



To: Planning Committee  
From: Mike Redpath,  
Senior Manager, Parks

Date: October 8, 2013  
File: 06-2345-00/Vol 01

John Irving, P.Eng. MPA  
Director, Engineering

Re: **Ladner Steveston Local Channel Dredging 2013**

**Staff Recommendation**

That Council approve the Phase 1 dredging works under the terms of the Steveston Ladner Local Channel Dredging Contribution Agreement and Imperial Landing Dredging, as detailed in the report "Ladner Steveston Local Channel Dredging 2013," from the Senior Manager, Parks and Director, Engineering.

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Att. 3

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Finance Division	<input checked="" type="checkbox"/>	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: DW	APPROVED BY CAO 

## Staff Report

### Origin

At a Special Council meeting on May 6, 2013, the following recommendations were approved in response to the report: Ladner Steveston Local Channel Dredging Contribution Agreement 2013.

- “(1) That the Ladner Steveston Local Channel Dredging Contribution Agreement as attached to the staff report titled Ladner Steveston Local Channel Dredging Contribution Agreement 2013 from the Senior Manager, Parks and Director, Engineering dated April 16, 2013 be approved;*
- (2) That the Chief Administrative Officer and the General Managers of Community Services, Engineering and Public Works be authorized to sign the Ladner Steveston Local Channel Dredging Contribution Agreement; and*
- (3) That staff bring forward the finalized dredging budget and scope for consideration prior to any expenditure commitment.”*

The purpose of this report is to provide an update on the Steveston channel dredging project and obtain Council approval for commencement of Phase 1 of proposed dredging operations as detailed in the Steveston Ladner Local Channel Dredging Contribution Agreement 2013 (the “Agreement”) and for Imperial Landing dredging.

### Analysis

Since 2009, the City has been working with PMV, the Province, and other stakeholders to develop a strategy and identify funding sources to alleviate the sedimentation problems that are occurring in Steveston Channel.

On December 17, 2012, a joint funding commitment by PMV, the Department of Fisheries and Oceans, the BC Ministry of Transportation and Infrastructure, the Corporation of Delta and the City was announced to undertake local channel dredging around Ladner and Steveston (the “Project”).

Following the funding announcement, a steering committee comprising of the four funding partners, was established. PMV is the lead agency for the Project and has assigned a Project Manager who is responsible for the dredging contractor and securing all regulatory approvals. Dredging has been scheduled to start in the fall/winter of 2013 and 2014.

### Background

As Canada’s largest commercial fishing harbour, Steveston provides a full range of services to support the commercial fishing fleet. There are numerous wharves, floats and buildings located in this area that provide support, services and moorage to more than an estimated 1,200 fishing vessels per year.

The Local Channel Dredging Project (“the Project”) is a maintenance dredging project designed to remove sediment built up naturally from eleven sections of the navigation channels in the Ladner area of Delta and five sections of the navigation channel in Steveston Harbour area of Richmond.

On December 17, 2012, the Department of Fisheries and Oceans, the BC Ministry of Transportation and Infrastructure, PMV, the Corporation of Delta, and the City of Richmond made an announcement of \$10 million joint commitment to fund dredging of vital channels in the Fraser River in Steveston and Ladner. As the designated project lead on behalf of the funding partners, PMV has analyzed options for moving forward and is proposing to move ahead in a phased approach.

**The Agreement**

The Agreement establishes the process and future funding framework and working relationship between the City, Delta, Port Metro Vancouver (PMV) and the Province of British Columbia for future cooperative dredging in Ladner and Steveston. Since execution of the Agreement by the parties in May of 2013, PMV has completed tendering and estimates for volumes of dredgate to be removed. A phased approach is being suggested, and is detailed in the agreement revised Schedule C (Attachment 1).

**Proposed Phase 1 Approach**

Sixteen maintenance dredging areas or “cuts” (11 in Ladner, 5 in Steveston) in the Ladner and Steveston Local Channel Dredging Project, have been prioritized according to need to take into consideration the volume of material/dredgate and indicated importance from local river users.

As the designated Project lead on behalf of the funding partners, PMV has analyzed the best way to move forward and is proposing to move ahead with 5 cuts in Ladner and 3 in Steveston (Map Attachment 3), suggesting dividing the work between Fraser River Pile & Dredge (FRPD) and Vancouver Pile Driving (VPD) based on their lower unit costs submitted for the Request for Proposal (RFP) in mid 2013. FRPD has proposed a methodology and pricing for sites in both Ladner and Steveston (Sea Reach, Deas Slough and Cannery Channel) where in-river disposal is possible, and VPD will be used for the Ladner Harbour cuts that require disposal at sea at Point Grey.

**Phased 1 Shared Cost Dredging Program Details for Steveston Channel - Recommended**

**Option:**

Channel	Dredge Cuts	Volume	Estimated Total Cost	Notes
<b>Steveston</b>				
Cannery Channel	A, B, & C (60% Volume of C)	112,250m <sup>3</sup>	\$ 952,650	In-River Disposal*

\*Application will be for in-river disposal, supported by hydraulic modeling and revised report from Balanced Environmental indicating material has lower polychlorinated biphenyl (PCB) levels than sand heads which should allow for in-river disposal, as per Environment Canada.

**Phase 1 Cost Allocation**

Costs will be split proportionally between PMV, the Province and each applicable municipality with the exception of areas such as Imperial Landing City Water Lot Dredging. The costs below include mobilization of the dredging equipment, which are estimates only and actual costs will be assigned to each funding partner:

	PMV	Delta	Richmond	Province	Total
Ladner	\$ 1,670,237	\$ 1, 870,237	-	\$ 1, 670,237	\$ 5,210,711
Steveston	\$ 317,550	-	\$ 317,550	\$ 317,550	\$ 952,650
Implementation Costs	\$ 137,600	\$ 68,833	\$ 18,767	\$ 187,600	\$ 412,800
<b>Total Phase 1 Shared</b>	<b>\$ 2,215,387</b>	<b>\$ 1,939,070</b>	<b>\$ 336,317</b>	<b>\$ 2,175,387</b>	<b>\$ 6,576,161</b>
<b>Dredging (Imperial Landing)</b>			\$280,000		
<b>Total Cost Richmond Phase 1</b>			<b>\$616,317</b>		

**Phase 1 Next Steps**

In order to make the 2013/2014 dredging season, now that surveys, sampling and modeling has been completed, should this approach be approved by all funding partners, PMV will:

- Select dredging contractor(s) and finalize contracts - November
- Apply for dredging and disposal at sea permit applications - November
- Develop dredging plan, once permits are approved - November/December
- Review dredging plan, prior to commencement - December
- Commence Phase 1 dredging - December/January

The proposed Phase 1 dredging operations will achieve desired depths for the areas shown as A, B and 60% of Cut C as shown in (Map Attachment 3). While this option will achieve optimal dredging for a portion of the Steveston Cannery channel, actual volumes removed will not be verified until dredging operations commence as annual channel sedimentation from freshets events can impact current depths.

**Imperial Landing City-Owned Water Lot Dredging**

Staff is recommending that Imperial Landing waterfront be included in the first phase of dredging inclusive of the Cannery Channel dredging starting from the entrance of Garry Point Park waterfront. This specific area in Steveston outside of the navigable Cannery Channel is the responsibility of the City to dredge and will once again be accessible by vessels requiring deeper waters. The City’s existing 600 feet of floating dock frontage will accommodate more variety of vessels seeking moorage with deeper water depths and will enable increased opportunities for visitations at major special events such as Ships to Shore and the Maritime Festival and

expanded Britannia Heritage Shipyard marine programming. Liaison with the Britannia Building Committee in conjunction with ongoing planning for the Britannia/Phoenix Cannery waterfront and Imperial landing will continue.

The City will be able to secure preferred rates and capitalize on the mobilization of dredging equipment and disposal options thus significantly reducing the cost of dredging independently in the future should the City dredge independently. Subject to confirmation of pricing through the existing RFP process, staff is proposing this extension of the Steveston Harbour adjacent dredging operations to Imperial Landing with dredging depths of -4.5 metres (14.75 feet deep). It is estimated that these works will require the removal of up to 34,400 cubic meters from the areas surrounding the floating docks at a cost of \$280,000 (Map Attachment 2).

**Alternate Phase 1 Cannery Channel Dredging Opportunity - Not Recommended:**

This alternative does not meet the cost sharing criteria for City funding as PMV will not contribute additional funds. The alternate dredging scenario as detailed in the tables below suggests dredging greater volumes from the Cannery Channel which would ensure a continuous depth of -4.5metres subgrade for the entire Cannery Channel from Garry Point to Imperial Landing. This option is not recommended as PMV has indicated that this option would generate a shortfall of -\$61,826 from their available funding. As PMV originally contributed \$500,000 to the joint funding agreement, a portion of this funding was reduced due to prior dredging in the Channel with the Steveston Harbour Authority. This option is based on the following estimate:

Channel	Dredge Cuts	Volume	Estimated Total Shared Cost			Notes	
<b>Steveston</b>							
Cannery Channel	A, B, & C & Portion of D up to Imperial Landing ( Map Attachment 3)	147,900 m <sup>3</sup>	\$ 1,222,043			In-River Disposal*	
			PMV	Delta	Richmond	Province	Total
Ladner			\$ 1,670,313	\$ 1,870,313	-	\$ 1,670,313	\$ 5,210,939
Steveston			\$ 407,348	-	\$ 407,348	\$ 407,348	\$1,222,044
Implementation Costs			\$ 137,600	\$ 68,833	\$ 18,767	\$ 187,600	\$ 412,800
<b>Total Phase 1 Shared</b>			<b>\$ 2,215,261</b>	<b>\$ 1,939,146</b>	<b>\$ 426,115</b>	<b>\$ 2,265,261</b>	<b>\$ 6,845,783</b>
Dredging (Imperial Landing)					\$280,000		
<b>Total Cost Richmond Phase 1</b>					<b>\$706,115</b>		

### Remaining Dredge Cuts and Funding

This phased approach will help to progress dredging this season, and also provide additional time to finalize any beneficial use of the remaining Project areas with Port Metro Vancouver's Habitat Banking Program. Areas remaining in Sea Reach, Ladner Reach, Deas Slough, Ladner Harbour, Canoe Pass, and Cannery Channel will become a focus for the 2014/2015 dredging season. Further complimentary dredging areas may include the channel sections and waterfront areas from Imperial Landing to Britannia Heritage Shipyards.

### Financial Impact

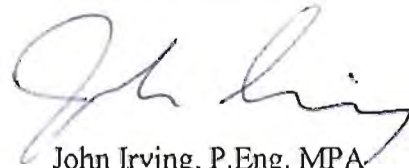
Council approved, subject to matching funding up to \$2M in funding from the utility provision for dredging in October 2012 and subsequently in May 2013 approved expenditures of \$0.1M. The 5 Year Financial Plan (2013-2017) was amended to include the \$2M expenditures, which will be funded by the utility provision (\$1.9M) and dredging provision (\$0.1M). This report proposes that expenditures of up to \$616,317 for Richmond's share of the Ladner and Steveston Local Channel Dredging Project, and for dredging operations at Imperial Landing in Steveston.

### Conclusion

In order to maximize the benefits of the joint funding as proposed in the Ladner and Steveston Local Channel Dredging agreement, as well as the project management and tendering efficiencies realized through working with Delta, the Province of BC and Port Metro Vancouver, much needed dredging operations in the Steveston Channel can be advanced this year. Upon completion of Port Metro Vancouver's Habitat Banking Program and further analysis of the Steveston Harbour Long Term Vision Concept Plan, staff will provide an update report in 2014 for the next phase of the management dredging of the remaining sections of the Steveston channel.



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DRAFT  
WORKING DOCUMENT

Secondary Channels Dredging Funding Allocation Working Document - Phase 1

Channel / Area	Dredging Needs measurement	Estimated Cost		Funding Partners			NOTES
		incl. DAS fee	PMV	Province of BC	Delta	Richmond	
1. Sea Reach	180,100	\$1,483,217	\$	494,406	\$	494,406	Measurement to be confirmed
2. Sea Reach	49,500	\$0	\$	\$	\$	\$	Future
3. Ladner Reach	76,600	\$0	\$	\$	\$	\$	Future
4. Ladner Reach	49,500	\$0	\$	\$	\$	\$	Future
5. Deas Slough	26,300	\$275,361	\$	91,787	\$	91,787	Measurement to be confirmed
6. Deas Slough	47,500	\$0	\$	\$	\$	\$	Future
7. Ladner Harbour	133,500	\$1,851,646	\$	617,215	\$	617,215	Measurement to be confirmed
8. Ladner Harbour	75,000	\$1,044,000	\$	348,000	\$	348,000	Measurement to be confirmed
9. Ladner Harbour	3,300	\$37,594	\$	12,528	\$	12,528	Measurement to be confirmed
10. Cannon Pass	21,600	\$0	\$	\$	\$	\$	Future
Mobilization	678,300	\$318,905	\$	106,302	\$	106,302	Est. only, actual costs will be ascertained
<b>TOTAL DELTA</b>		<b>\$5,210,712</b>	\$	<b>1,670,237</b>	\$	<b>1,670,237</b>	<b>\$ 5,210,712</b>
A. Cannery Channel	35,200	\$257,664	\$	85,888	\$	85,888	Measurement to be confirmed
B. Cannery Channel	49,000	\$379,476	\$	126,492	\$	126,492	Measurement to be confirmed
C. Cannery Channel - Ph 1	27,250	\$205,830	\$	67,943	\$	67,943	Partial dredge - 60% only
C. Cannery Channel - Ph 2	19,150	\$0	\$	\$	\$	\$	Future
D. Cannery Channel	106,100	\$0	\$	\$	\$	\$	Future
E. Cannery Channel	40,000	\$0	\$	\$	\$	\$	Future
Mobilization	203,100	\$111,680	\$	37,227	\$	37,227	Est. only, actual costs will be ascertained
<b>TOTAL RICHMOND</b>		<b>\$982,650</b>	\$	<b>317,650</b>	\$	<b>317,650</b>	<b>\$ 982,650</b>
<b>TOTAL</b>	<b>961,400</b>	<b>\$6,193,361</b>	\$	<b>1,987,897</b>	\$	<b>1,987,897</b>	<b>\$ 6,193,361</b>
Allocated to Project		\$	\$	\$	\$	\$	\$
Differential remaining		\$	\$	\$	\$	\$	\$
<b>Implementation Costs</b>							
Project Management		\$150,000	\$	50,000	\$	50,000	Estimate only
Surveys		\$12,500	\$	4,167	\$	4,167	Estimate only
Sampling		\$43,300	\$	14,433	\$	14,433	Estimate only
Modeling		\$75,000	\$	25,000	\$	25,000	Estimate only
Miscellaneous		\$50,000	\$	16,667	\$	16,667	Estimate only
Contingency		\$82,000	\$	27,333	\$	27,333	Estimate only
Remaining Funding - Delta		\$412,900	\$	137,600	\$	137,600	Estimate only
Remaining Funding - Richmond		\$569,641	\$	596,641	\$	60,929	\$2,500,000 - \$125,000 advance - PMV's support costs for Delta's Phase 1
Provincial Residual Funding Distribution Allocation		\$	\$	\$	\$	\$	\$500,000 - \$125,000 advance - PMV's support costs for Richmond's Phase 1
<b>TOTAL CONTRIBUTION BY PARTNER</b>		<b>\$ 9,750,000</b>	\$	<b>2,750,000</b>	\$	<b>2,000,000</b>	<b>\$ 9,750,000</b>

DELTA DREDGING COSTS	
PMV	\$ 1,670,237
Province of BC	\$ 1,670,237
Delta	\$ 1,870,237
<b>TOTAL DELTA Phase 1</b>	<b>\$ 5,210,712</b>
REMAINING FUNDING - DELTA	
PMV	\$ 596,641
Province of BC	\$ 60,929
Delta	\$ 1,152,337
<b>REMAINING FUNDING - DELTA</b>	<b>\$ 1,810,000</b>
RICHMOND DREDGING COSTS	
PMV	\$ 317,650
Province of BC	\$ 317,650
Richmond	\$ 992,650
<b>TOTAL RICHMOND Phase 1</b>	<b>\$ 1,627,950</b>
REMAINING FUNDING - RICHMOND	
PMV	\$ 27,972
Province of BC	\$ 1,663,683
Richmond	\$ 2,021,501
<b>REMAINING FUNDING - RICHMOND</b>	<b>\$ 3,713,156</b>
SHARED COSTS	
PMV	\$ 137,600
Province of BC	\$ 187,600
Delta	\$ 68,833
Richmond	\$ 18,767
<b>TOTAL SHARED COSTS</b>	<b>\$ 412,800</b>
<b>TOTAL PMV</b>	<b>\$ 2,750,000</b>
<b>TOTAL PROVINCE</b>	<b>\$ 3,000,000</b>
<b>TOTAL DELTA</b>	<b>\$ 2,000,000</b>
<b>TOTAL RICHMOND</b>	<b>\$ 2,000,000</b>
<b>TOTAL</b>	<b>\$ 9,750,000</b>

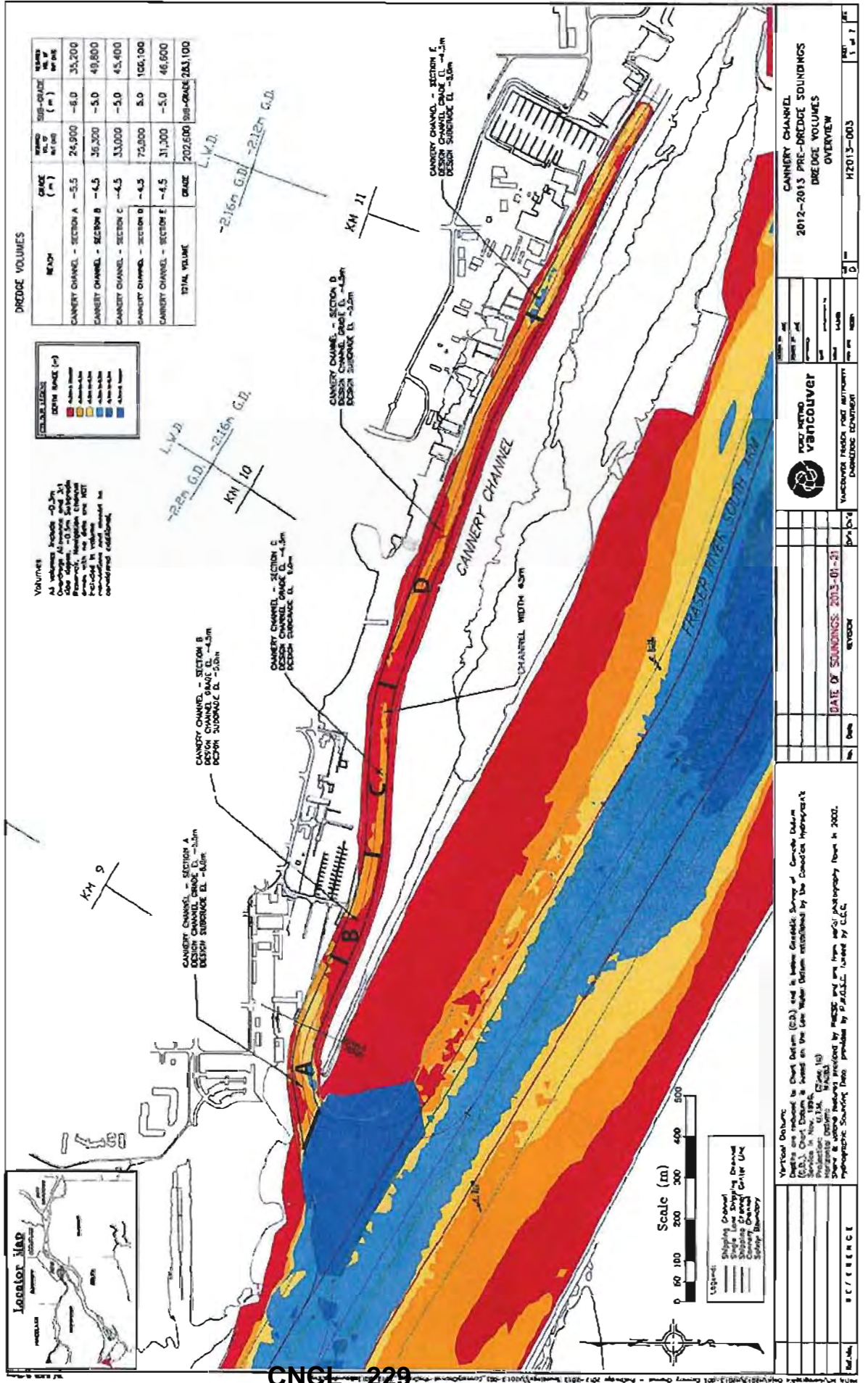
Attachment 2

Imperial Landing





# Steveston Harbour - 2013 data



**DREDGE VOLUMES**

REACH	GRADE (m)	VOLUME (m <sup>3</sup> )	SUB-GRADE (m)	WATER SURFACE (m)
CANNERY CHANNEL - SECTION A	-5.5	24,500	-8.0	33,200
CANNERY CHANNEL - SECTION B	-4.5	39,300	-5.0	49,800
CANNERY CHANNEL - SECTION C	-4.5	33,000	-5.0	45,400
CANNERY CHANNEL - SECTION D	-4.5	75,000	5.0	156,100
CANNERY CHANNEL - SECTION E	-4.5	31,200	-5.0	46,600
<b>TOTAL VOLUME</b>	<b>GRADE</b>	<b>203,000</b>	<b>SUB-GRADE</b>	<b>283,100</b>

**DEPTH LEGEND**

DEPTH (m)	Color
0.0	Light Blue
1.0	Light Green
2.0	Yellow
3.0	Orange
4.0	Red
5.0	Dark Red
6.0	Dark Blue
7.0	Blue
8.0	Light Blue
9.0	White

**VOLUMES**  
 All volumes include +/- 0.2m  
 Channel Depth, +/- 0.1m Subgrade  
 Accuracy. Navigation Channel  
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**NOVINTHO VANCOUVER**

**CANNERY CHANNEL 2012-2013 PRE-DREDGE SOUNDINGS**

**DREDGE VOLUMES OVERVIEW**

DATE OF SOUNDINGS: 2013-01-31

REVISION: 1 of 7

H2013-003