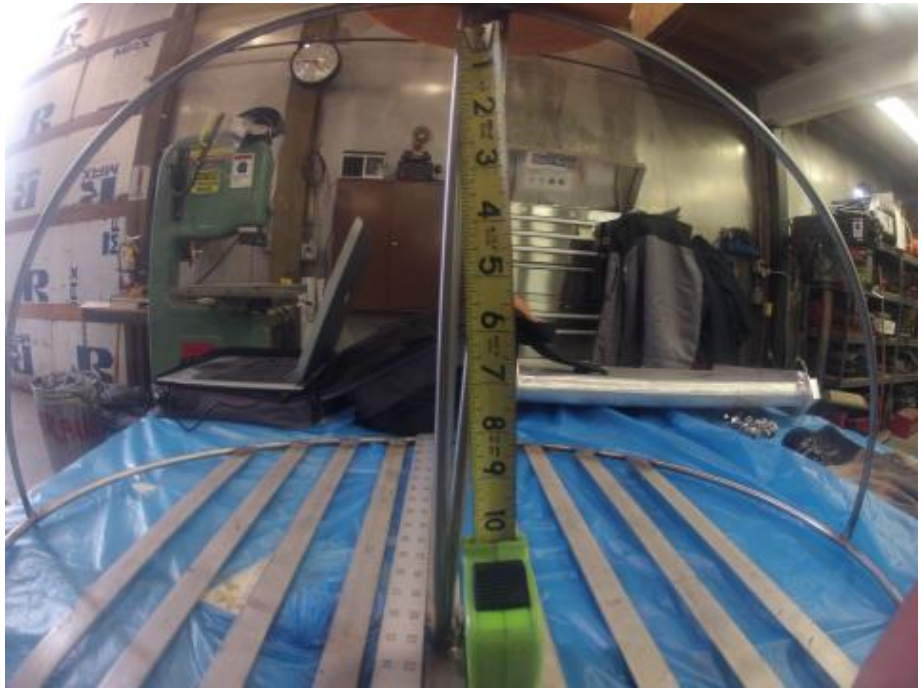
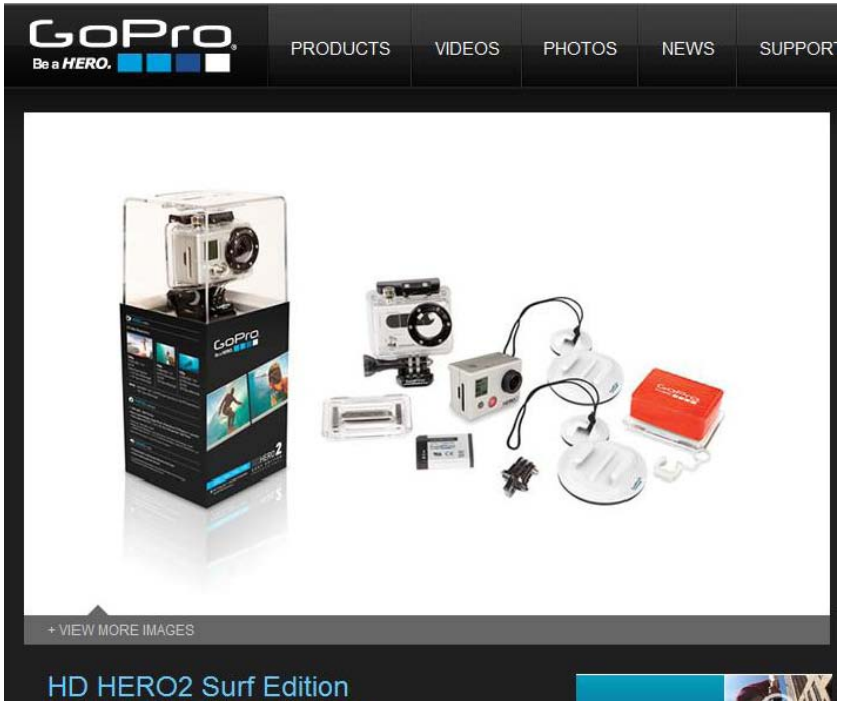


Close-up View of SJS Phase II - Monitoring Transect Details

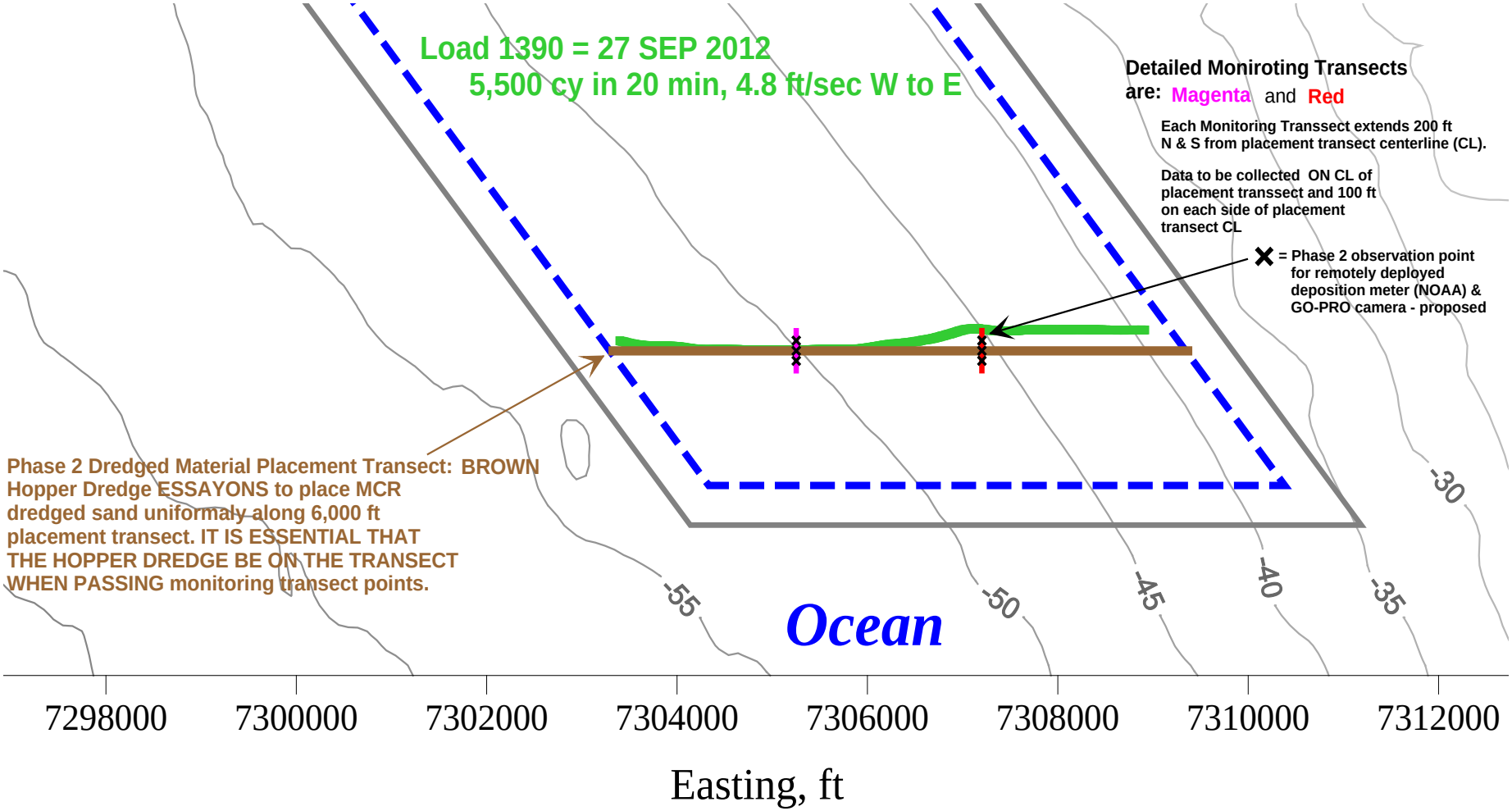


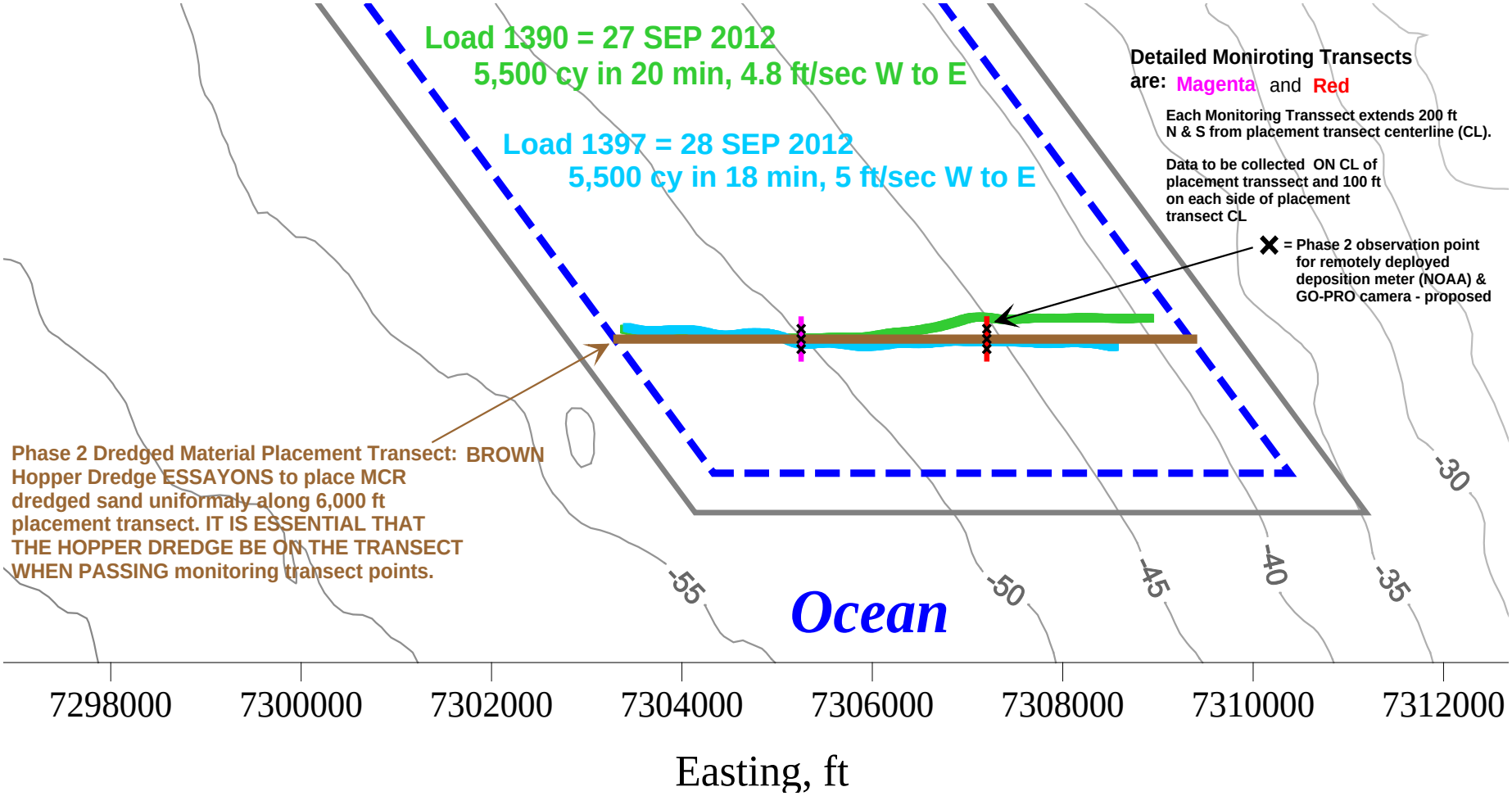


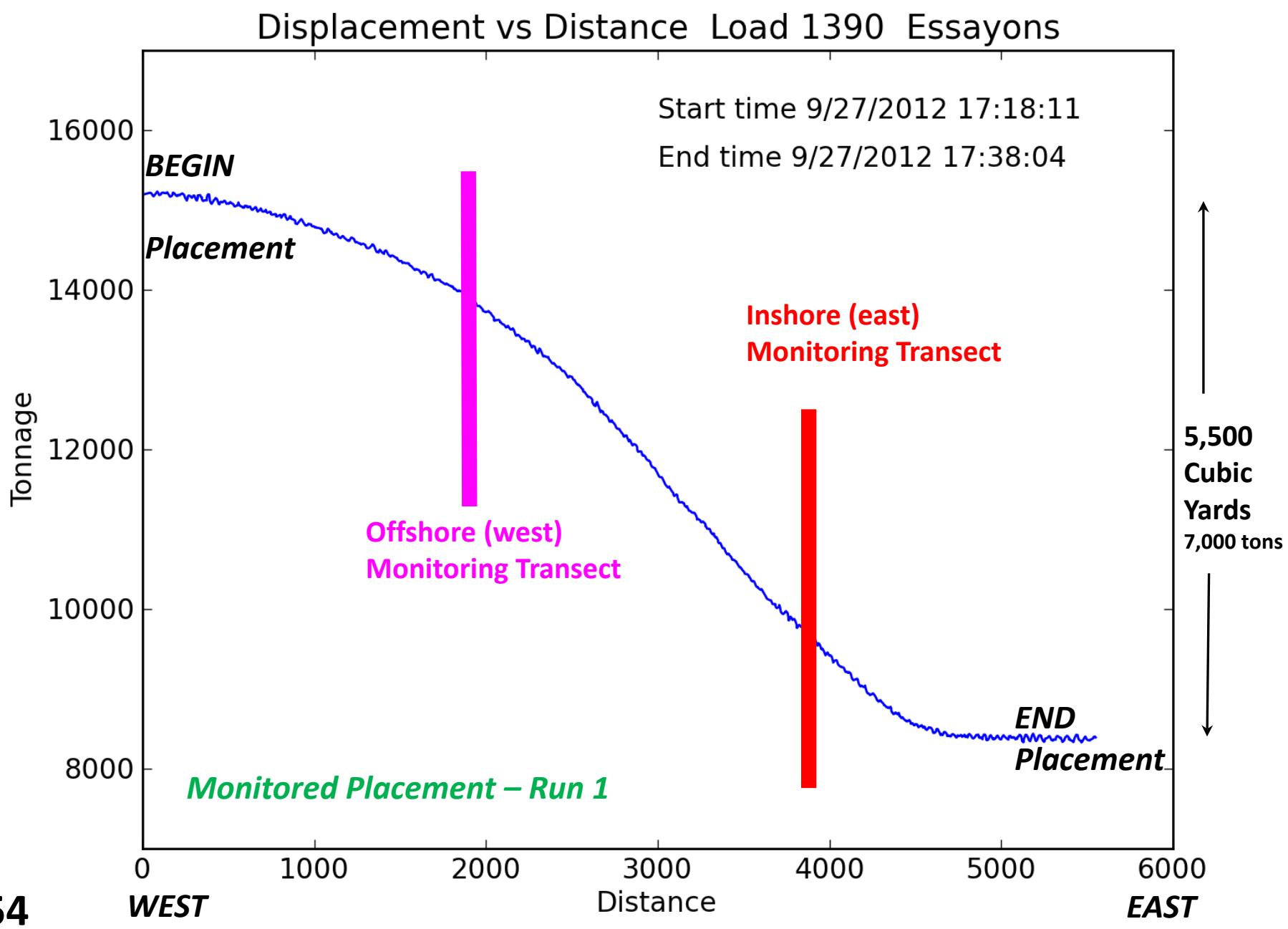
Prototype deployable deposition meter, via Curtis Roegner-NOAA. These are designed to go "over the side" and be retrieved like crab traps.

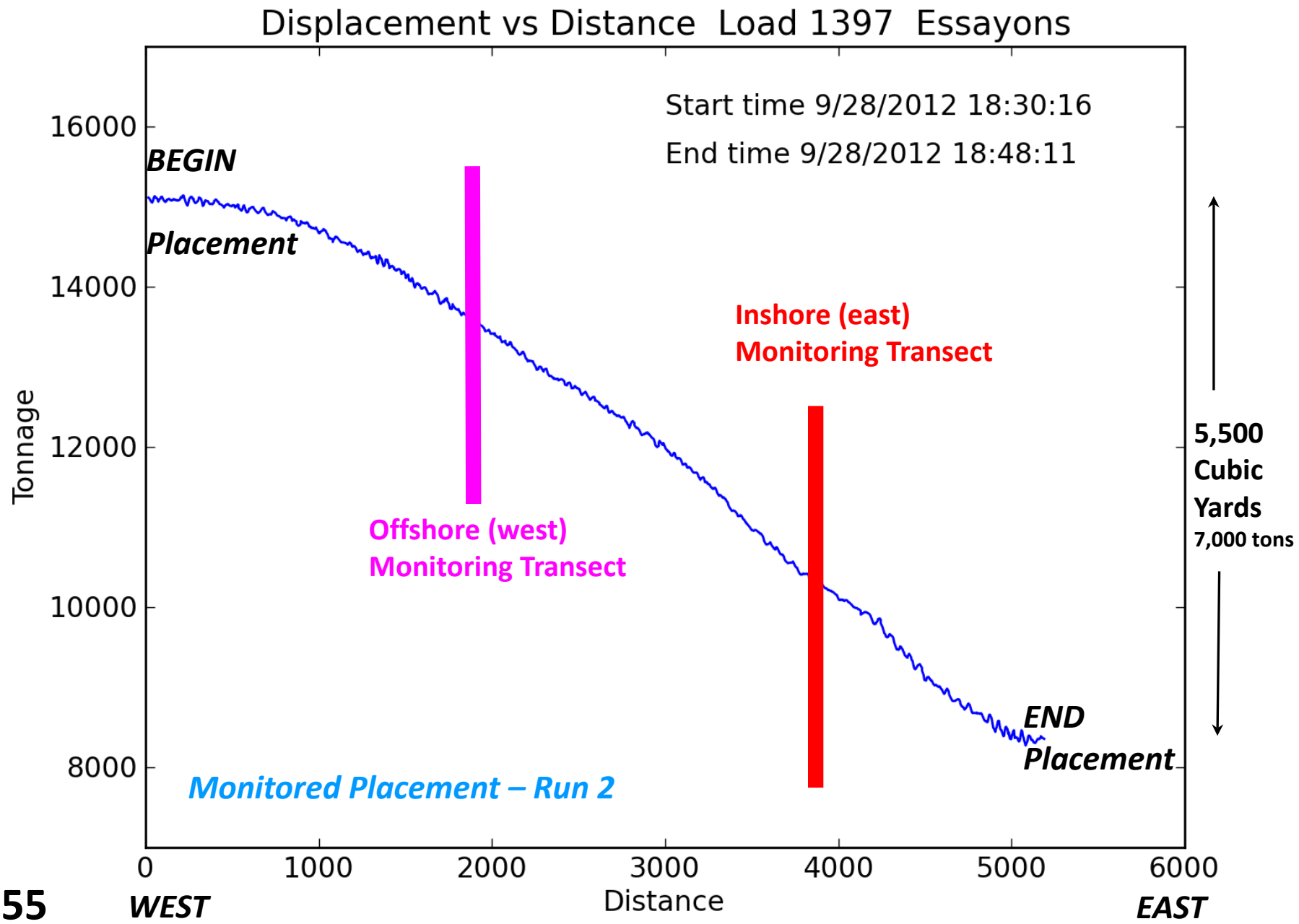
A Gopro camera, attached to the deposition meter mount, can record the deposition event.

COURTESY OF CURTIS ROEGNER-NOAA

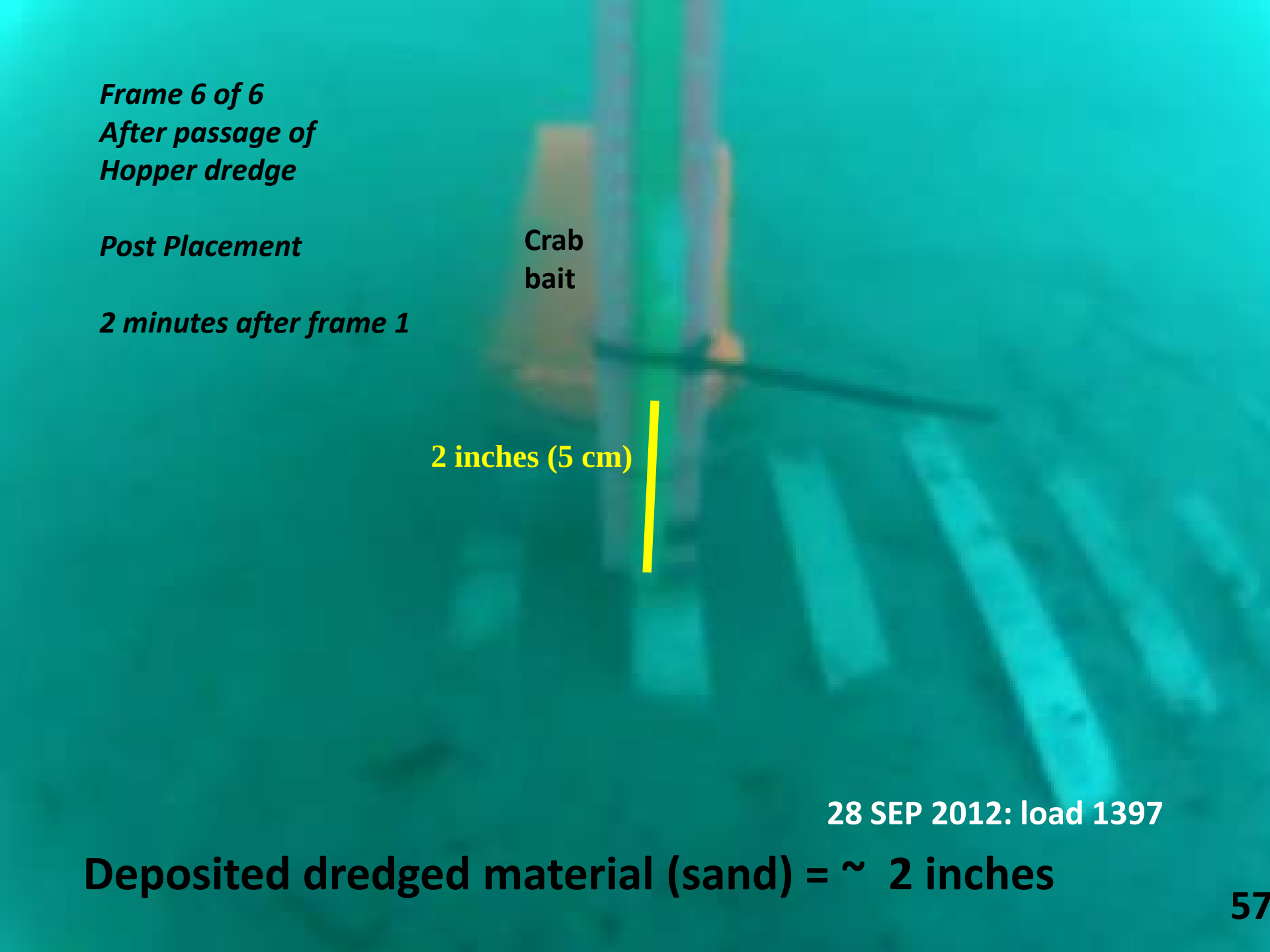

Load 1390 = 27 SEP 2012
5,500 cy in 20 min, 4.8 ft/sec W to E
Detailed Moniroting Transects are: Magenta and Red
Each Monitoring Transsect extends 200 ft N & S from placement transect centerline (CL).
Data to be collected ON CL of placement transsect and 100 ft on each side of placement transect CL
✖ = Phase 2 observation point for remotely deployed deposition meter (NOAA) & GO-PRO camera - proposed
Phase 2 Dredged Material Placement Transect: BROWN
Hopper Dredge ESSAYONS to place MCR dredged sand uniformaly along 6,000 ft placement transect. IT IS ESSENTIAL THAT THE HOPPER DREDGE BE ON THE TRANSECT WHEN PASSING monitoring transect points.
Ocean
-55
-50
-45
-40
-35
-30
7298000
7300000
7302000
7304000
7306000
7308000
7310000
7312000
Easting, ft


Load 1390 = 27 SEP 2012
5,500 cy in 20 min, 4.8 ft/sec W to E
Load 1397 = 28 SEP 2012
5,500 cy in 18 min, 5 ft/sec W to E
Detailed Moniroting Transects are: Magenta and Red
Each Monitoring Transsect extends 200 ft N & S from placement transect centerline (CL).
Data to be collected ON CL of placement transsect and 100 ft on each side of placement transect CL
✖ = Phase 2 observation point for remotely deployed deposition meter (NOAA) & GO-PRO camera - proposed
Phase 2 Dredged Material Placement Transect: BROWN
Hopper Dredge ESSAYONS to place MCR dredged sand uniformaly along 6,000 ft placement transect. IT IS ESSENTIAL THAT THE HOPPER DREDGE BE ON THE TRANSECT WHEN PASSING monitoring transect points.
-55
-50
-45
-40
-35
-30
Ocean
7298000
7300000
7302000
7304000
7306000
7308000
7310000
7312000
Easting, ft

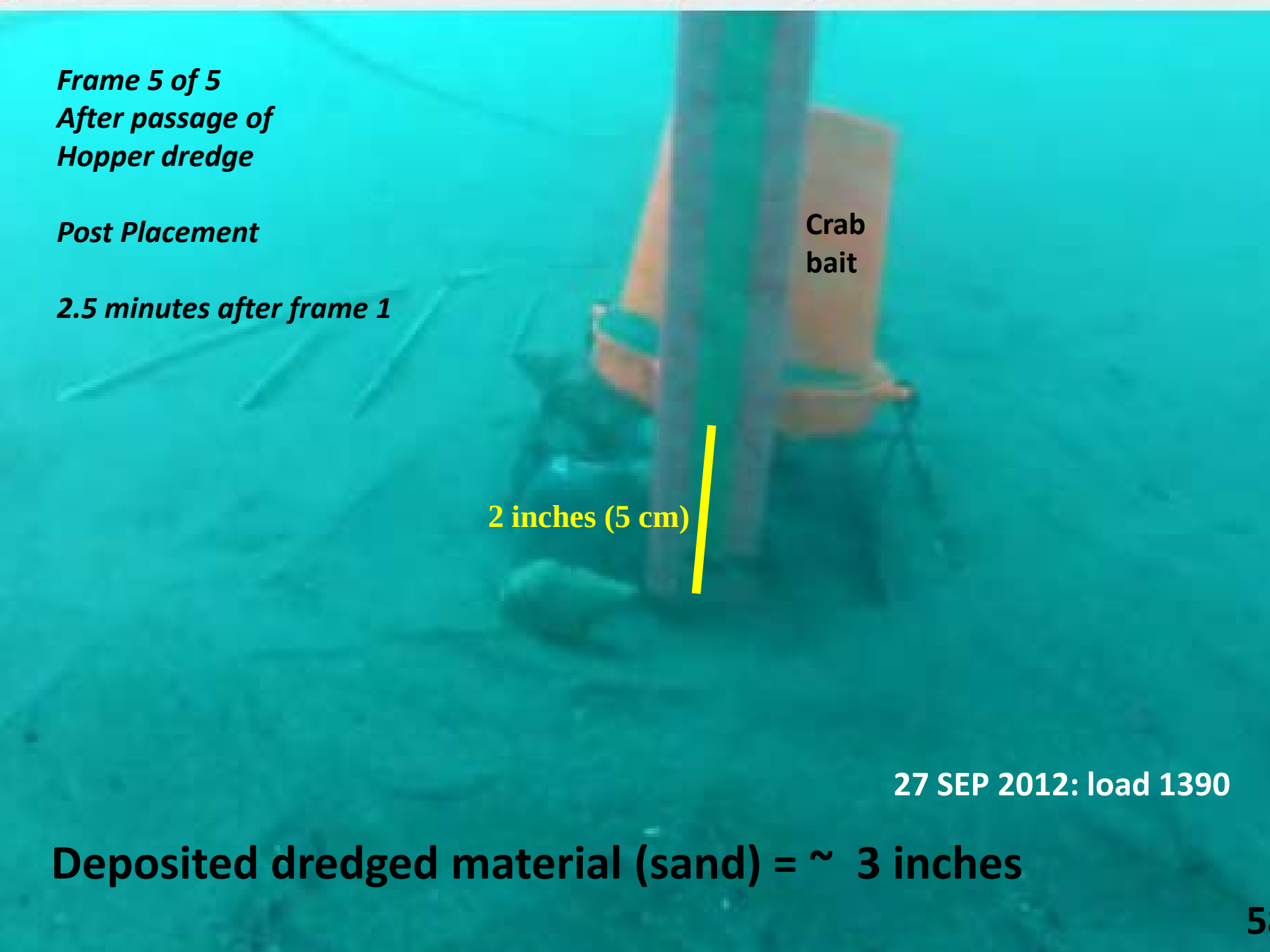

Displacement vs Distance Load 1390 Essayons
Start time 9/27/2012 17:18:11
End time 9/27/2012 17:38:04
BEGIN
Placement
Inshore (east)
Monitoring Transect
Offshore (west)
Monitoring Transect
END
Placement
Monitored Placement – Run 1
5,500
Cubic
Yards
7,000 tons
Tonnage
16000
14000
12000
10000
8000
0
1000
2000
3000
4000
5000
6000
Distance
WEST
EAST


Displacement vs Distance Load 1397 Essayons
Start time 9/28/2012 18:30:16
End time 9/28/2012 18:48:11
BEGIN
Placement
Inshore (east)
Monitoring Transect
Offshore (west)
Monitoring Transect
END
Placement
Monitored Placement – Run 2
5,500
Cubic
Yards
7,000 tons
Tonnage
16000
14000
12000
10000
8000
0
1000
2000
3000
4000
5000
6000
Distance
WEST
EAST

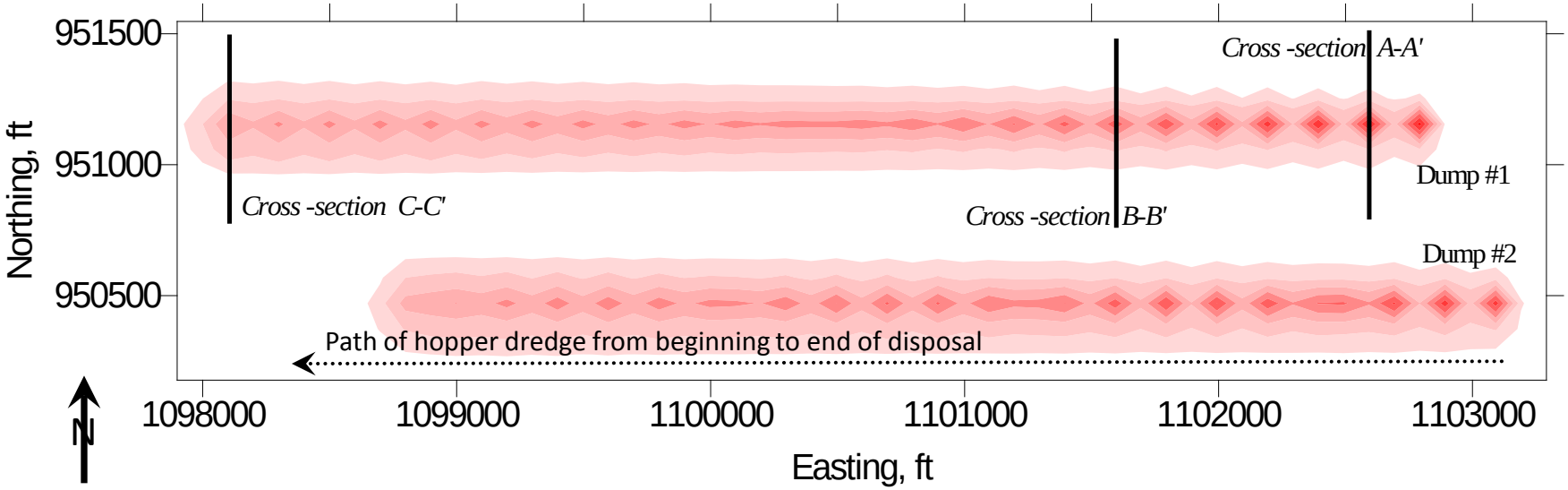
Deposited dredged material (sand) = ~ 1 inch (2.54 cm)



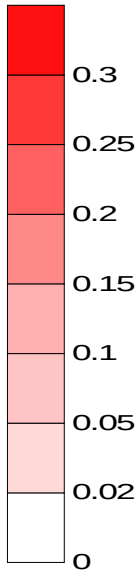
Deposited dredged material (sand) = ~ 2 inches


Frame 5 of 5
After passage of
Hopper dredge
Post Placement
2.5 minutes after frame 1
Crab
bait
2 inches (5 cm)
27 SEP 2012: load 1390
Deposited dredged material (sand) = ~ 3 inches

MDFATE Model Simulation of Dredged Material Distribution on Seabed at SJ



Deposition shown in FT



Dump 1(1256): 5,000 cy placed 14 Sept 2005: 11:16 - 11:25 am, Avg vessel speed = 9.0 ft/sec tide elevation = 5.3 ft MLLW, depth averaged current = 6 cm/sec at 223 deg

Dump 2(1257): 5,000 cy placed 14 Sept 2005: 14:04 - 14:12 am, Avg vessel speed = 9.2 ft/sec tide elevation = 3.8 ft MLLW, depth averaged current = 11 cm/sec at 290 deg

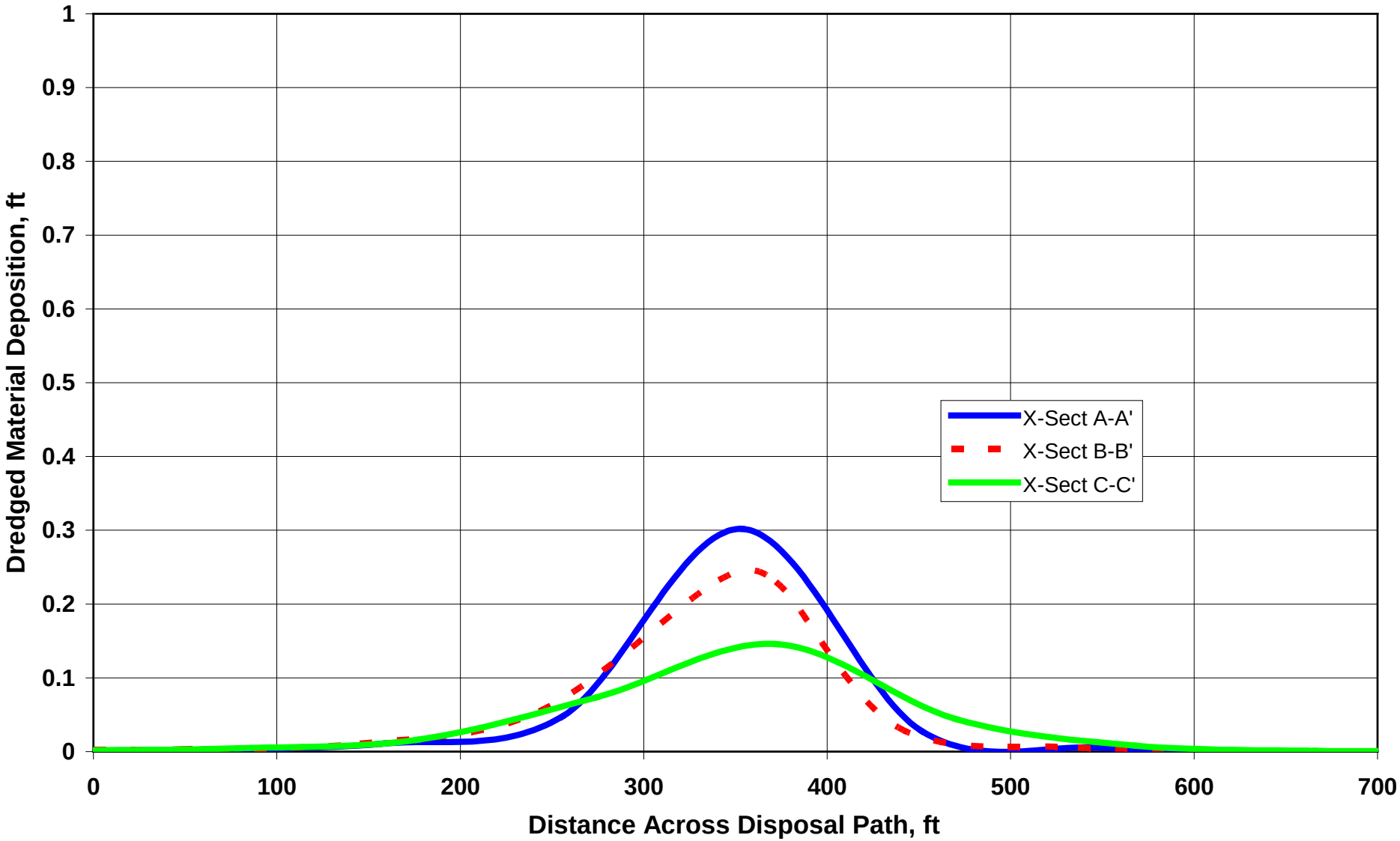
Dump 3(1258): 5,000 cy placed 14 Sept 2005: 17:06 - 17:16 am, Avg vessel speed = 8.1 ft/sec tide elevation = 3.1 ft MLLW, depth averaged current = 7 cm/sec at 226 deg

Dump 4(1259): 5,000 cy placed 14 Sept 2005: 19:43 - 19:52 am, Avg vessel speed = 8.8 ft/sec tide elevation = 6.4 ft MLLW, depth averaged current = 9 cm/sec at 270 deg

Dump 5(1265): 5,000 cy placed 15 Sept 2005: 8:58 - 9:06 am, Avg vessel speed = 10.6 ft/sec tide elevation = 3.2 ft MLLW, depth averaged current = 10 cm/sec at 310 deg

Dump 6(1266): 5,000 cy placed 15 Sept 2005: 11:46 - 11:55 am, Avg vessel speed = 8.3 ft/sec tide elevation = 6.0 ft MLLW, depth averaged current = 7 cm/sec at 70 deg

Cross - Sections Through Simulated Deposition Pattern of Dredged Material Resulting from Load #1 of Sand Placed in MCR South Jetty research Site by the Hopper Dredge Essayons.

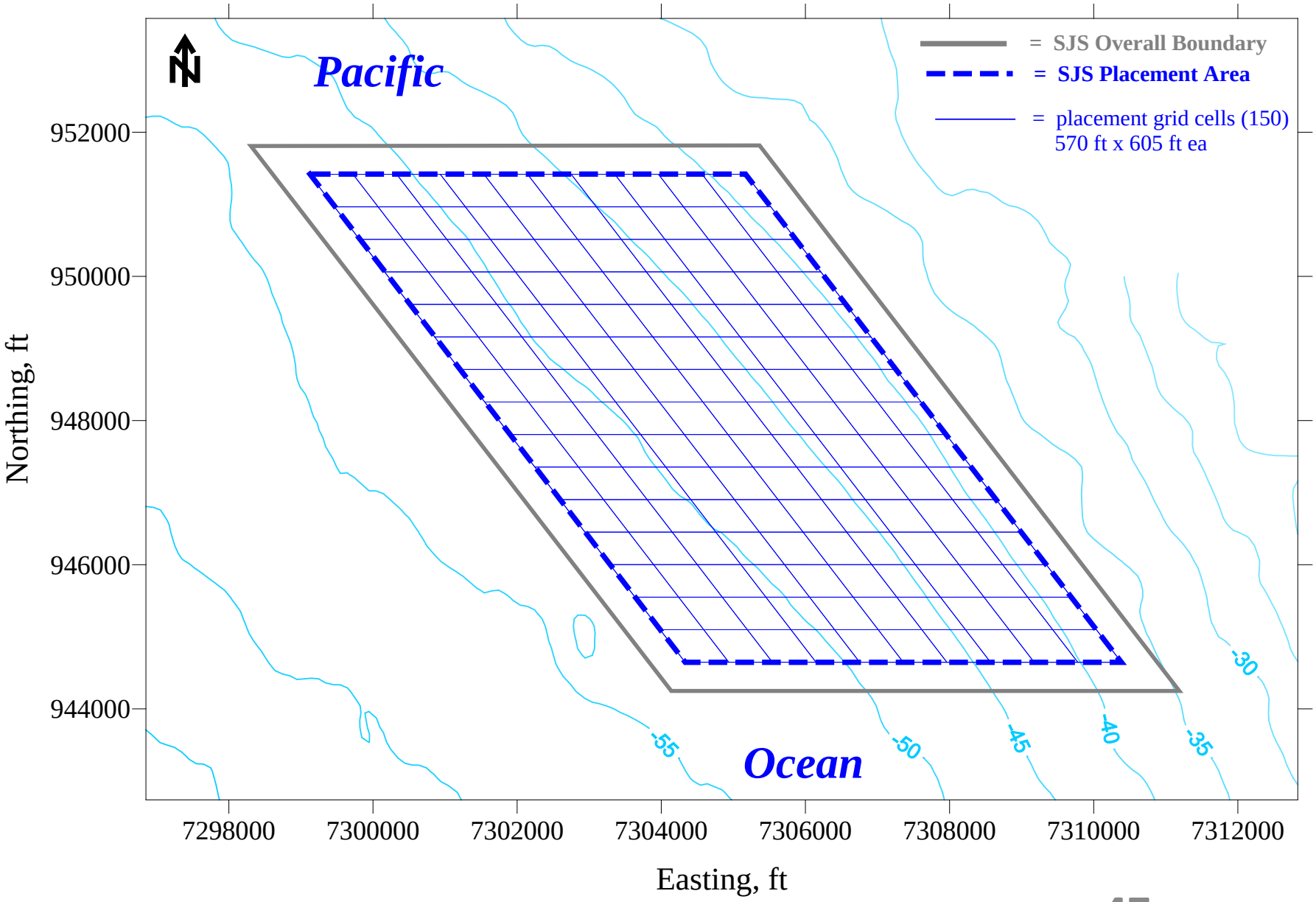


Results: ***Knowledge Accumulation from 2003 to 2012***

- Demonstrated that we can place material with less than 4 inches of deposition using a conventional 6,000 CY hopper dredge.
- Demonstrated that with multiple dumps we can have less than 1 foot of accumulation.
- Next stage – can we use this as an operational site by distributing material evenly over a dredging season? -------OPERATIONAL PLAN-----

MCR South Jetty Site - SJS (CWA 404)

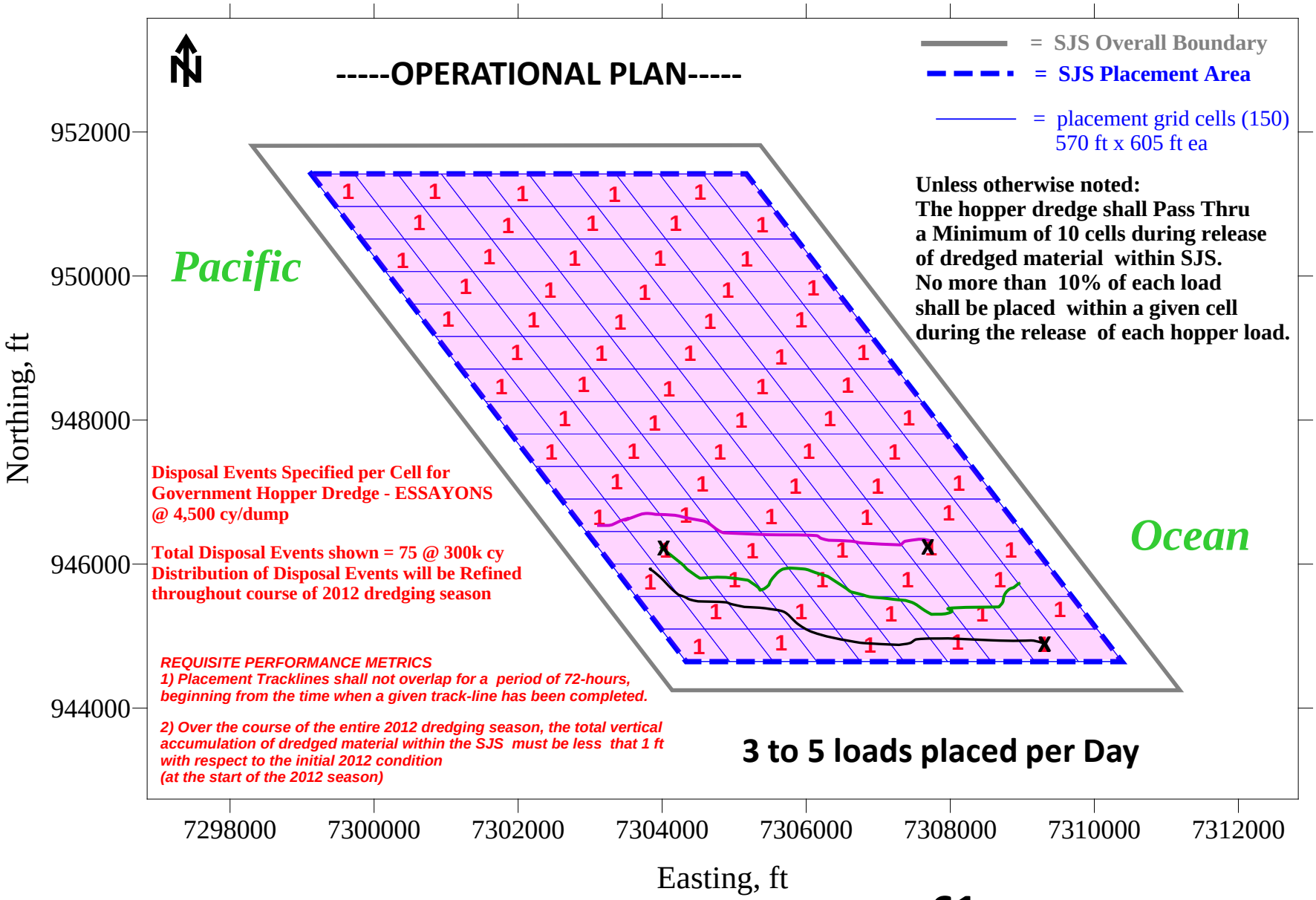
-----OPERATIONAL PLAN-----



coordinates are SPCS Oregon, north, ft NAD83
elevations are in ft, below MLLW, data = Aug 2012, contour interval = 5 ft

US Army Corps of Engineers
Portland Distirct

MCR South Jetty Site - SJS (CWA 401)



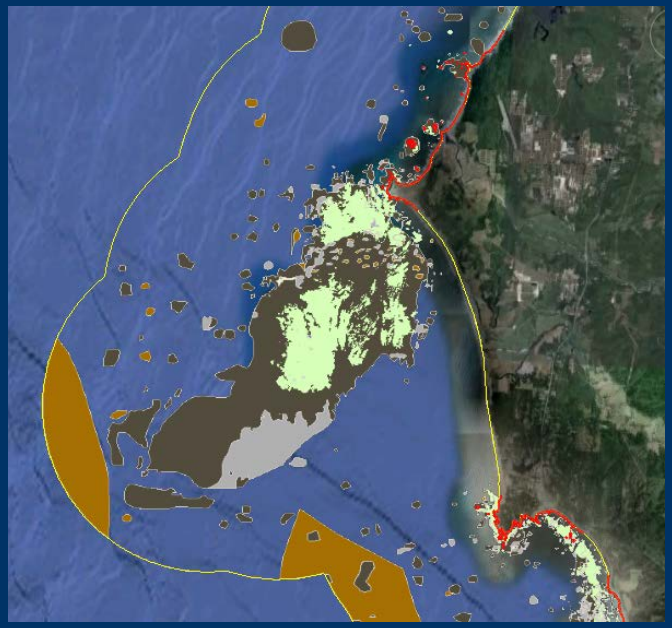
coordinates are SPCS Oregon, north, ft NAD83
elevations are in ft, below MLLW, data = 2005-2007

US Army Corps of Engineers
Portland Distirct

Summary

- Need to keep sediment in littoral system (to 60 ft depth contour) and feed the ebb shoal and shoreface at the MCR south jetty.
- Concerns with impacts to epibenthic fauna- demonstrated that we can dispose of material thinly and evenly, utilizing a conventional hopper dredge.
- We can place material in the nearshore zone and have nature re-distribute the sediment, at a significantly lower cost.

Oregon Department of Fish and Wildlife role in Corps actions in Oregon's Ocean



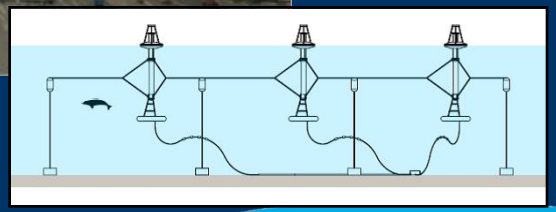
Dave Fox
Marine Resources Program, Assistant Manager
March 14, 2013

ODFW Mission and Role
Marine Resources Program

Mission: To protect and enhance Oregon's fish and wildlife and their habitats for use and enjoyment by present and future generations.

- Natural Resource Conservation
  - Resource protection
  - Fishery management
  - Regulatory permit review

- Natural Resource Use
  - Fisheries
  - Recreation



Recent Projects in Oregon (w/ACOE)

- Coastal Dredge Disposal Sites
  - Sites are critical to coastal economies but have great potential for environmental impact
  - Projects include:
    - Rogue River
    - Umpqua
    - Siuslaw
    - Yaquina
    - Brookings
- Mouth of Columbia River (MCR)
  - Negotiation over decades to retain dredged material in Oregon's nearshore
    - Mitigate coastal erosion, and related impacts to marine resources and coastal communities

Collaboration and Achievements to Date

Improving information; Science-based assessment

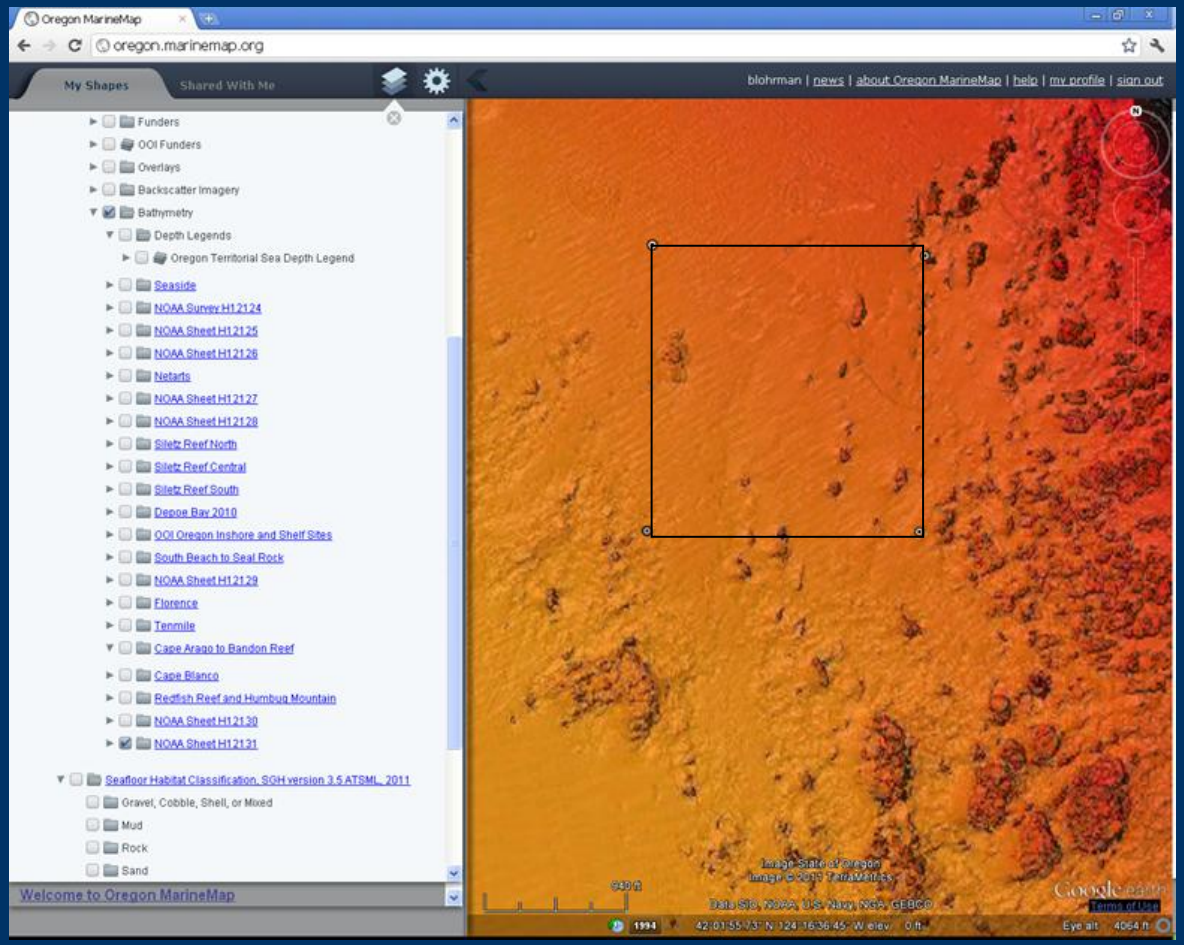
- Improve our understanding of nearshore resources
  - Coast wide: Gathering new and compiling existing resource information
  - Site-specific: Baseline and impact assessment (dredge disposal; renewable energy)
- Science-based biological data collection & analysis
  - Rigorous experimental design
  - Statistical power, analytical techniques
  - Make data available for public, agencies, own use
- Improve collaboration & leveraging
  - Gain knowledge from all human actions/projects/ developments to inform actions in other areas
  - Leverage funding/staff resources among agencies

ODFW efforts towards understanding Oregon's nearshore

- Nearshore Strategy (2006, 2012)
- Seafloor mapping and nearshore habitat assessment
- Oregon Marine Map (marine spatial planning)
- ShoreZone mapping
- Estuary assessment
- Marine reserve monitoring
- Human dimensions and stakeholder interactions

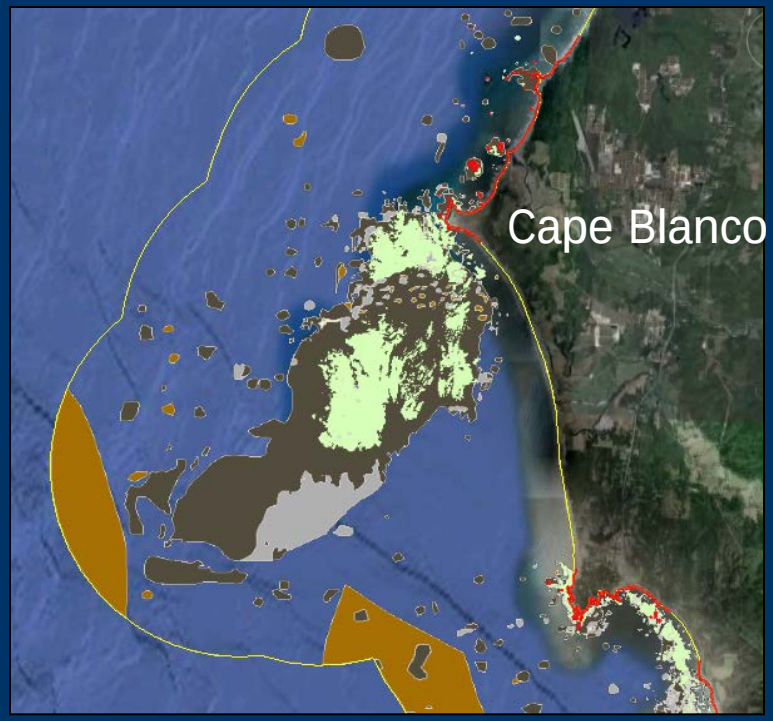
Site specific information – Seafloor habitat example

Brookings dredged material disposal site

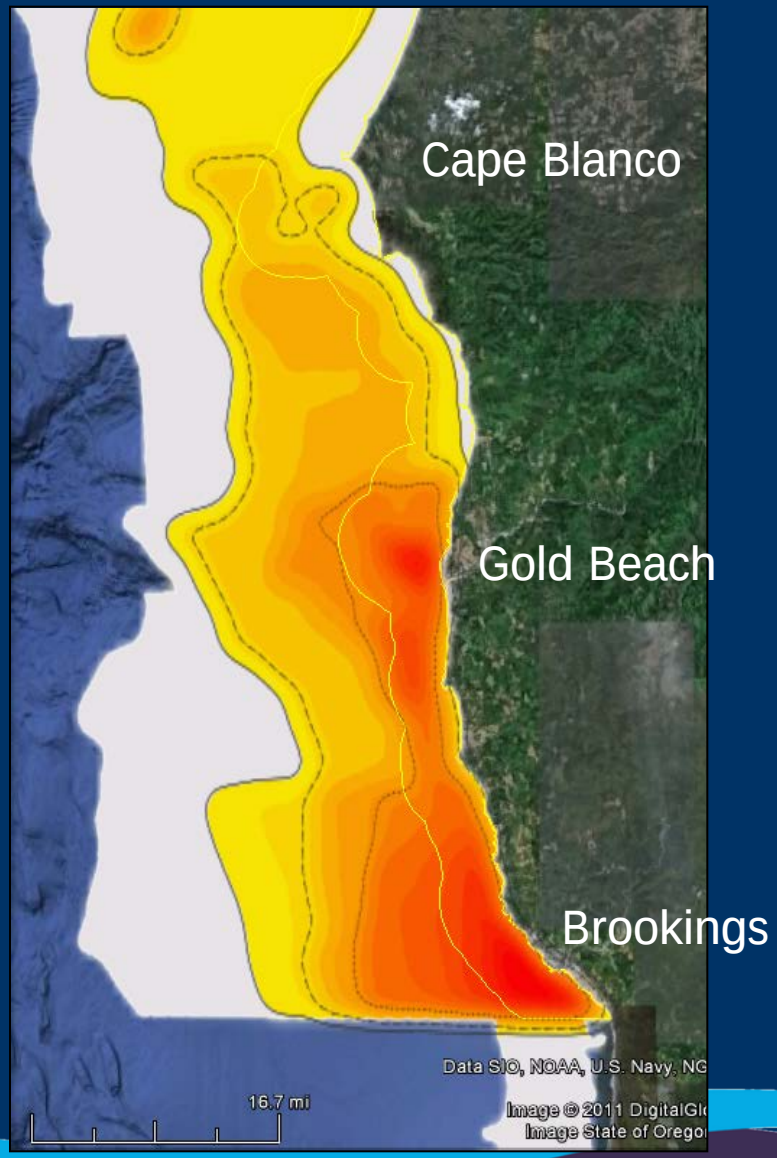


Biological Resources

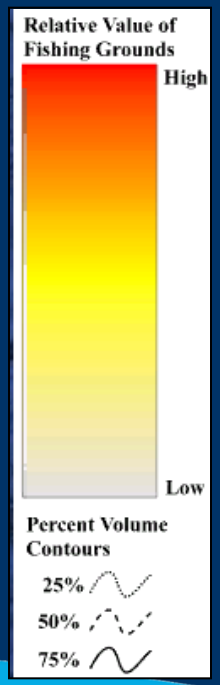
- Bottom habitat
- Kelp beds
- Rocky intertidal shoreline



Important Fishery Areas



Brookings/Gold Beach – combined fishing grounds for commercial Dungeness crab, salmon (troll), rockfish (fixed gear), and urchin, and sport Dungeness crab, Pacific halibut, rockfish, and salmon.



MCR Collaboration and Achievements

- ODFW has been intensively involved in dredge disposal issues for MCR for decades
- ODFW supported the LCSG process, and the RSMP signed in 2011
- Technical staff contributed time to develop 2012 sampling and problem-solve
- Collaborative science-based decision making

Goals for 2013 (and beyond)

- MCR – Conduct the sampling and analysis to move forward with site management
- Overall – Continue the philosophy of examining natural resource interactions using rigorous study designs and methods
- Continue collaborative decision-making and problem solving