



**CITY COUNCIL WORKSHOP
CITY HALL
389 CONGRESS STREET
CITY COUNCIL CHAMBERS**

DATE: March 2, 2020

TIME: 5:00 PM

AGENDA ITEMS:

1. Dredge Project



CITY OF PORTLAND
Economic Development
Gregory A. Mitchell, Director

Memorandum

To: Mayor and Members of the City Council

From: Greg Mitchell, Economic Development Director

Date: February 25, 2020

RE: Workshop Item for March 2, 2020: Update on Portland Harbor Dredge and Confined Aquatic Disposal (CAD) Cell – Funding, process, and next steps.

CC: Jon P. Jennings, City Manager
Bill Needelman, Waterfront Coordinator

Introduction

The City of Portland, with funding from the Maine Department of Transportation and partnership with the Portland Harbor Commission and the City of South Portland, has made significant progress toward dredging the piers, wharfs, and berthing resources of Portland Harbor. The March 2, 2020 City Council Workshop provides a timely opportunity to update Councilors on recent progress, funding developments, process and next steps. The Economic Development Committee and the Sustainability and Transportation Committees have been previously updated on the Portland Harbor Dredge Project but this is the first presentation on the project to the full City Council.

As further described below, the critical path timeline for this longstanding process has accelerated and keeping policy makers and stakeholders informed and engaged will be increasingly important moving forward.

Background

Most observers of Portland's waterfront are aware of the ongoing efforts by the Cities and Harbor Commission to dredge berthing and vessel support infrastructure along both shores of the Fore River.

In short, over 244,000 cubic yards of material needs to be removed from Portland Harbor to restore lost or degraded berthing areas. Given the environmental state of these sediments, disposal at sea is not an option and the project has identified a feasible site for a CAD cell to responsibly contain and sequester contaminated materials.

In aggregate, +/-108,000 cubic yards of material are estimated for dredging from the Portland side of the Fore river and +/-136 000 cubic yards of material anticipated from the South Portland waterfront. City owned public facilities in Portland alone (East End boat ramps, Ocean Gateway and the Amethyst lot, Maine State Pier, and the Portland Fish Pier) will contribute nearly 52,000 cubic yards of material. The South Portland “Portland Street Pier” is a minor contributor, estimated at +/-2300 cubic yards. The balance of sediment will come from private piers, boat yards, and marinas throughout the harbor.

The project will benefit 30 private commercial properties, supporting dozens of businesses, hundreds of jobs, thousands of vessels, and millions of dollars in annual economic activity. A comprehensive economic assessment of the direct and indirect value of the project and of the impacted properties is about to be undertaken to further refine the benefits of the project and the costs of inaction. This assessment will serve additionally as the basis for satisfying recent amendments to Chapter 8 of the City Code requiring ongoing periodic economic evaluations of the Portland Waterfront.

Additional information and background on the project is found at:

<http://www.portlandharbordredge.info/>

Project Scope and Details:

The Portland Harbor Dredge Project is a cooperative effort between public, private, and government agencies at all levels. A summary of the project scope and process is attached and will be presented at the workshop.

Current Status:

Following the June 2019 update to the EDC, the project team (through the consulting team at Stantec) filed applications with the State of Maine DEP for review under the Natural Resources Protection Act and US Army Corps of Engineers for review under the Clean Water Act and impacts to the federal channel (Section 408.) The application has been determined to be complete with additional material under development for the Army Corps 408 review. Initial feedback from the agencies is encouraging.

The project team continues to engage with stakeholders and is working with the review agencies on specific issues, such as eelgrass impacts. Filing and acceptance of environmental permits is a major milestone for the process and positions the project to be viewed as ready for funding.

The project team is additionally reaching out to pier owners and representatives within the dredging industry to generate support and awareness of the project.

Funding Strategy and Timeline:

Funding to Date:

As noted previously, dredging is expensive. To date, a mix of state, federal, and municipal funding has taken the process from concept to the permit application stage. US EPA

Brownfields funds awarded to the Portland Harbor Commission (with smaller amounts to the City of Portland) have totaled over \$400,000 targeted toward assessment and permitting of dredging the berthing resources themselves. The Portland Harbor Dredge project is the first Brownfields program project in the nation to fund a submerged lands assessment. MDOT has additionally contributed \$325,000 toward the CAD cell portion of the project. The City of Portland has allocated \$100,000 of current year Waterfront TIF funding to complete the process of permitting and permit review support. Additional funds from Portland, South Portland, and MDOT will continue to fund soft costs associated with funding applications as further explained below.

Future Project Costs

The above soft costs, while significant, represent only a fraction of the anticipated construction costs moving forward.

The project estimates assume 370,000 cubic yards of material to build the CAD cell (which must be over dredged to accommodate the contributing sediments) at an estimated \$30/cubic yard. The 244,000 cubic yards of material from the piers and wharfs is estimated to cost +/- \$40/cubic yard.

Including future soft costs for final engineering and design, bidding document prep, mobilization, and mitigation fees, the Portland Harbor dredge project is estimated at +/- \$30,000,000.

The project team is continuing to fine tune these numbers and the above estimates are intended to be conservative.

Funding Moving Forward:

Given the magnitude of the costs, the project team has always assumed a mix of funding sources needed to achieve the project outcomes. While public monies have carried the project to date, private pier and marina owners will be anticipated to contribute address the issues. Federal funds will be essential.

The general breakdown of funding will rely heavily on a federal grant from the USDOT “BUILD” program. BUILD grants, the successor to TIGER, require a significant match of non-federal monies. The State of Maine, through MDOT, has committed to support an application for the Portland Harbor Dredge project subject to an equivalent commitment from municipal and private funds. The project team has identified “tipping fees” as the equitable mechanism to distribute local share costs. In order to participate in the program, a contributing pier owner will need to pay per cubic yard of material to go into the CAD cell. Given that many pier and marina owners have thousands (or tens of thousands) of cubic yards of material, tipping fees will be significant for larger facilities.

The fee amount and distribution is still under discussion, but as much as \$20.40/cubic yard may be needed. At such a rate, the City of Portland may be subject to over \$1,000,000 in local tipping fees alone.

It should be noted that much, but not all, of the subtidal areas planned to receive dredging are owned by the State of Maine through the submerged lands program.

Assumed Funding Structure:

Federal BUILD program (formerly TIGER)	\$20,000,000 +/-
State of Maine Transportation Funds	\$5,000,000
Local Funds “Tipping fees”	\$5,000,000 Based on contributing sediment volume
	\$30,000,000 +/- Total

Funding Application Process:

Funding deadlines for the BUILD application are fast approaching. MDOT staff members have informed the City that a notice of funding opportunity for BUILD will be released any day with a 90 day window for application. In order to meet this timeline, a number of steps must be taken.

- **Convene a funding team** including the local project team members (Portland, South Portland, Harbor Commission, Stantec Consultants,) MDOT staff, MDOT grant writer. *Status: Complete*
- **Fund the grant writer** with a combination of local and state dollars. *Status: Complete*
- **Reach out to stake holders** – specifically to inform private pier and marina owners of the need to plan for tipping fee expenses. *Status: Underway (recent meetings by the Waterfront Working Group, Waterfront Alliance, the EDC, and future City Council meetings are part of this effort)*
- **Conduct an economic assessment** – The BUILD application will require an estimate of direct and indirect project benefits and costs. The City of South Portland has approved an interlocal agreement to participate and fund half of this study and the Portland City Council approved the proposal on Monday, February 3. Following an RFP, AECOM was selected to perform consulting services needed for the economic assessment . *Status: Underway*
- **Secure commitments for local funding and tipping fees** – The project team is exploring the grant requirement for documenting and securing local dollars in advance of the application. As noted above, outreach to private pier owners and other interested parties is continuing. *Status: Under discussion*
- **BUILD grant application – Anticipated for early May**. Waterfront property owners, vessel owners, environmental organizations, and other stakeholders will be asked to support this project with letters of support and data needed for the economic assessment. *Status: Underway.*

Next Steps

The BUILD grant application will require an all hands on deck effort from all Portland Harbor Dredge project team members. Given the necessity of private property participation, solid communication between the project team and all stakeholders is essential.

The Economic Development Committee received a briefing at its February 18 meeting, and the Sustainability and Transportation Committee will also receive a briefing at its February 26 meeting.

Attachments

- Portland Harbor Dredge Summary Presentation

Portland Harbor Dredge Update

Portland City Council Workshop

March 2, 2020



Project Partners



An aerial photograph of a coastal town, likely in the Pacific Northwest, showing a dense residential area and a waterfront with numerous docks and boats. Red polygons are overlaid on the map, indicating areas where dredging is needed. These polygons are concentrated along the waterfront, particularly around the docks and in the channels. A blue star is placed on one of the red polygons in the lower-left quadrant of the map. The text 'Fore River' is visible in blue on the water. The title 'Where is dredging needed?' is in the top right corner, and a bulleted list is in a white box on the right side.

Where is dredging needed?

- 32 Property Owners
- 60+ dredge areas
- Goal of 100% participation



Fore River, 2018

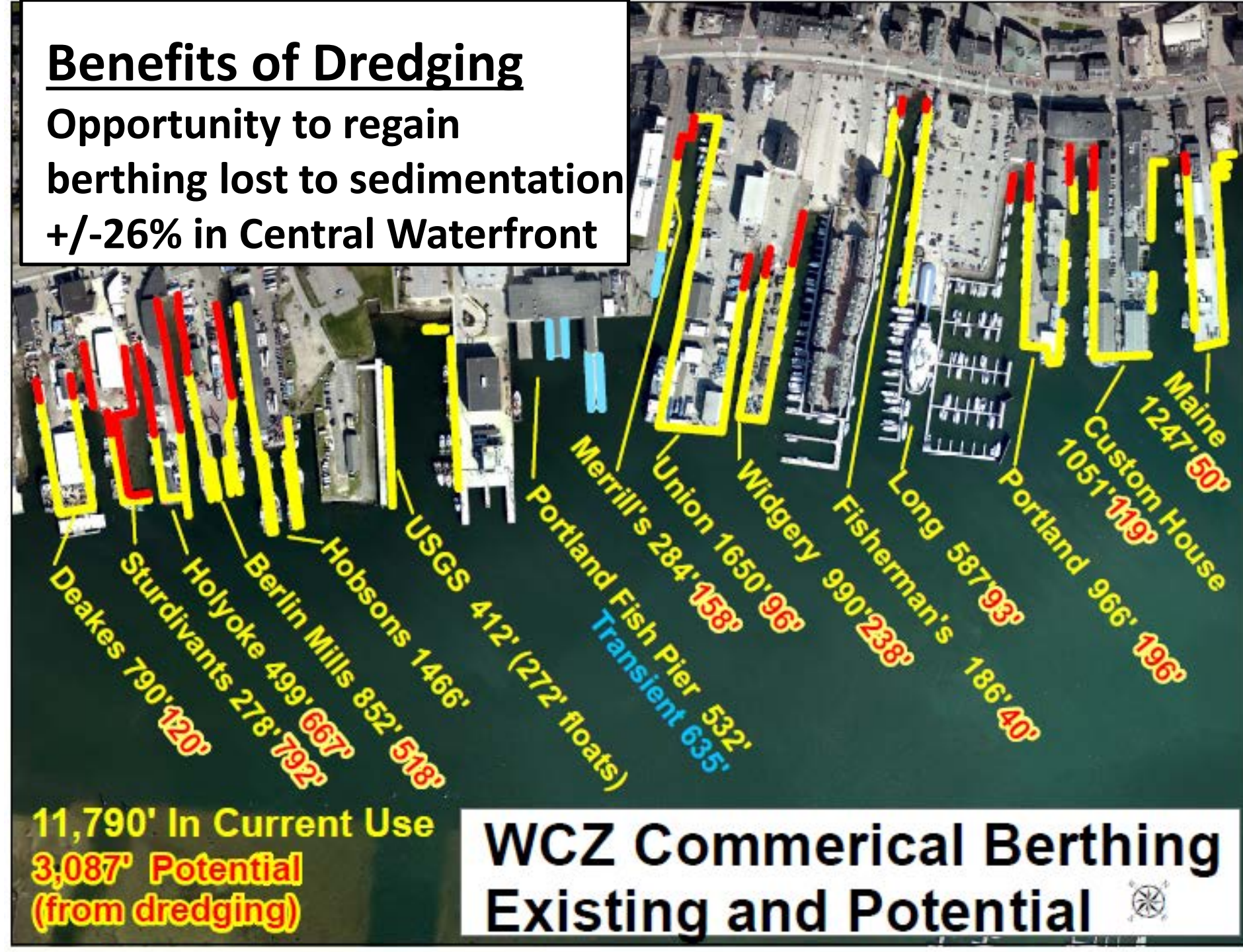
Benefits of Dredging

- Improved and expanded Berthing
- Cleaner Environment



Benefits of Dredging

Opportunity to regain
berthing lost to sedimentation
+/-26% in Central Waterfront



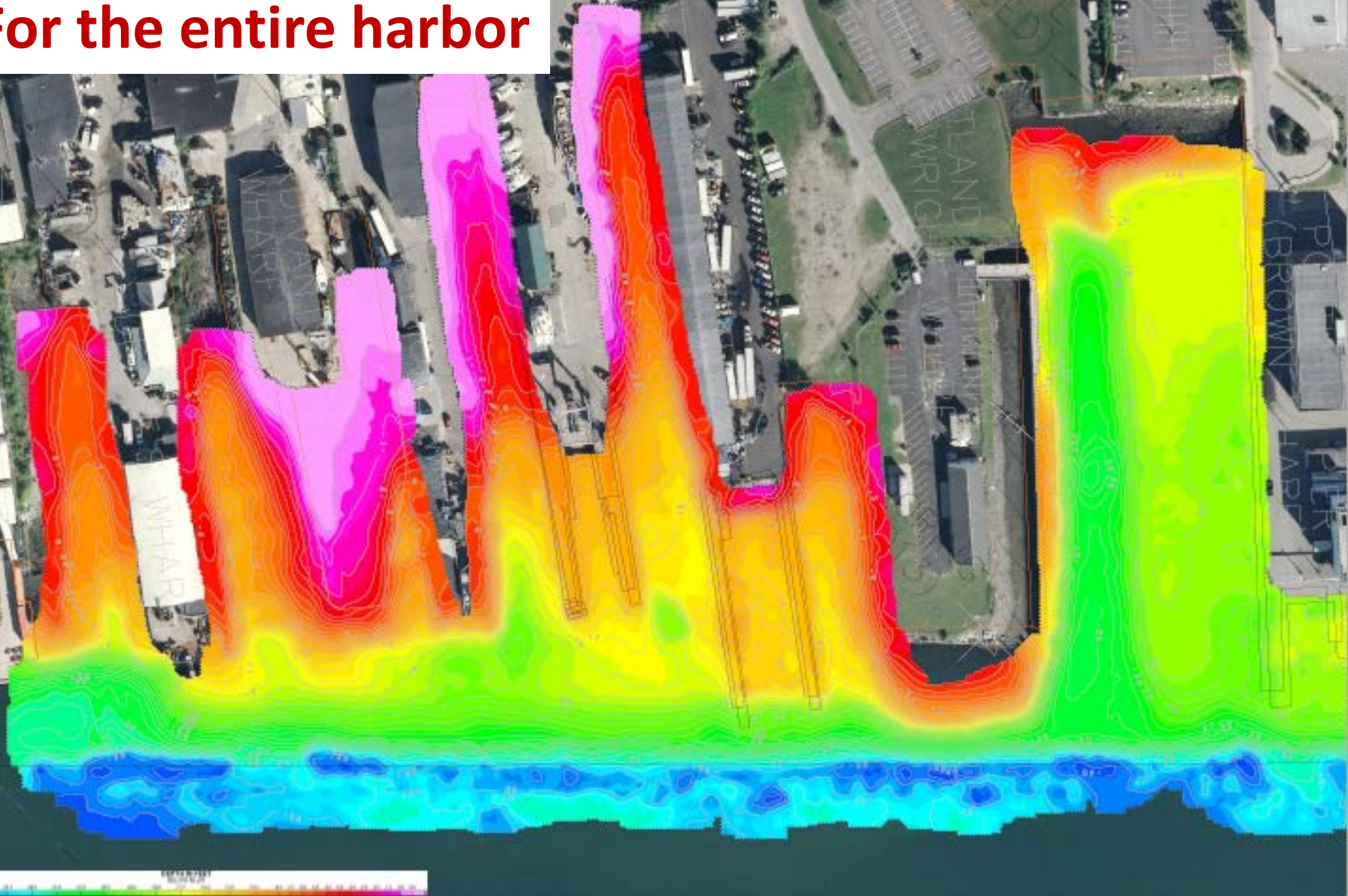
Dredge areas

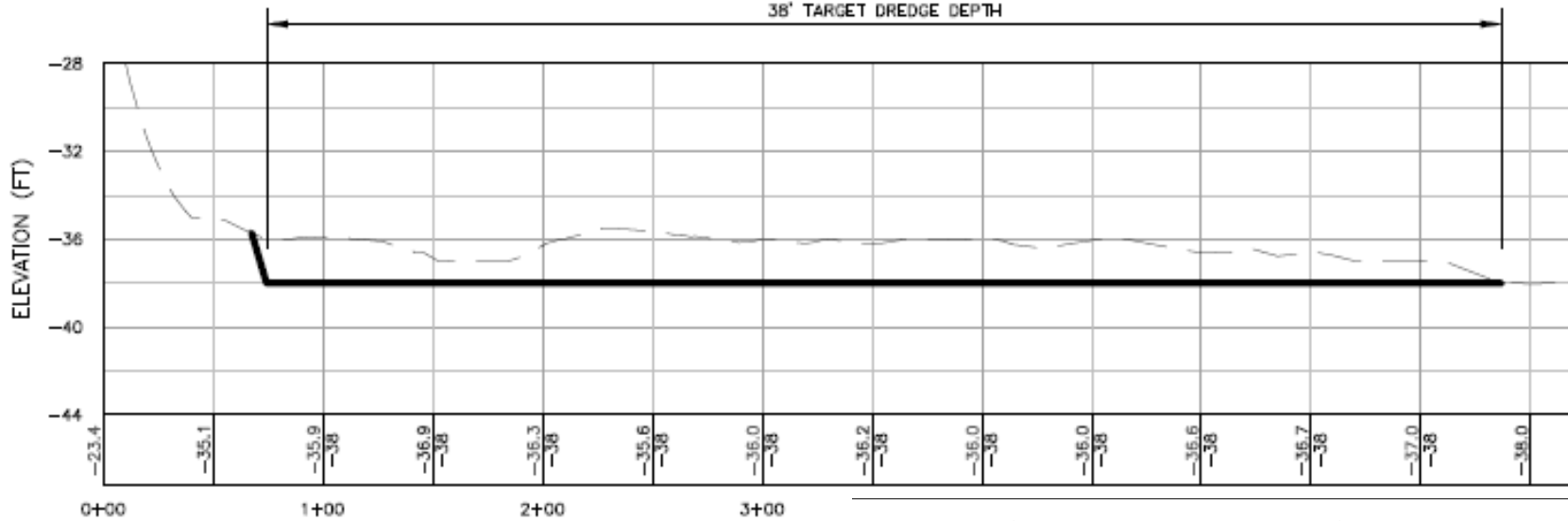
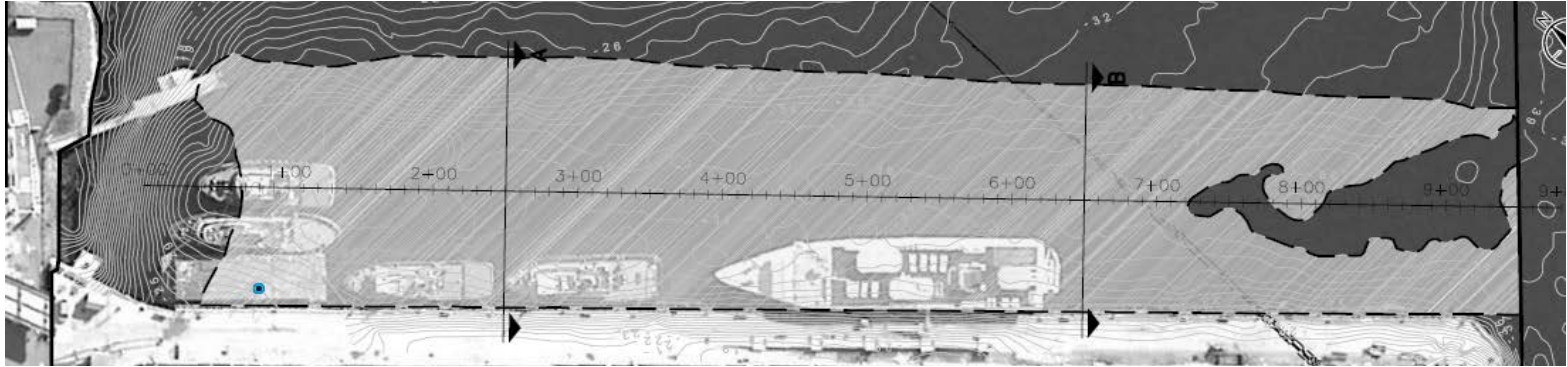
- 32 pier/waterfront owners
- 3:1 Side slopes away from piers
- 1 foot overdredge
- Dredge footprints/volumes for permitting and CAD sizing

Disposal/CAD

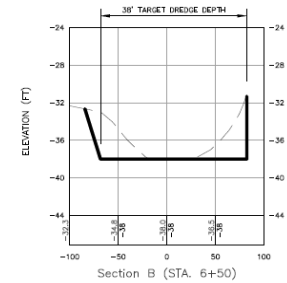
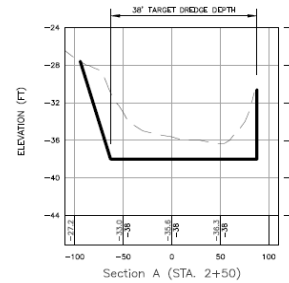
- Designed for +/-270,000 yards

New Bathymetry For the entire harbor

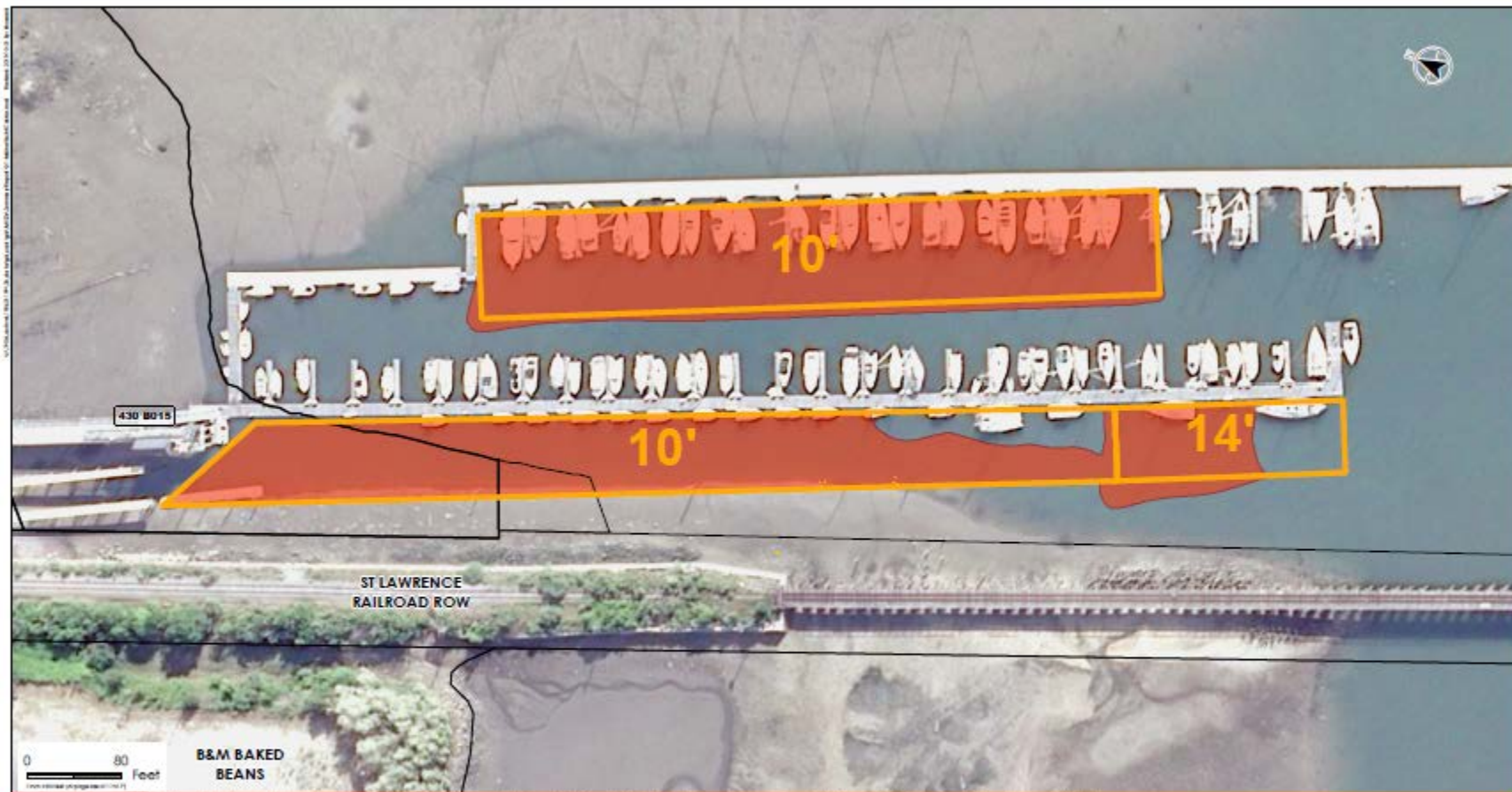




Sample Design: Maine State Pier



SECTION(S) - MAINE STATE PIER
HORIZONTAL SCALE: 1"=100'
VERTICAL SCALE: 1"=10'



Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



30 Park Drive
Topsham, ME USA 04086
Phone (207) 729-1199

01-MaineYachtCenter.dwg



Legend

- Stormwater Outfall
- 1' Bathymetric Contour
- Wharf Owner Tax Parcel and Map/Lot
- Tax Parcel
- Approximate Submerged Lands Regulatory Limit
- Dredge Limit and Target Depth
- Estimated Dredge Area

Owner	Map Area	Map Book Lot	Estimated Dredge Volume (cu yd)
Maine Yacht Services, LLC	Maine Yacht Service	430-B015	15,035

Notes:

1. Coordinate System: NAD 1983 StatePlane Maine West FIPS 1002 Feet
2. Hydrographic bathymetric survey performed by Asar Companies, LLC, between November 28, 2016 through December 1, 2016.
3. Hydrographic survey datum is referenced to Mean Lower Low Water (MLLW) 1985-2001 tidal epoch. The correction from NAVD83 to MLLW is 5.25 feet for Casco Bay.
4. Clevation assumptions were made to the existing bathymetric surfaces where elevation data was missing to complete proposed dredge footprints. Results in those areas is approximate.
5. An additional 1' overdrift has been applied to each proposed dredge area.
6. 2015 coastal Casco Bay aerial orthophoto provided by the State of Maine, Maine Office of GIS and Maine GeoLibrary Board.

Client/Project

Portland Harbor Commission
Portland Harbor Brownfields
Dredging Project
Figure No.

Title

Maine Yacht Center, LLC
Proposed Dredge
10/1/2019

105401199



Stantec Inc. assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Stantec
30 Park Drive
Topsham, ME USA 04086
Phone (207) 729-1199



Legend

- Stormwater Outfall
- 1' Bathymetric Contour
- Wharf Owner Tax Parcel and Map/Lot
- Tax Parcel
- Approximate Submerged Lands Regulatory Limit
- Dredge Limit and Target Depth
- Estimated Dredge Area

Owner	Parcel	Map, Book, Lot	Estimated Dredge Volume (cu yd)
City of Portland	East End Public Launch	004 C002, 001 X002	7,054

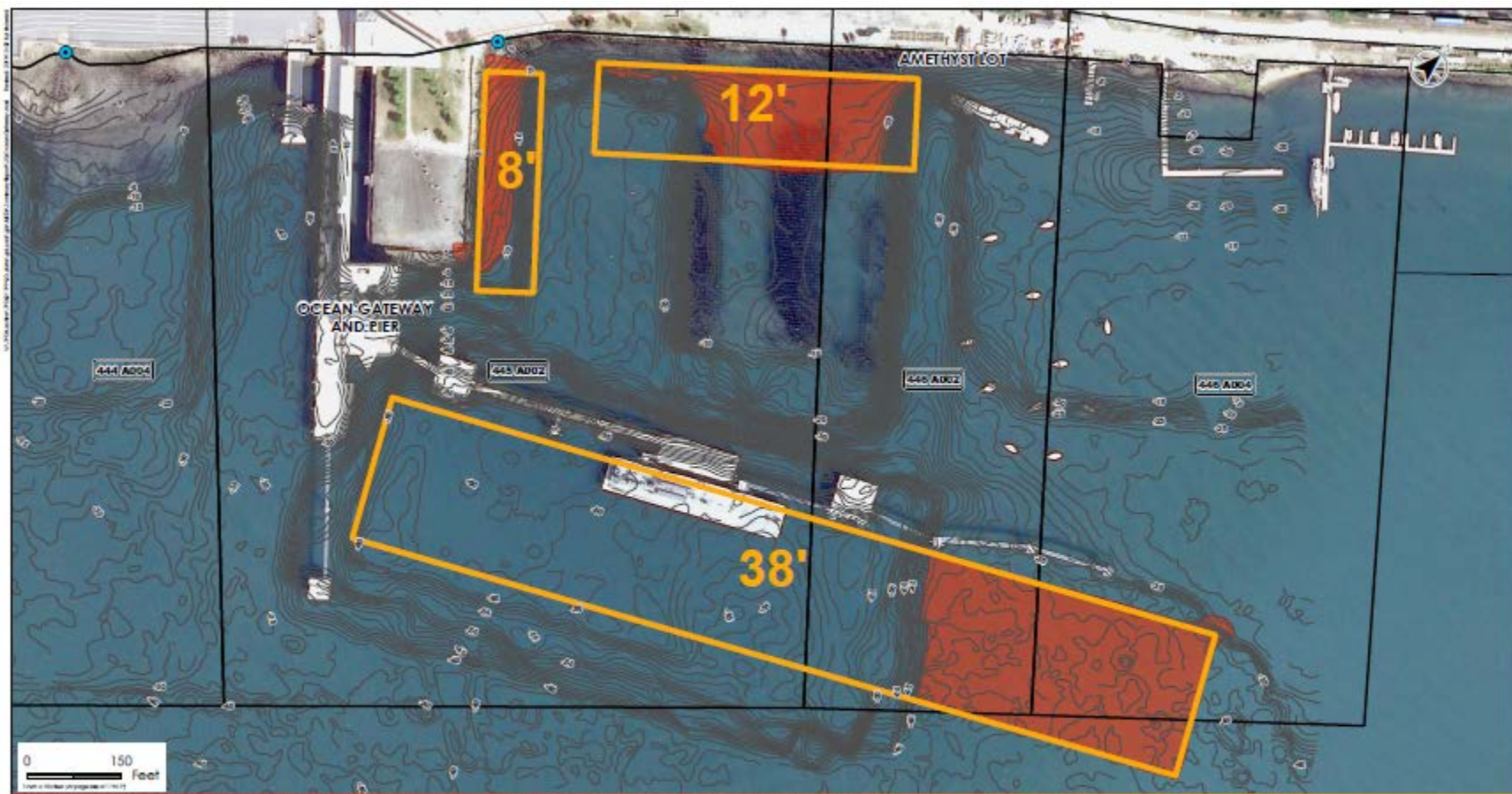
Notes:

- Coordinate System: NAD 1983 StatePlane Maine West FIPS 1002 Feet
- Hydrographic bathymetric survey performed by Apex Companies, LLC, between November 26, 2016 through December 1, 2016.
- Hydrographic survey datum is referenced to Mean Lower Low Water (MLLW) 1985-2001 tidal epoch. The conversion from NAVD83 to MLLW is 5.25 feet for Casco Bay.
- Elevation assumptions were made to the existing bathymetric surfaces where elevation data was missing to complete proposed dredge footprints. Results in those areas is approximate.
- An additional 1' overdredge has been applied to each proposed dredge area.
- 2016 coastal Casco Bay aerial orthophotos provided by the State of Maine, Maine Office of GIS and Maine GeoLibrary Board.

Client/Project
Portland Harbor Commission
Portland Harbor Brownfields
Dredging Project
Figure No.

Title
**East End Beach
Proposed Dredge**
10/1/2019

05401199



05401199



30 Park Drive
Topsham, ME USA 04086
Phone (207) 729-1199

28-OceanGateway.mxd



Legend

- Stormwater Outfall
- 1' Bathymetric Contour
- Wharf Owner Tax Parcel and Map/Lot
- Tax Parcel
- Approximate Submerged Lands Regulatory Limit
- Dredge Limit and Target Depth
- Estimated Dredge Area

Owner	Parcel ID	Map Book	Lot	Estimated Dredge Volume (cu yd)
City of Portland	008-0001	008-0001	008-0001	18,000

Notes:

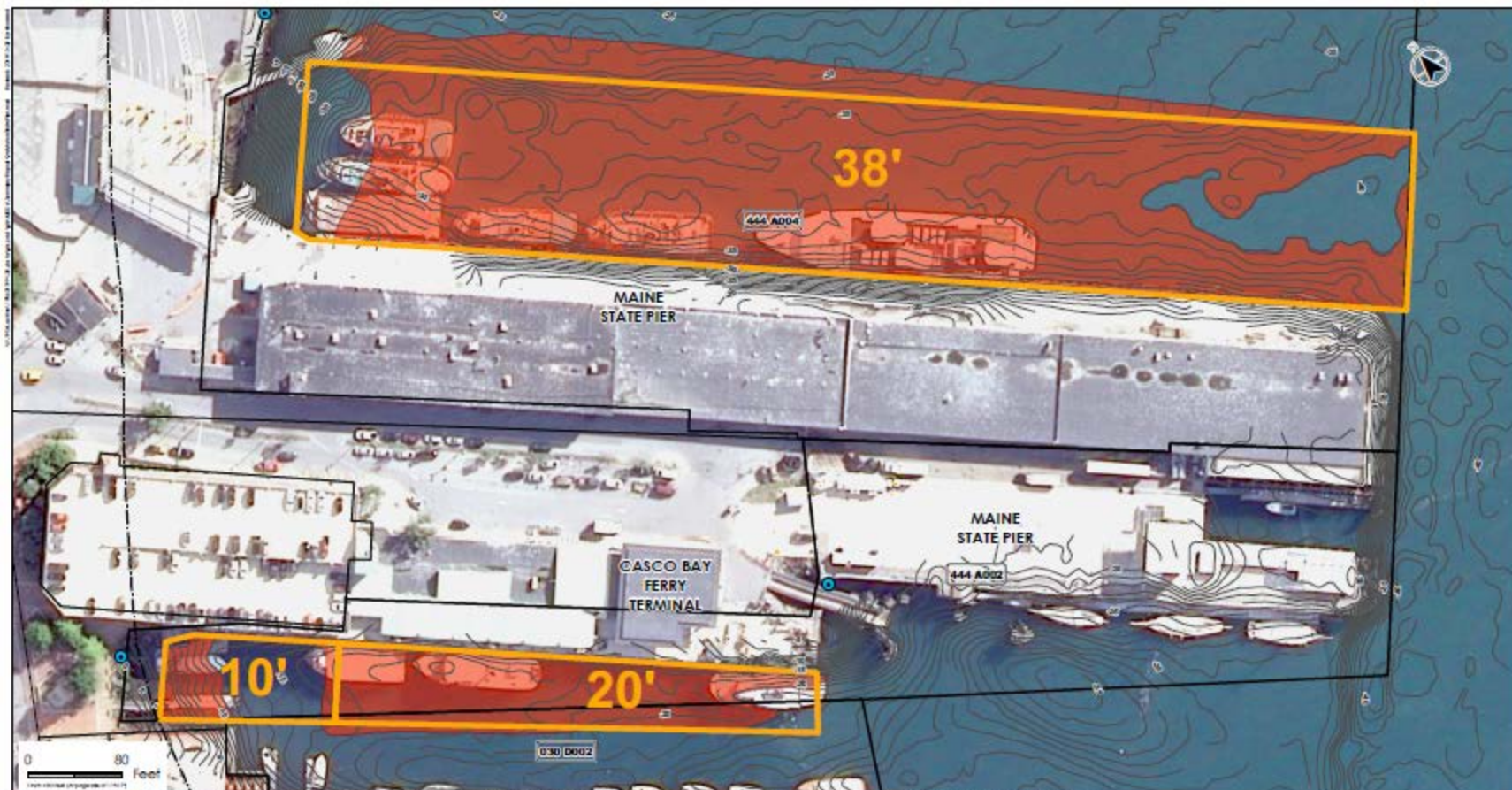
1. Coordinate System: NAD 1983 StatePlane Maine West FIPS 1602 Feet
2. Hydrographic bathymetric survey performed by Apex Companies, LLC, between November 26, 2015 through December 1, 2016.
3. Hydrographic survey datum is referenced to Mean Lower Low Water (MLLW) 1985-2001 tidal epoch. The correction from NAVD83 to MLLW is 5.25 feet for Casco Bay.
4. Elevation assumptions were made to the existing bathymetric surfaces where elevation data was missing to complete proposed dredge footprint. Results in those areas is approximate.
5. An additional 1' overdredge has been applied to each proposed dredge area.
6. 2016 coastal Casco Bay aerial orthophotos provided by the State of Maine, Maine Office of GIS and Maine GeoLibrary Board.

Client/Project

Portland Harbor Commission
Portland Harbor Brownfields
Dredge Project
Figure No.

The
**Amethyst Lot/Ocean Gateway
Proposed Dredge**

10/2/2019



Stantec Inc. does not warrant or accept any responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents from any and all claims relating to any error in the content or production of the data.

Stantec
30 Park Drive
Topsham, ME USA 04086
Phone (207) 729-1199

Dr:Michal@stantec.com



Legend

- Stormwater Outfall
- 1' Bathymetric Contour
- Wharf/Owner Tax Parcel and Map/Lot
- Tax Parcel
- Approximate Submerged Lands Regulatory Limit
- Dredge Limit and Target Depth
- Estimated Dredge Area

Client	Permit	Map Sheet	Estimated Dredge Volume (cu yd)
City of Portland	Maine State Pier	ADA AD04, 002	20,808

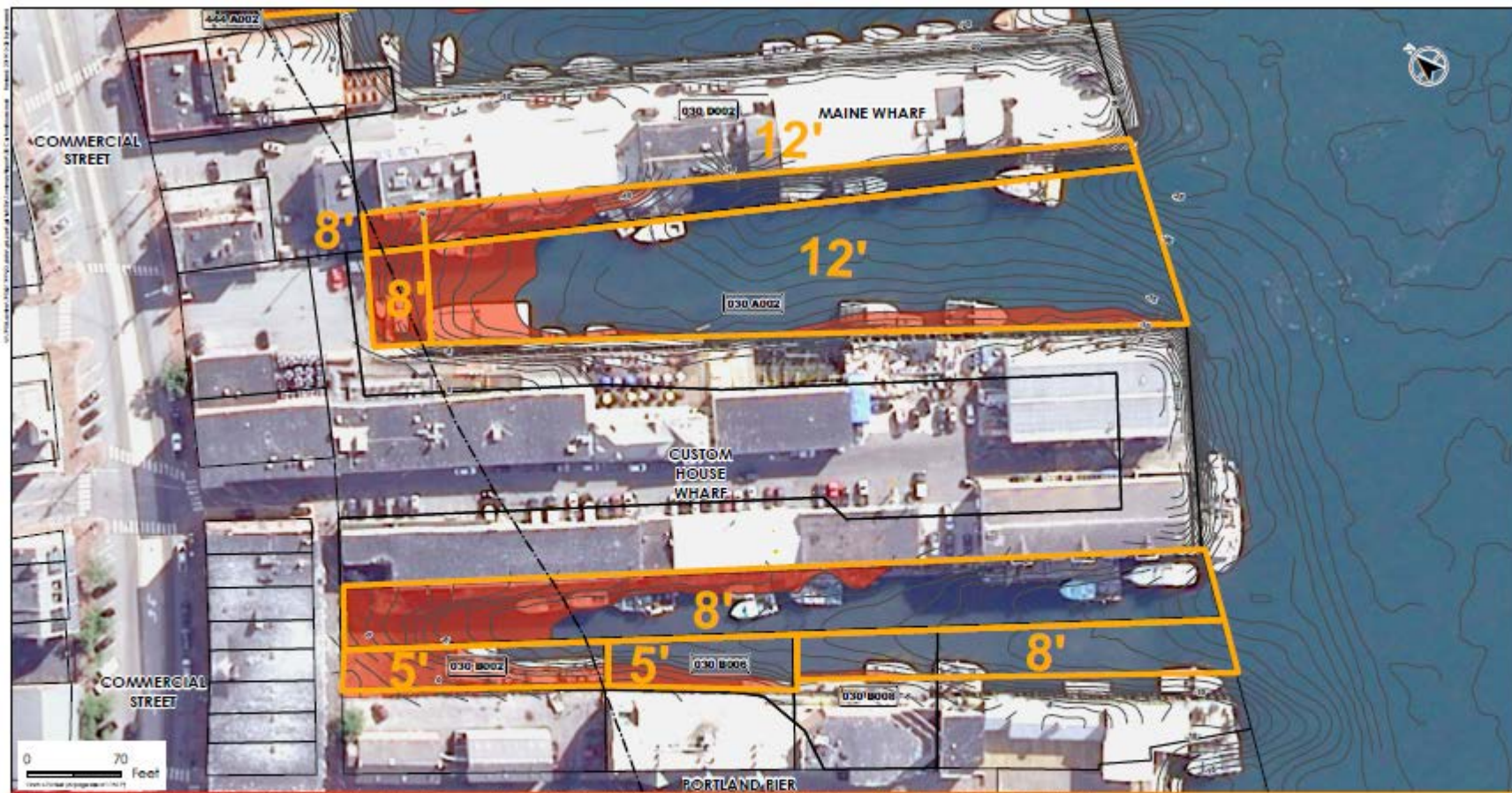
Notes:

- Coordinate System: NAD 1983 StatePlane Maine West FIPS 1002 Feet
- Hydrographic bathymetric survey performed by Apex Companies, LLC, between November 29, 2016 through December 1, 2016.
- Hydrographic survey datum is referenced to Mean Lower Low Water (MLLW) 1985-2001 tidal epoch. The correction from NAVD83 to MLLW is 5.25 feet for Casco Bay.
- Elevation assumptions were made to the existing bathymetric surface where elevation data was missing to complete proposed dredge footprint.
- Results in those areas is approximate.
- An additional 1' overdredge has been applied to each proposed dredge area.
- 2016 coastal Casco Bay aerial orthophoto provided by the State of Maine, Maine Office of GIS and Maine GeoLibrary Board.

Client/Project
Portland Harbor Commission
Portland Harbor Brownfields
Dredge Project
Figure No.

Title
**Maine State Pier
Proposed Dredge**
10/2/2019

105021179



Disclaimer: Stantec assumes no responsibility for data supplied by electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from approval of all knowledge in any way from the content or position of the data.

Stantec
30 Park Drive
Topsham, ME USA 04086
Phone (207) 729-1199

SB-C:\Users\jphillips\Documents



Legend

Stormwater Outfall	Approximate Submerged Lands Regulatory Line
1' Bathymetric Contour	Dredge Limit and Target Depth
Wharf Owner Tax Parcel and Map/Lot	Estimated Dredge Area
Tax Parcel	

Parcel	Proposed	Proposed	Proposed	Estimated Dredge Volume (CY)
444 A002	444 A002	444 A002	444 A002	1,200
030 B002	030 B002	030 B002	030 B002	1,200
030 B003	030 B003	030 B003	030 B003	1,200
030 B004	030 B004	030 B004	030 B004	1,200
030 B005	030 B005	030 B005	030 B005	1,200
030 B006	030 B006	030 B006	030 B006	1,200
030 B007	030 B007	030 B007	030 B007	1,200
030 B008	030 B008	030 B008	030 B008	1,200
030 B009	030 B009	030 B009	030 B009	1,200
030 B010	030 B010	030 B010	030 B010	1,200

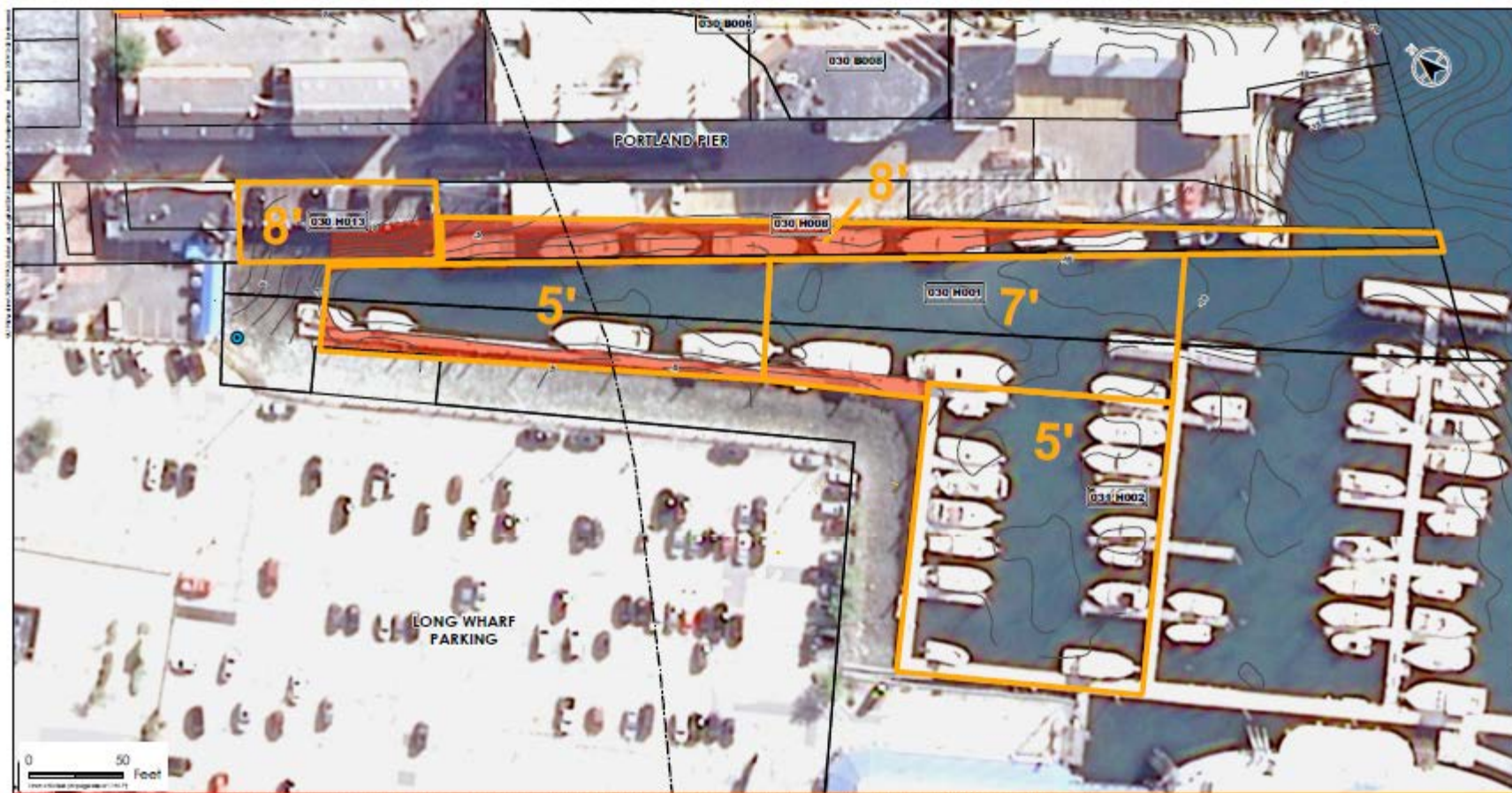
Notes:

1. Coordinate System: NAD 1983 StatePlane Maine West FIPS 1000 Feet
2. Hydrographic bathymetric survey performed by Apex Companies, LLC, between November 29, 2016 through December 1, 2016.
3. Hydrographic survey datum is referenced to Mean Lower Low Water (MLLW) 1985-2001 tidal epoch. The correction from NAVD83 to MLLW is 5.25 feet for Casco Bay.
4. Elevation assumptions were made to the existing bathymetric surface where elevation data was missing to complete proposed dredge footprint.
5. Results in these areas is approximate.
6. An additional 1' overdredge has been applied to each proposed dredge area.
7. 2013 coastal Casco Bay aerial orthophotos provided by the State of Maine, Maine Office of GIS and Maine GeoLibrary Board.

Client/Project
Portland Harbor Commission
Portland Harbor Brownfields
Dredge Project
Figure No.:

Title
Maine/Custom House Wharf
Portland Pier (N) Proposed Dredge
10/2/2019

105401199



Stantec Inc. assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims, demands or actions, in any way, from the content or position of the data.



30 Park Drive
Topsham, ME USA 04086
Phone (207) 729-1199

delivered as a pdf



Legend

	Stormwater Outfall		Approximate Submerged Lands Regulatory Limit
	1' Bathymetric Contour		Dredge Limit and Target Depth
	Wharf Owner Tax Parcel and Map Lot		Estimated Dredge Area
	Tax Parcel		

Notes

1. Coordinate System: NAD 1983 StatePlane Maine West FIPS 1002 Feet
2. Hydrographic bathymetric survey performed by Apex Companies, LLC, between November 26, 2016 through December 1, 2016.
3. Hydrographic survey datum is referenced to Mean Lower Low Water (MLLW) 1983-2001 tidal epoch. The conversion from NAVD83 to MLLW is 5.25 feet for Casco Bay.
4. Elevation assumptions were made to the existing bathymetric surface where elevation data was missing to complete proposed dredge footprint. Results in those areas is approximate.
5. An additional 1' overdredge has been applied to each proposed dredge area.
6. 2015 coastal Casco Bay aerial orthophotos provided by the State of Maine, Maine Office of GIS and Maine GeoLibrary Board.

Client/Project

Portland Harbor Commission
Portland Harbor Brownfields
Dredge Project

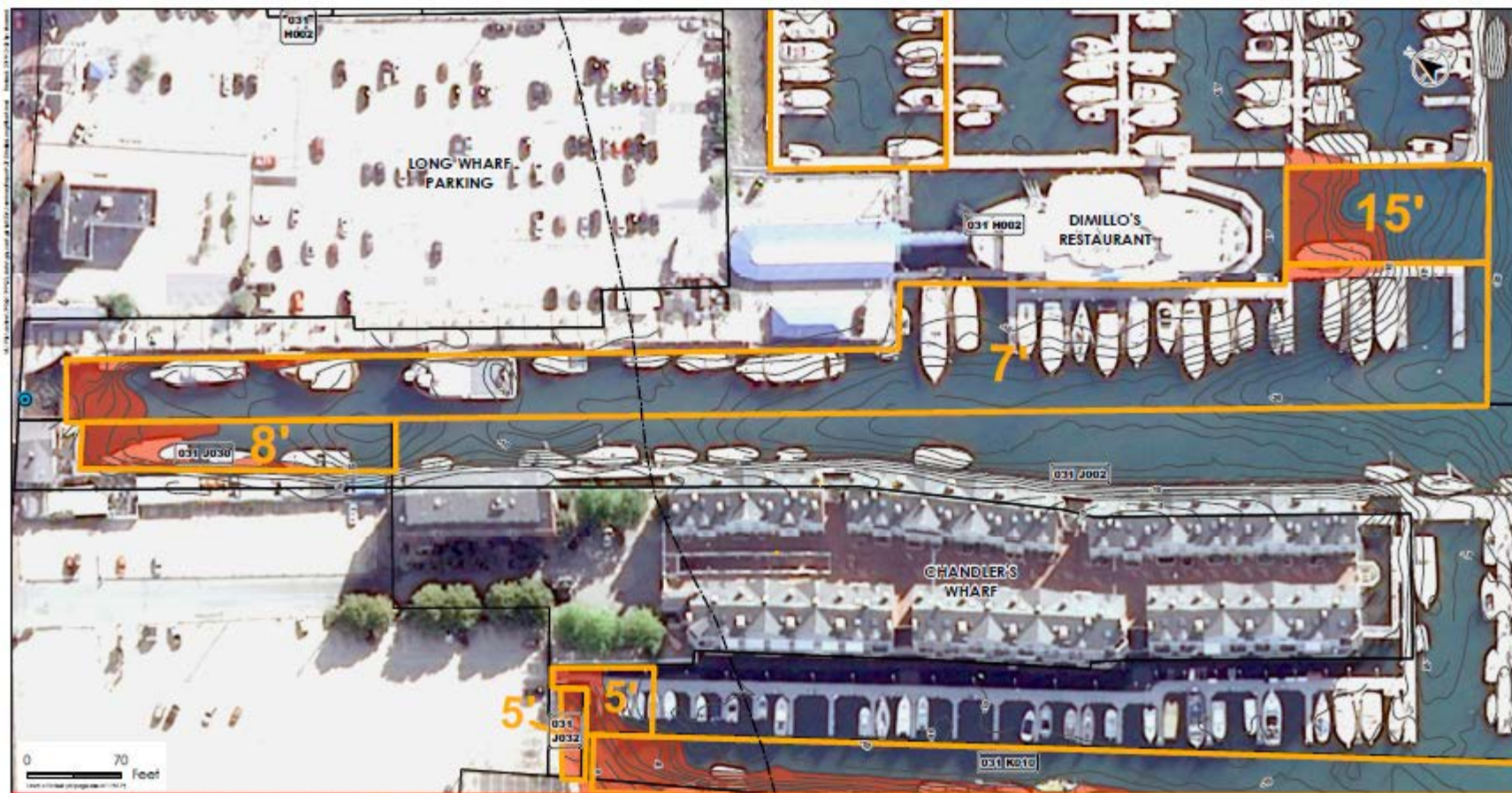
Figure No.

Title

Portland Pier (s)/Long Wharf
Proposed Dredge

10/2/2019

105421199



Stantec Inc. assumes no responsibility for data supplied to electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient agrees to indemnify, defend, hold harmless, and pay all costs and expenses, from any and all claims arising in any way from the content or production of the data.

Stantec
30 Park Drive
Topsham, ME USA 04086
Phone (207) 729-1199

01-Dimillo/Long/Wharf.mxd



Legend			
	Stormwater Outfall		Approximate Submerged Lands Regulatory Line
	1' Bathymetric Contour		Dredge Limit and Target Depth
	Wharf Owner Tax Parcel and Map/Lot		Estimated Dredge Area
	Tax Parcel		

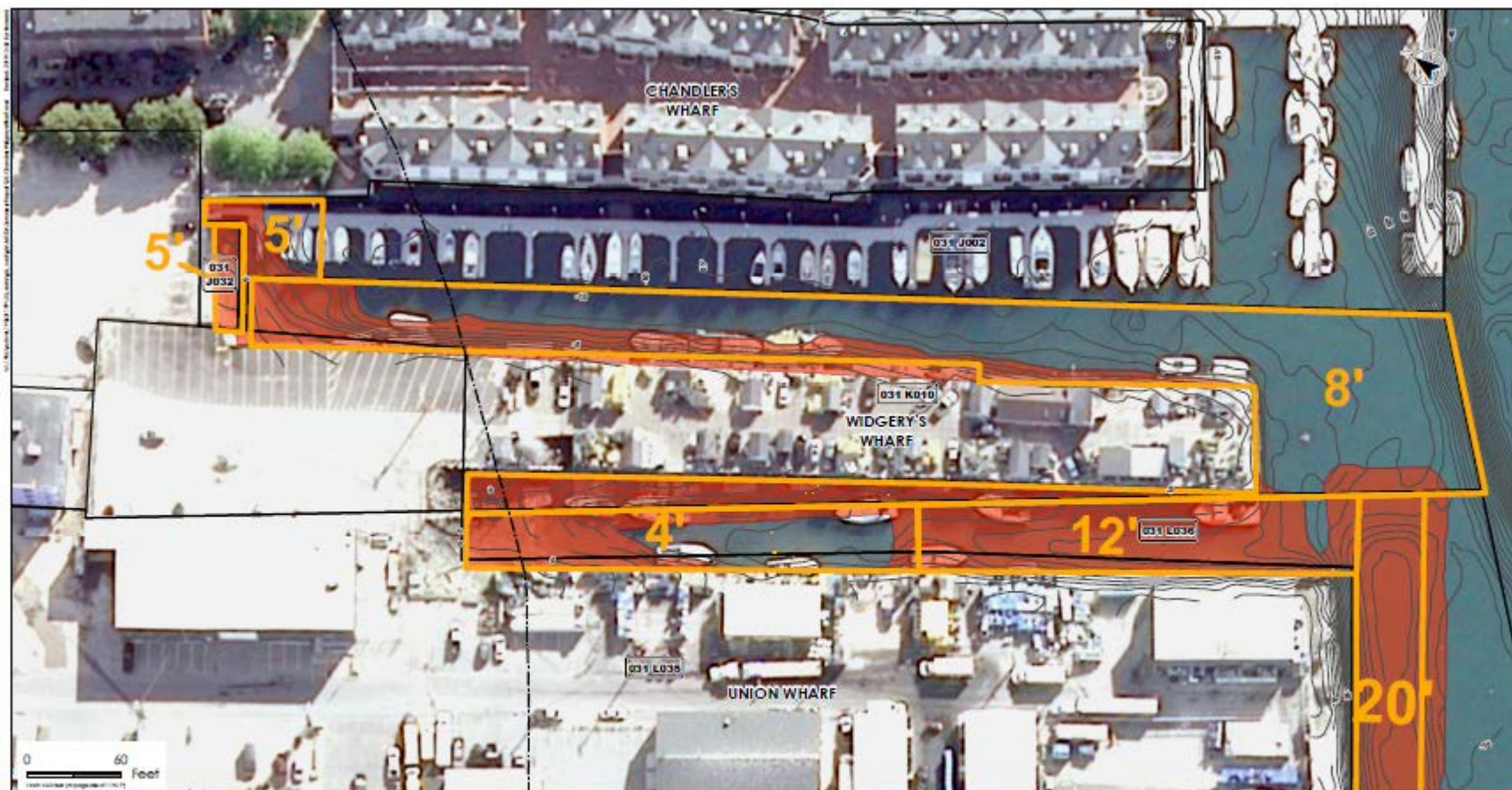
Owner	Per/Dist	Map Area (sq. ft.)	Estimated Dredge Volume (cu yd)
Charles Alfred W. Al. Trust	Long Wharf/Dimillo's	031 M002, 031 J002	3,533
Stephen and Linda Diamond P's	Chandler's Wharf	031 B013	315
BBP LLC	Chandler's Wharf	031 B015, 031 B012	992

Notes:
1. Coordinate System: NAD 1983 StatePlane Maine West FIPS 1902 Feet
2. Hydrographic bathymetric survey performed by Apex Companies, LLC, between November 29, 2016 through December 1, 2016.
3. Hydrographic survey datum is referenced to Mean Lower Low Water (MLLW) 1985-2001 tidal epoch. The correction from NAVD83 to MLLW is 5.25 feet for Casco Bay.
4. Elevation assumptions were made to the existing bathymetric surfaces where elevation data was missing to complete proposed dredge footprint.
5. Results in those areas is approximate.
6. An additional 1' overdredge has been applied to each proposed dredge area.
7. 2013 coastal Casco Bay aerial orthophoto provided by the State of Maine, Maine Office of GIS and Maine GeoLibrary Board.

Client/Project
Portland Harbor Commission
Portland Harbor Brownfields
Dredge Project
Figure No.

Title
**Dimillo's/Long and Chandler's
Wharf Proposed Dredge**
10/2/2019

105401199



Stantec Inc. assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Stantec
30 Park Drive
Topsham, ME USA 04086
Phone (207) 729-1199

08-Chandler/Whidger/Union Wharf.mxd



Legend

- Stormwater Outfall
- 1' Bathymetric Contour
- Wharf Owner Tax Parcel and Map/lot
- Tax Parcel
- Approximate Submerged Lands Regulatory Limit
- Dredge Limit and Target Depth
- Estimated Dredge Area

Parcel	Parcel ID	Area (Acres)	Estimated Dredge Volume (cu yd)
Whidger's Wharf Inc.	031 K010	0.001	0.001
Whidger's Wharf	031 L036	0.001	0.001
Union Wharf Inc.	031 L035	0.001	0.001

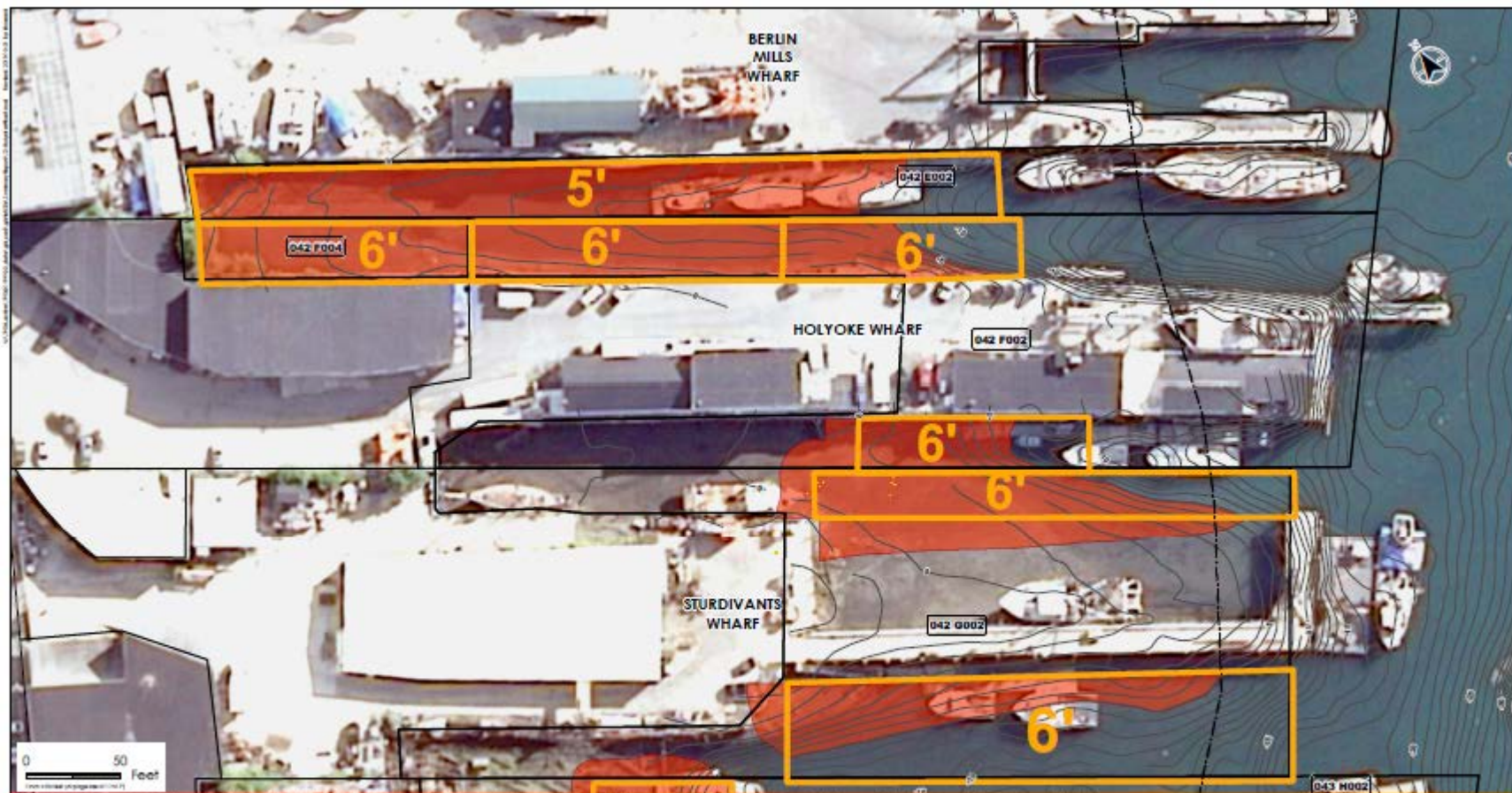
Notes:

- Coordinate System: NAD 1983 StatePlane Maine West FIPS 1000 Feet
- Hydrographic bathymetric survey performed by Apex Companies, LLC, between November 26, 2016 through December 1, 2016.
- Hydrographic survey datum is referenced to Mean Lower Low Water (MLLW) 1985-2001 tidal epoch. The correction from NAVD83 to MLLW is 5.25 feet for Casco Bay.
- Elevation assumptions were made to the existing bathymetric surface where elevation data was missing to complete proposed dredge footprint.
- An additional 1' overdredge has been applied to each proposed dredge area.
- 2018 coastal Casco Bay aerial orthophotos provided by the State of Maine, Maine Office of GIS and Maine GeoLibrary Board.

Client/Project
Portland Harbor Commission
Portland Harbor Brownfields
Cleanup Project
Figure No.

Title
Whidger's/Union Wharf (N)
Proposed Dredge
10/2/2019

105401199



Disclaimer: Stantec assumes no responsibility for data supplied to other levels of detail. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all liability in any way from the content or provision of the data.

Stantec
30 Park Drive
Topsham, ME USA 04086
Phone (207) 729-1199

10/holyokewharf.mxd



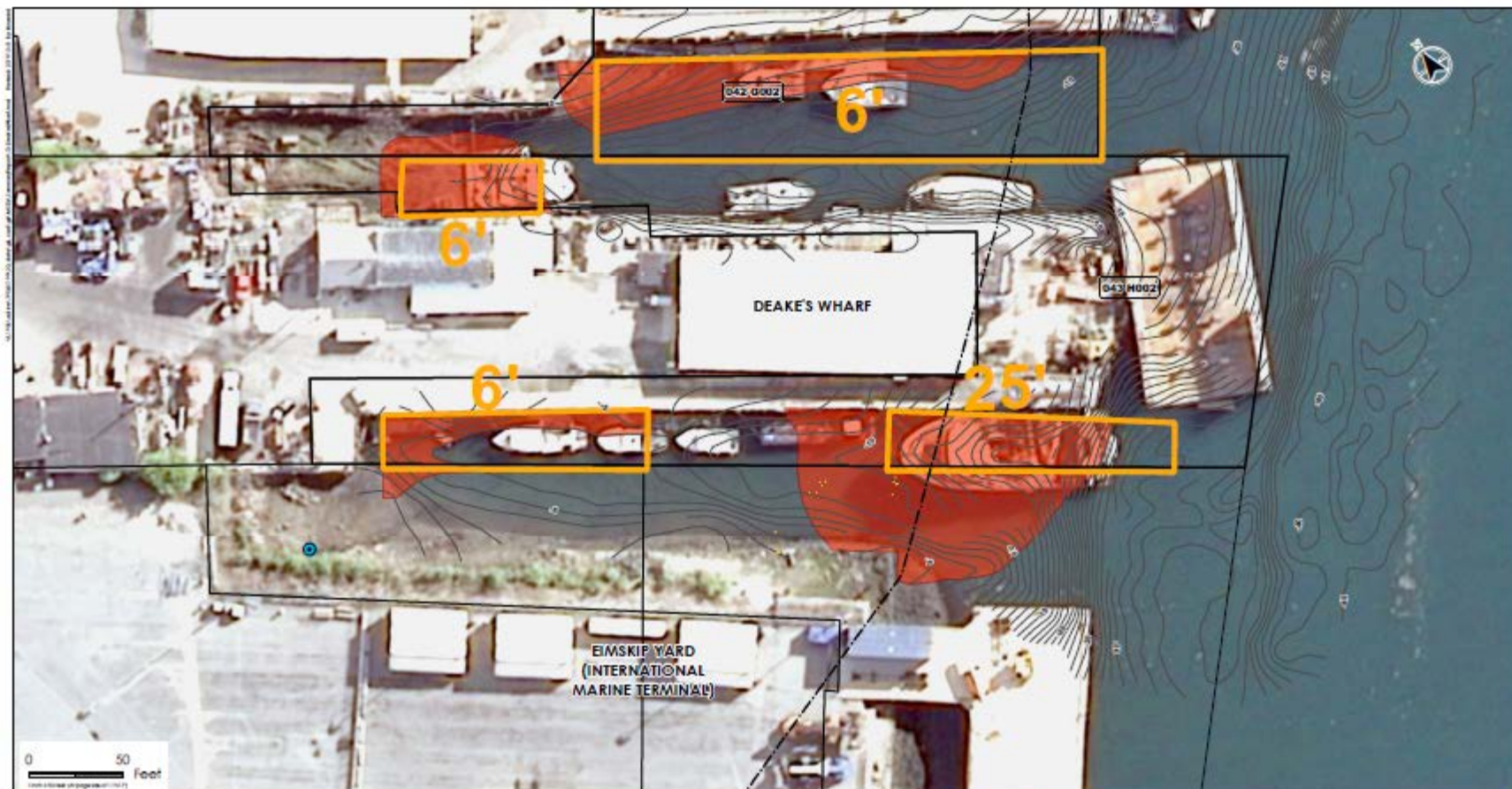
Legend			
Stormwater Outfall	Approximate Submerged Lands Regulatory Limit		
Bathymetric Contour	Dredge Limit and Target Depth		
Wharf Owner Tax Parcel and MapLot	Estimated Dredge Area		
Tax Parcel			
Owner	Map Area	Map Lot	Estimated Dredge Volume (cu yd)
Berlin Mills Wharf	Berlin Mills Wharf (S)	042 E002	1,809
Harbor Fish Market, Inc.	Holyoke Wharf	042 F004	1,217
General Marine Construction Corp.	Holyoke Wharf	042 F002	1,899
Sturdivants Wharf, Inc.	Sturdivants Wharf (S)	042 G002	1,409

Notes:
1. Coordinate System: NAD 1983 StatePlane Maine West FIPS 1002 Feet
2. Hydrographic bathymetric survey performed by Apex Companies, LLC, between November 29, 2016 through December 1, 2016.
3. Hydrographic survey datum is referenced to Mean Lower Low Water (MLLW) 1983-2001 tidal epoch. The correction from NAVD83 to MLLW is 5.25 feet for Casco Bay.
4. Elevation assumptions were made to the existing bathymetric surface where elevation data was missing to complete proposed dredge footprints. Results in those areas is approximate.
5. An additional 1' overdredge has been applied to each proposed dredge area.
6. 2015 coastal Casco Bay aerial orthophotos provided by the State of Maine, Maine Office of GIS and Maine GeoLibrary Board.

Client/Project
Portland Harbor Commission
Portland Harbor Brownfields
Dredging Project
Figure No.

Title
Berlin Mills (S)/Holyoke/ Sturdivants
Wharf (N) Proposed Dredge
10/1/2019

105401199



Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims relating in any way to the content or position of the data.

Stantec
30 Park Drive
Topsham, ME USA 04086
Phone (207) 729-1199



Legend

- Stormwater Outfall
- 1' Bathymetric Contour
- Wharf Owner Tax Parcel and Map/Lot
- Tax Parcel
- Approximate Submerged Lands Regulatory Limit
- Dredge Limit and Target Depth
- Estimated Dredge Area

Owner	Parcel	Map, Book, Lot	Estimated Dredge Volume to 6'
Stantec's Wharf, Inc.	Stantec's Wharf (S)	042-0002	755
General Marine Construction Corp.	Deake's Wharf	042-0002	5,875

Notes:

- Coordinate System: NAD 1983 StatePlane Maine West FIPS 1000 Feet
- Hydrographic bathymetric survey performed by Apex Companies, LLC, between November 29, 2016 through December 1, 2016.
- Hydrographic survey datum is referenced to Mean Lower Low Water (MLLW) 1985-2001 tidal epoch. The correction from NAVD83 to MLLW is 5.25 feet for Casco Bay.
- Elevation assumptions were made to the existing bathymetric surfaces where elevation data was missing to complete proposed dredge footprints. Results in those areas is approximate.
- An additional 1' overdredge has been applied to each proposed dredge area.
- 2016 coastal Casco Bay aerial orthophotos provided by the State of Maine, Maine Office of GIS and Maine GeoLibrary Board.

Client/Project

Portland Harbor Commission
Portland Harbor Brownfields
Dredging Project
Figure No.

The

**Sturdivant (s)/Deake's Wharf
Proposed Dredge**

10/1/2019

105421199



Disclaimer: Stantec assumes no responsibility for data supplied to electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or production of this data.



30 Park Drive
Topsham, ME USA 04086
Phone (207) 729-1199

info@portlandshipyard.com



Legend

- Stormwater Outfall
- 1' Bathymetric Contour
- Wharf Owner Tax Parcel and Map/Lot
- Tax Parcel
- Approximate Submerged Lands Regulatory Limit
- Dredge Limit and Target Depth
- Estimated Dredge Area

Owner	Map/Draw	Map/Draw Lot	Estimated Dredge Volume (cu yd)
Portland Yacht Services, Inc.	Portland Shipyard	050 F004, 059 A004	5,893

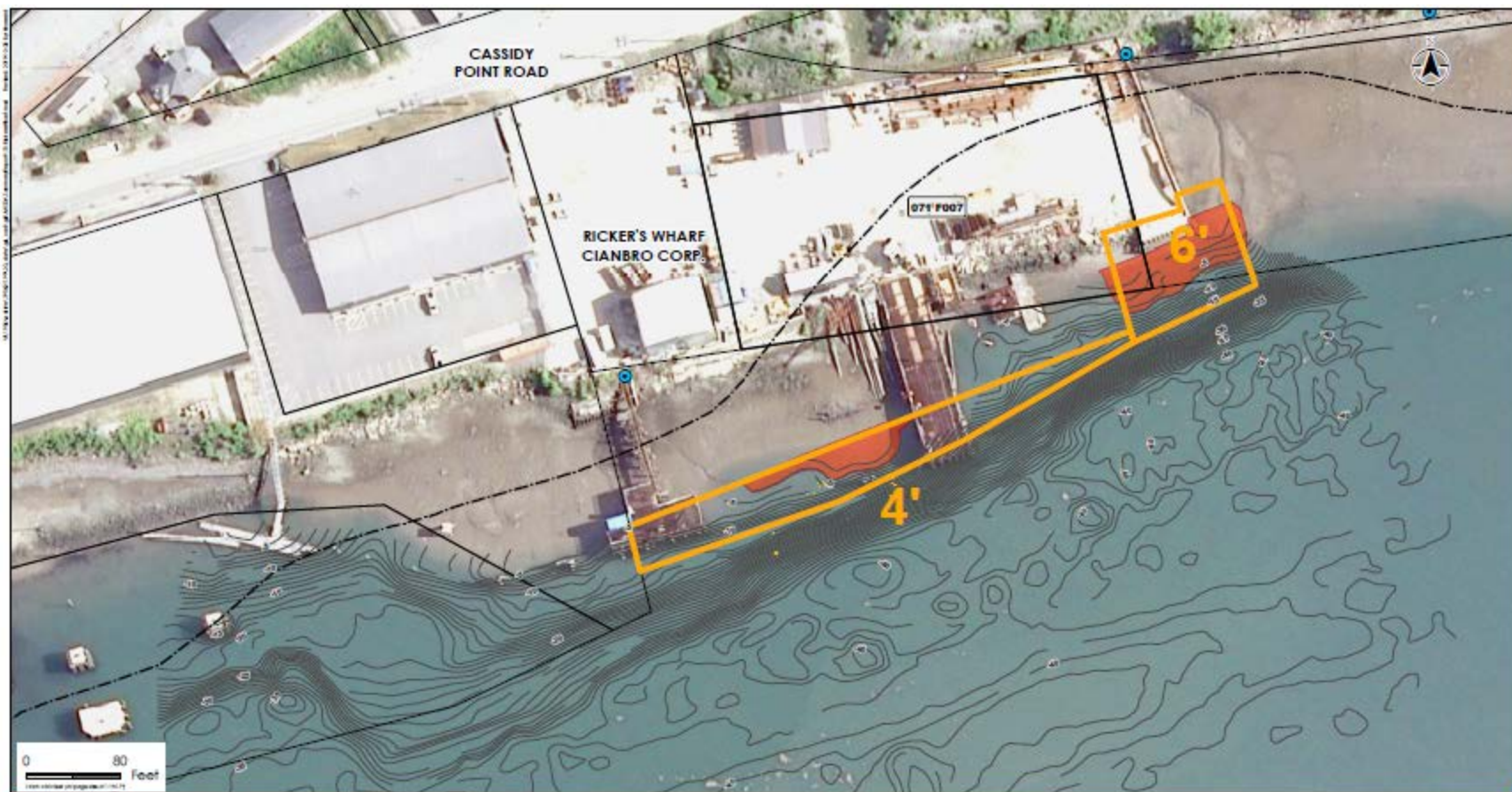
Notes:

1. Coordinate System: NAD 1983 StatePlane Maine West FIPS 1003 Feet
2. Hydrographic bathymetric survey performed by Apex Companies, LLC, between November 26, 2016 through December 1, 2016.
3. Hydrographic survey datum is referenced to Mean Lower Low Water (MLLW) 1983-2001 tidal epoch. The correction from NAVD83 to MLLW is 3.35 feet for Casco Bay.
4. Elevation assumptions were made to the existing bathymetric surface where elevation data was missing to complete proposed dredge footprint.
5. Results in those areas is approximate.
6. An additional 1' overbridge has been applied to each proposed dredge area.
7. 2018 coastal Casco Bay aerial orthophotos provided by the State of Maine, Maine Office of GIS and Maine GeoLibrary Board.

Client/Project
Portland Harbor Commission
Portland Harbor Brownfields
Dredge Project
Figure No.

Title
**Portland Shipyard
Proposed Dredge**
10/2/2019

105421199



Stantec Inc. assumes no responsibility for data supplied to electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims relating to any error from the content or generation of the data.

Stantec
30 Park Drive
Topsham, ME USA 04086
Phone (207) 729-1199



Legend

- Stormwater Outfall
- 1' Bathymetric Contour
- Wharf Owner Tax Parcel and MapLot
- Tax Parcel
- Approximate Submerged Lands Regulatory Limit
- Dredge Limit and Target Depth
- Estimated Dredge Area

Owner	File/Draw	Map/Book/ Lot	Estimated Dredge Volume (cu yd)
Cianbro Corporation	Ricker's Wharf	071 F007	8,100

Notes:

- Coordinate System: NAD 1983 StatePlane Maine West FIPS 1002 Feet
- Hydrographic bathymetric survey performed by Apex Companies, LLC, between November 29, 2016 through December 1, 2016.
- Hydrographic survey datum is referenced to Mean Lower Low Water (MLLW) 1983-2001 tidal epoch. The correction from NAVD83 to MLLW is 5.25 feet for Casco Bay.
- Elevation assumptions were made to the existing bathymetric surface where elevation data was missing to complete proposed dredge footprints.
- Results in these areas is approximate.
- An additional 1' overbridge has been applied to each proposed dredge area.
- 2018 coastal Casco Bay aerial orthophoto provided by the State of Maine, Maine Office of GIS and Maine GeoLibrary Board.

Client/Project

Portland Harbor Commission
Portland Harbor Brownfields
Dredging Project
Figure No.

Title

**Ricker's Wharf/Cianbro
Proposed Dredge**
10/2/2019

105421199

Dredging and Berthing Sediment Disposal



Portland

CAD Option

CAD Option

**Preferred
CAD
Site**

CAD option 1a

CAD Option 1e

CAD Option 1d

CAD Option 1c

CAD Option 1b

Dredging and Berthing Sediment Disposal





CAD Site



Subtidal
sandy silt

Subtidal
sandy silt
with
European
oysters

US Coast Guard Sector
Northern New England

Setback
from
channel

Top of CAD – Test for
Disposal Options

Bottom of CAD – Open Water
Disposal

Setback
from
channel

"Marina
Channel"

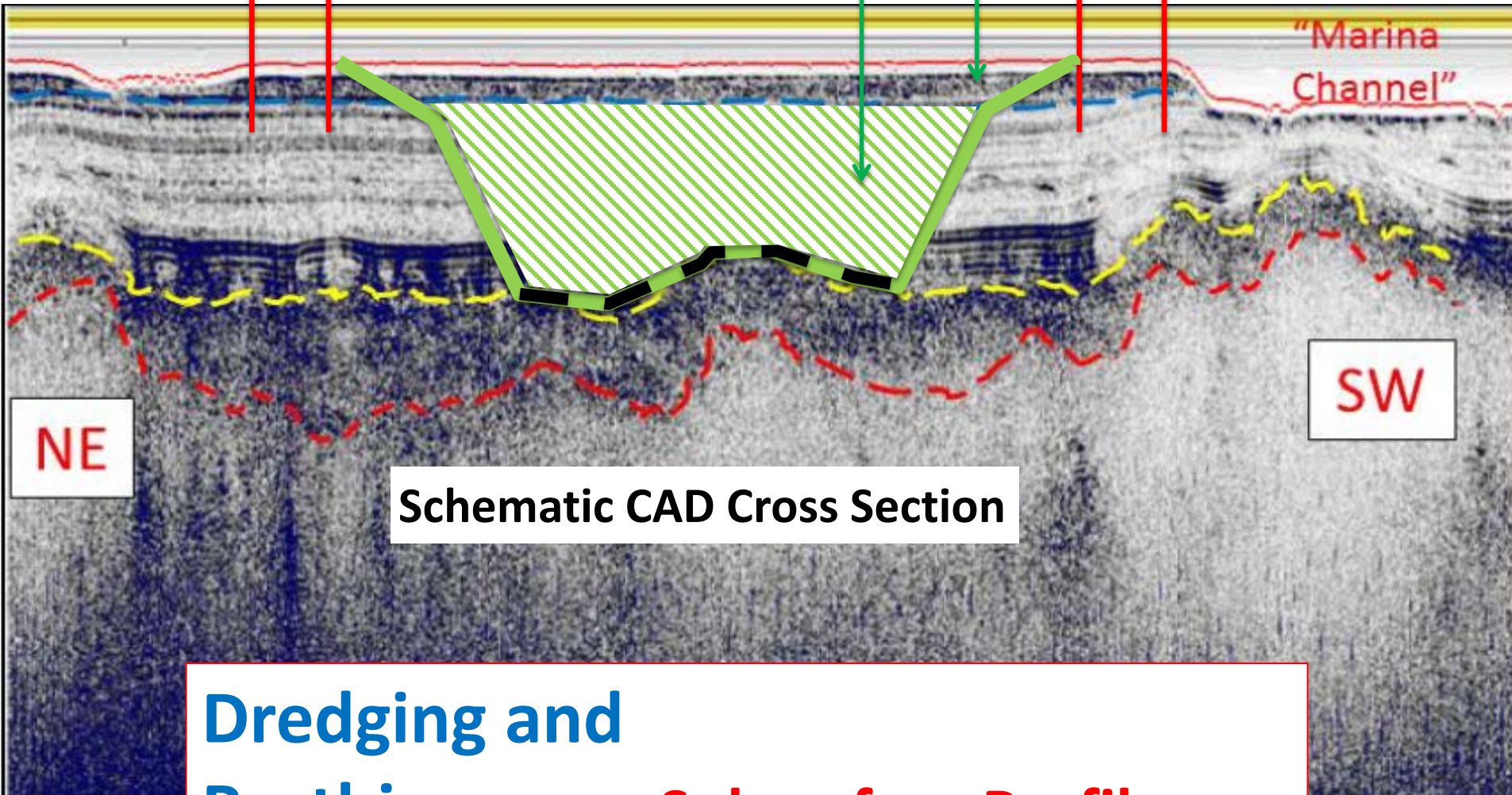
SW

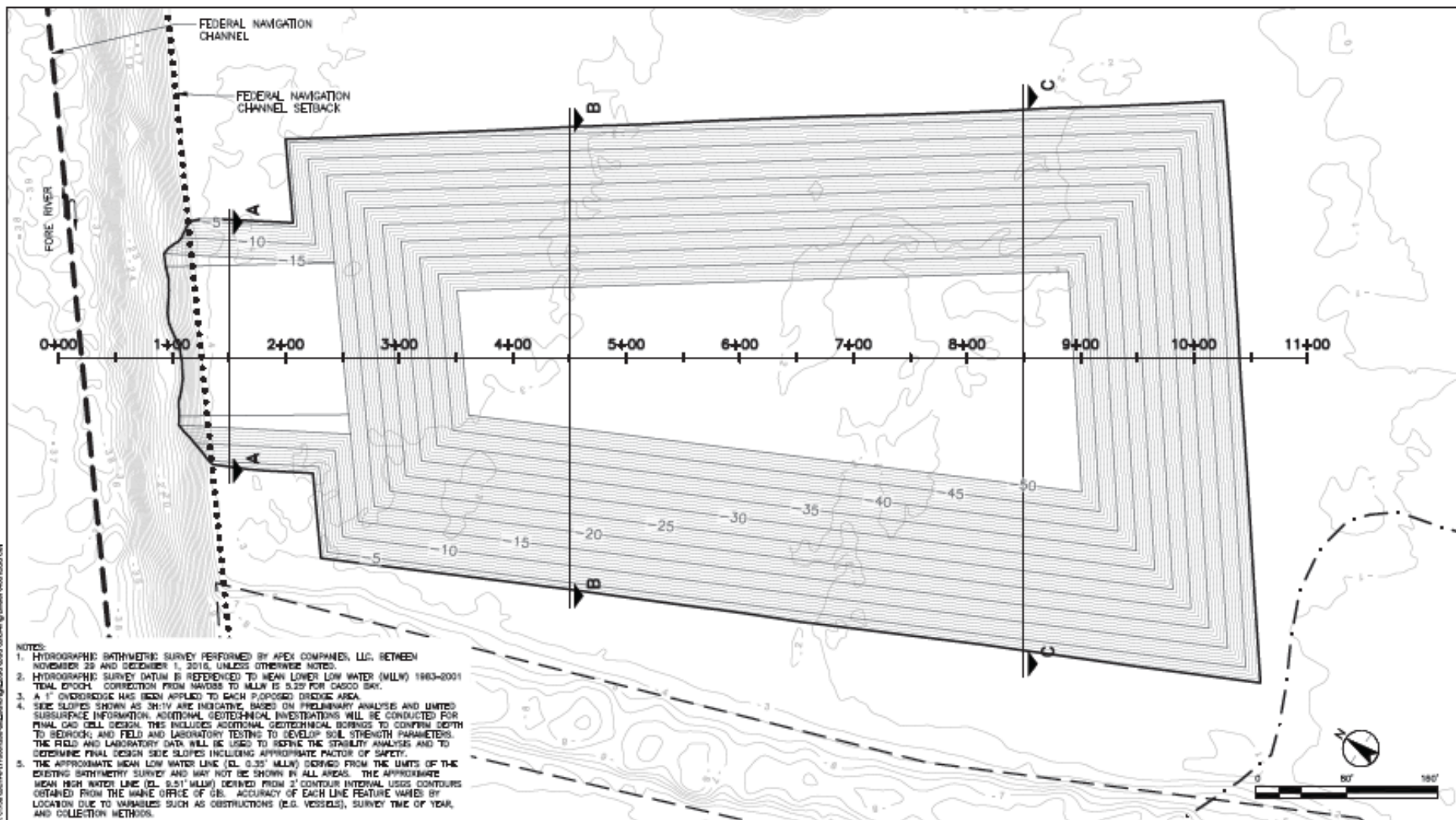
NE

Schematic CAD Cross Section

Dredging and
Berthing

Subsurface Profile





Stantec Consulting Services Inc.
30 Park Drive
Burlington MA 01803-1107
Tel (802) 728-1199
www.stantec.com

FOR PERMITTING
PURPOSES ONLY
NOT FOR CONSTRUCTION



NOTES:

1. HYDROGRAPHIC BATHYMETRIC SURVEY PERFORMED BY APEX COMPANIES, LLC. BETWEEN NOVEMBER 29, 2019 THROUGH DECEMBER 1, 2019.
2. HYDROGRAPHIC SURVEY DATUM IS REFERENCED TO MEAN LOWER LOW WATER (MLLW) 1985-2001 TIDAL DATUM. THE CORRECTION FROM NAVD83 TO MLLW IS 5.25 FEET FOR CASCO BAY.
3. AN ADDITIONAL 1' OVERDREDGE HAS BEEN APPLIED TO EACH PROPOSED DREDGE AREA.
4. SEE SLOPES SHOWN AS 3H:1V ARE INDICATIVE BASED ON PRELIMINARY ANALYSIS AND LIMITED SURVEILLANCE INFORMATION. ADDITIONAL GEOTECHNICAL INVESTIGATIONS WILL BE CONDUCTED FOR FINAL CAD CELL DESIGN. THIS INCLUDES ADDITIONAL BORINGS TO CONFIRM SOIL TYPE, TO BEHOLD, AND FIELD AND LABORATORY TESTING TO DEVELOP SOIL STRENGTH PARAMETERS. THE FIELD AND LABORATORY DATA WILL BE USED TO REFINE THE STABILITY ANALYSIS AND TO DETERMINE FINAL DESIGN SEE SLOPES INCLUDING APPROPRIATE FACTOR OF SAFETY.

Legend

- EXISTING BATHYMETRY
 — PROPOSED TARGET DREDGE DEPTH



**FOR PERMITTING
 PURPOSES ONLY
 NOT FOR CONSTRUCTION**

Stantec Consulting Services Inc.
 30 Park Drive
 Portland, ME 04263-1737
 TEL (207) 724-1399
 www.stantec.com

Client/Project
 City of Portland
 Portland Harbor
 CAD Cell Project

Project No.
 195601208

File
 Proposed CAD Cell
 Profile

Revision _____ Date 2019.12.02
 Reference Sheet _____ Figure No. 3

'Vibracore' Sampling



CAD Cell Sediment Cores



Marine clay 27-40"
below mudline at
sampling locations Boring 36"



Geotechnical Boring



Sediment Testing

- Testing of Metals, Polycyclic aromatic hydrocarbons (PAHs), Pesticides, and PCBs to characterize material being placed in the CAD cell.
- Screening of data against Soil Construction Worker soil exposure scenario in MEDEP's Maine Remedial Action Guidelines (RAGs) for Sites Contaminated with Hazardous Substances.
- Sediments with contaminant levels typical in harbors. Unsuitable for offshore disposal. Project goal is to dispose of these sediments that marine life is currently exposed to.

Project Schedule

- **Permit submittals- December 2019**
- **Permits received- Summer 2020**
- **Economic assessment -March 2020**
- **USACOE Sec. 408 review - Pending**
- **BUILD grant application- May 2020**
- **Final Design and Bidding - Winter 2020/2021**
- **CAD cell construction- Harbor dredging- 2021-2026**

Funding Expectations

Total Project Costs: +/- \$30,000,000

Anticipated Sources:

- Federal Grants (BUILD) \$20,000,000
- State Transportation Funds \$ 5,000,000
- Local “tipping fees” \$ 5,000,000
 based on sediment volume

Local Tipping Fees, currently assumed at
\$20.40/Cubic Yard

Funding Expectations

Costs to the City of Portland:

Soft Costs

- Funds needed to keep process moving – City of Portland allocated \$100,000 this FY from Waterfront TIF (with additional outside funds – EPA Brownfields, MTI pending)
- State to assist with BUILD grant application – Local governments to contribute 50/50 - \$16,250 /city
- Economic Assessment - Needed for BUILD grant, shared with South Portland - \$25,000/city

Construction Costs – Pending BUILD Funding

- City “Tipping Fees” (based on +/-52,000 CY sediment at a \$20.40/CY) +/- \$1,060,800 from future Waterfront TIF

Questions?

