



## Public Works & Transportation Committee

Date: Wednesday, December 5<sup>th</sup>, 2001

Place: Anderson Room  
Richmond City Hall

Present: Councillor Lyn Greenhill, Chair  
Councillor Kiichi Kumagai, Vice-Chair  
Councillor Linda Barnes  
Councillor Evelina Halsey-Brandt  
Councillor Rob Howard

Also Present: Councillor Bill McNulty  
Councillor Harold Steves

Call to Order: The Chair called the meeting to order at 4:00 p.m., at which time it was agreed that the next meeting of the Committee, scheduled for Tuesday, December 19<sup>th</sup>, 2001, would not be held.

The Chair also directed that the following matter be added to the agenda as an additional item, "Oral update on the recommendations being proposed for improvements to Richmond's transit system".

### MINUTES

1. It was moved and seconded  
*That the minutes of the meeting of the Public Works & Transportation Committee held on Wednesday, November 21<sup>st</sup>, 2001, be adopted as circulated.*

**CARRIED**

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## URBAN DEVELOPMENT DIVISION

### 2. **FEDERAL FINANCIAL SUPPORT FOR DREDGING OF THE FRASER RIVER AND FLOOD PROTECTION WORKS**

(Report: Nov. 16/01, File No.: 6045-01) (REDMS No. 557035)

The General Manager, Urban Development, David McLellan, spoke about the report entitled "Comprehensive Management for Flood Protection Works". He then introduced Mr. Allan Domas, Acting President of the Fraser Port Authority.

Discussion took place among Committee members and Mr. Domas on issues related to the debris trap and dredging of the Steveston Channel. Mr. Domas, in responding to questions from the Committee, offered the following comments and information:

- a decision on funding for the debris trap for the fiscal year 2002 had not yet been made; because of the withdrawal of the air emission permit, the debris either had to be eliminated in a controlled or smokeless burn, or as a third alternative, removed, 'hogged', and shipped to Mission, at an additional cost of \$500,000; because funding for the program was derived from small contributions, it could be very difficult to raise the additional funds
- the amount of material caught in the debris trap was related to the amount of snowfall and the resulting freshets
- the problem of debris had always been an on-going problem, since the time when Captain George Vancouver first discovered what is now the City of Vancouver; recreational boaters needed more education to be aware that there was debris in the Fraser River; there was no alternative for diligence
- with reference to the need for dredging of the Steveston Channel, the Federal Government undertook dredging in support of development of navigable water; however, there was no work completed to maintain these watercourses
- the dredging cycle for the Steveston Channel was once every 8 to 10 years
- there were many opposing government policies which had to be addressed.

Discussion also took place on the provision of funding for the debris trap and who should take responsibility for this on-going problem. During this discussion, Mr. Domas provided Committee members with a brochure on dredging, a copy of which is attached as Schedule A and forms part of these minutes.

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Discussion continued among Committee members and the delegation on the state of the Steveston Channel, the level of silt which had built up on the riverbed over the past years, the difficulties being experienced by fishermen, and current dredging practices.

It was moved and seconded

*That the following resolution be adopted and circulated to the Prime Minister, Minister of Finance, Minister of Fisheries and Oceans, Minister of Transport, Richmond Members of Parliament, Cities of New Westminster, Surrey, Delta, Coquitlam and Port Coquitlam, Districts of Maple Ridge and Pitt Meadows and the Township of Langley:*

*“WHEREAS in the 1900’s the Federal Government developed and maintained commercial navigation channels in the Fraser River through the construction of training walls and regular dredging programs, and*

*WHEREAS until 1997 the Federal Government provided capital and operating funds for the said development and maintenance of the Fraser River navigation channels, and*

*WHEREAS significant waterborne commerce developed in response to the development and maintenance of Fraser River navigation channels, and*

*WHEREAS significant flood control benefits resulted from the development and maintenance of the said Fraser River navigation channels, and*

*WHEREAS users of the Fraser River navigation channels pay a Marine Services Fee to the Canadian Coast Guard but the Canadian Coast Guard does not include development and maintenance of the Fraser River navigation channels as services funded by the revenue generated by the Marine Services Fees, and*

*WHEREAS neither the Canadian Coast Guard nor the Federal Government now provide capital and operating funds for the development and ongoing maintenance of the Fraser River navigation channels, and*

*WHEREAS the Fraser River Port Authority has chosen to seek to keep the Fraser River navigation channels operational to the extent of the Authority’s limited financial resources and is now the sole funding source for the development and maintenance of the Fraser River navigation channels, including but not restricted to the removal of the annual spring freshet infill in the Fraser River, and*

*WHEREAS the above mentioned significant waterborne commerce and the flood control benefits will be jeopardized if the maintenance of the Fraser River navigation channels is not continued and infill removed annually, thereby threatening the socio-economic activities occurring on adjacent lands within the boundaries of our City, and*

*WHEREAS many of the secondary channels, including the Steveston Harbour, are silting up very quickly and soon may become unusable for navigation, and*

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*WHEREAS many of the local dykes in the lower reaches of the Fraser River were constructed under a joint Federal/Provincial/Municipal funding program, and*

*WHEREAS the Federal Government does not have any current active funding programs which assist local agencies in maintaining or upgrading these dykes, and*

*WHEREAS when a flood breaches the dykes, Federal Government emergency funds required will be far in excess of prudent expenditures in both dredging and dyke upgrading,*

*BE IT THEREFORE RESOLVED that the City of Richmond, in the strongest way possible, request the Federal Government, reinstate the funding for the continuing development and maintenance of the Fraser River navigation channels and dyking system and provide assurance that previous levels of development and maintenance of the Fraser River navigation channels and dykes will be maintained without jeopardy to waterborne commerce and flood control benefits.”*

Prior to the question on the motion being called, the Chair thanked Mr. Domas for attending this afternoon’s meeting.

The question on the motion was then called, and it was **CARRIED**.

(Councillors McNulty and Steves left the meeting at 4:44 p.m., and did not return.)

## ENGINEERING & PUBLIC WORKS DIVISION

### 3. **DITCH AND WATERCOURSE PROTECTION AND REGULATION BYLAW NO. 7285**

(Report: Nov. 19/01, File No.: 8060-20-7285) (REDMS No. 466934, 492397)

The Director, Engineering, Steve Ono, reviewed the report with the Committee. In response to questions, advice was given that the cost of enclosing ‘piecemeal’ 1.5m stretches of ditch would be funded through annual maintenance costs, and that the cost would be dependent on how many kilometres of open ditch existed and the number of applications received.

It was moved and seconded

*That Ditch and Watercourse Protection and Regulation Bylaw No. 7285 be introduced and given first, second and third readings.*

**CARRIED**

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## URBAN DEVELOPMENT DIVISION

### 4. **PROVINCIAL GOVERNMENT REVIEW OF ICBC PROGRAMS – POTENTIAL IMPACT ON CITY INITIATIVES**

(Report: Nov. 22/01, File No.: 1000-03-006) (REDMS No. 501727)

The Director, Transportation, Gordon Chan, reviewed the report with the Committee. In response to questions, he advised that although specific statistics were not available on the money saved, joint funding criteria required that a 200% return on the investment be achieved within two years of the implementation of these initiatives.

(Councillor Greenhill left the meeting at 4:50 p.m., and did not return to the meeting. Councillor Kumagai, as Vice Chair, assumed the Chair.)

A brief discussion ensued on the benefits of announcing to the public, the amount of money saved by the City as a result of the partnerships entered into with ICBC and other local agencies. Mr. Chan suggested that the information could be put onto the City's web site, and that such agencies as BCAA could help to publicize the savings. The suggestion was also made during the discussion that Richmond's three MLAs be contacted on this matter, and as a result, it was agreed that Part (1) of the recommendation would be amended to include the three MLAs.

It was moved and seconded

- (1) *That the benefits and success of the partnership between the City, other local agencies and ICBC in the undertaking of various pedestrian and traffic safety programs, be conveyed to ICBC, the Ministry of Finance, the Provincial Government ministry responsible for ICBC, and Richmond's three MLAs.*
- (2) *That the Provincial Government be urged to retain funding, through ICBC or another appropriate ministry or agency, for the pedestrian and traffic safety programs that provide net benefits to society.*
- (3) *That the above recommendations be conveyed to the member municipalities of the Greater Vancouver Regional District and the Union of British Columbia Municipalities.*

**CARRIED**

### 5. **PROPOSED TRAFFIC CALMING MEASURES – LANEWAY AT 5500 BLOCK OF MINORU BOULEVARD**

(Report: Nov. 22/01, File No.: 6450-01) (REDMS No. 551540)

The Manager, Transportation Planning, Victor Wei, briefly reviewed the report with Committee members.

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In reply to questions, Mr. Wei advised that the speed humps would be distinctively marked and that advance warning signs would be erected to alert motorists. He further explained that although it was not necessary to bring the proposal to Committee (and Council) for approval, staff felt that because of the impact which these speed humps would have on the adjacent area and the need to let the community know that these speed humps were being installed, that it would be prudent to advise the Committee and Council of the proposed change.

It was moved and seconded

- (1) *That the proposed traffic calming measures on the laneway at 5500 block of Minoru Boulevard, (as recommended in the report dated November 22<sup>nd</sup>, 2001, from the Director, Transportation), be endorsed to be implemented at an estimated cost of \$4,000.*
- (2) *That the source of funding for the recommended traffic calming measures be the 2001 Minor Capital Program.*
- (3) *That staff monitor the traffic conditions at this location for one year after the installation of the recommended traffic calming measures, at which time a follow-up report be presented to the Public Works and Transportation Committee on the findings of the monitoring activities.*

**CARRIED**

## 6. PROPOSED RECOMMENDATIONS TO IMPROVE RICHMOND'S TRANSIT SYSTEM

Mr. Chan introduced Mr. Glen Leicester, Manager, Implementation Planning, and Ms. Anna Dean, Director of Transportation Services with Coast Mountain Bus Company.

Mr. Leicester provided an update on transit services in Richmond, and the review which was undertaken to determine whether (i) the #98B line was operating efficiently, and (ii) other changes to transit routes in the City had improved the system. He then reported on the following issues:

- *travel times on the #98B line* - the southerly direction ran late, particularly in the p.m. peak hours, due to a number of factors, including the traffic diversion at the Moray Channel Bridge; traffic signal timings and optimization
- *reliability* – schedules were frequent, but the buses were not arriving when expected, especially on the southern route and particularly during the p.m. peak hours; again there were several factors, including the detour route at the Moray Channel Bridge, the lack of enforcement of the Granville Street HOV lanes, and chronic traffic congestion in certain areas of Vancouver

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- *overcrowding* – the 98B Line was crowded in the a.m. and p.m. peak hours because the buses on the southerly route were running late
- *98B Line routing to the Airport* – the service was much improved however passengers endeavouring to reach Oak Street now required additional transfers.

Mr. Leicester spoke about the system issues which also had to be addressed, including reconnecting with the Sexsmith Road park and ride lot, the lack of service to Garden City Road, and an increase in the need for transfers. He then reported on a proposal which would involve the resurrection of a number of Express buses to provide additional direct routes into Vancouver and Oak Street via No. 2 Road, and service from the Ironwood Shopping Centre, along Garden City Road to the Sexsmith Road park and ride.

In concluding his report, Mr. Leicester commented that the purpose of the local buses was to provide a feeder service to the central bus routes, and that it was reasonable to expect to require transfers for off-peak hours as long as waiting areas were safe.

Discussion then ensued briefly among Committee members and the delegation on the information provided to the Committee, during which they congratulated Mr. Leicester on his efforts. In response to questions, Mr. Leicester advised, with reference to the provision of transit service on Oak Street, that there was still a great deal of work to accomplish before this route was initiated.

Councillor Kumagai, in referring to the public meeting being held on December 11<sup>th</sup>, 2001, regarding transit issues, suggested that Mr. Leicester highlight the proposed changes at that meeting. He also asked that information be provided on the “HandyDart” system and its operation within Richmond as compared to other municipalities, as well as the purpose of the program.

(Councillor Barnes left the meeting at 5:30 p.m., and did not return.)

Councillor Kumagai thanked the delegation for attending the meeting.

## ADJOURNMENT

It was moved and seconded

*That the meeting adjourn (5:32 p.m.).*

**CARRIED**

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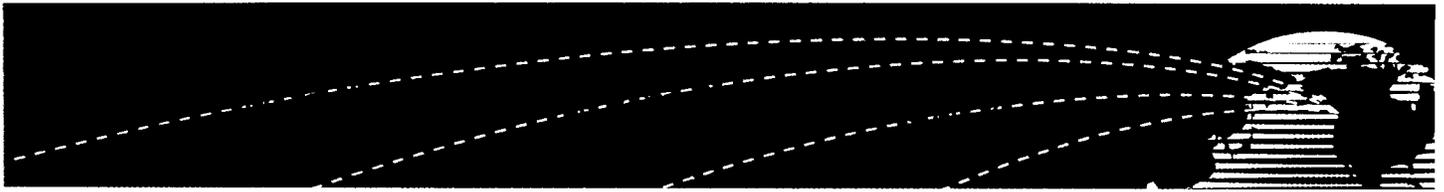
Certified a true and correct copy of the Minutes of the meeting of the Public Works & Transportation Committee of the Council of the City of Richmond held on Wednesday, December 5<sup>th</sup>, 2001.

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Councillor Lyn Greenhill  
Chair

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Fran J. Ashton  
Executive Assistant



SCHEDULE A TO THE MINUTES OF  
THE PUBLIC WORKS &  
TRANSPORTATION COMMITTEE  
MEETING HELD ON WEDNESDAY,  
DECEMBER 5<sup>TH</sup>, 2001.

# Dredging

*Each spring, during freshet, more than a million cubic metres of silt and sand are deposited in the lower Fraser River. To deal with this natural infilling, the Fraser River Port Authority carries out programmed maintenance dredging.*



*The Fraser Titan, a hopper dredge, carries out dredging of primary channels within the Port Authority's jurisdiction.*

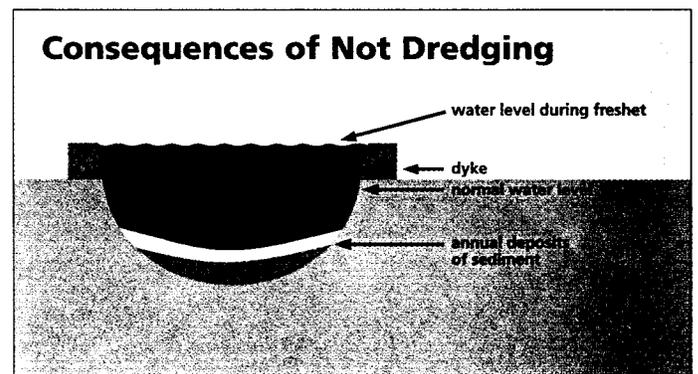
## Why dredge?

Each spring, the snowpack melts in regions bordering the Fraser River as far north as McBride. During this natural, annual cycle, millions of tonnes of water, sand, and silt drain into the river in a process called freshet.

This additional water and sediment are sent flowing down the river towards the Strait of Georgia. Approximately 1.3 million m<sup>3</sup> of that sediment are deposited in the Fraser River estuary along the way.

The increased sediment and water levels have several impacts on the lower Fraser River. For example, shipping channels infill, reducing the draft available for ships. The rising river bottom together with greater volumes of water can push water levels above dykes. And the pressure and velocity of water can damage piers and structures designed to direct the river's flow.

In order to prevent or lessen these impacts within its jurisdiction, the Fraser River Port Authority carries out a program of maintenance dredging.



*Without dredging, deposits of sediment accumulate and push normal water levels higher. Additional water during freshet can push levels above dykes (x) and cause flooding.*

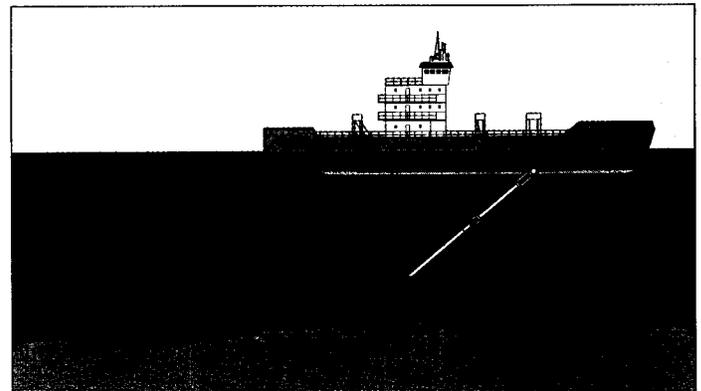


## Who takes care of dredging?

Canadian Coast Guard was responsible for dredging the Lower Fraser until 1998, at which time they withdrew their program. To ensure that flood potential was reduced and access for commercial shipping continued, the Fraser River Port Authority chose to begin a maintenance dredging program in 1999.

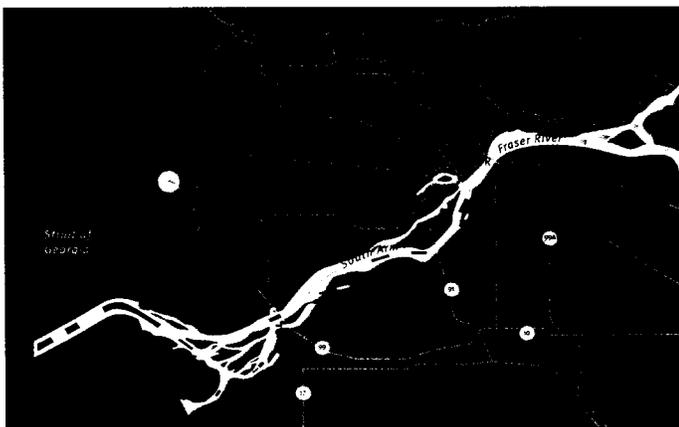
The Port Authority's program is designed to maintain a balance between the annual infill and the amount removed by dredging. That balance is achieved by working within the sand budget. This budget sets the year's maximum allowable volume of dredgeate at the same level as the estimated volume of natural infill.

The Public Works and Government Services branch of the federal government recommends the grades to which the river bottom should be dredged. These specifications are reviewed and monitored by the Dredging Management Advisory Committee of the Fraser River Estuary Management Program (FREMP). The Committee is made up of relevant government departments and agencies, such as Fisheries and Oceans Canada and the Ministry of Environment, Lands and Parks.



Bathymetric surveys reviewed daily by the Port Authority show where infilling has raised the grade of the river bottom. Above, a hopper dredge removes discrete areas of infill, lowering the river bottom to recommended grades.

The areas typically dredged by the Port Authority are shown below.



● Maintenance dredging

○ Areas previously dredged

## Where is dredging done?

Dredging is not required in most areas of the Lower Fraser. Where the river is "self-scouring", because of its natural flow pattern or training walls that keep the water's velocity high enough to prevent deposits, there is little or no infill. The Port Authority only dredges discrete areas within deep-sea and secondary channels that are naturally infilled each year. These areas include Sandheads Reach and Steveston Cut. Some of the secondary channels only require dredging every four or five years.

Bathymetric surveys, provided by Public Works and Government Services Canada, show water depths within the deep-sea channels. During freshet, the grade of the riverbed can change daily. Only the areas where the depth indicates a higher than specified grade are dredged.

Dredging stops when the specified grade has been reached and maintained or sub-grade dredging has prepared areas of heavy infill for the following year. To prevent damage to fish stocks, all dredging ceases during salmon fry migration and eulachon spawning between March and June (except under extraordinary circumstances).



## How is dredging done?

Different types of dredges are used in varying locations by Fraser River Pile and Dredge Ltd., which has been contracted to carry out the Port Authority's program until 2009. In the main channel, a trailing hopper "vacuums" sand off the bottom and stores it in a hopper onboard the vessel. The sand is later deposited in an approved underwater transfer pit, from where it is either transferred to an upland storage site or deposited at an approved ocean disposal site.

In other areas, such as the riverbed adjacent to Fraser Surrey Docks, a cutter suction dredge removes sand from the bottom and transfers it by pipeline to an upland storage site. Clamshell dredges, which scoop out sand, are used in tight areas alongside berths. They can remove small, isolated areas of infill.

All of the sand placed on upland storage sites is sold for use as construction pre-load or fill. These sales offset a small percentage of the cost of dredging. Any sand that cannot be sold is deposited in the Strait of Georgia, at an ocean disposal site designated by Environment Canada. The Port Authority pays Environment Canada a monitoring fee, to ensure that the deposits have no negative environmental impacts.



A cutter suction dredge removes infill from the river bottom and transfers it directly to an upland storage site.

## What are the benefits?

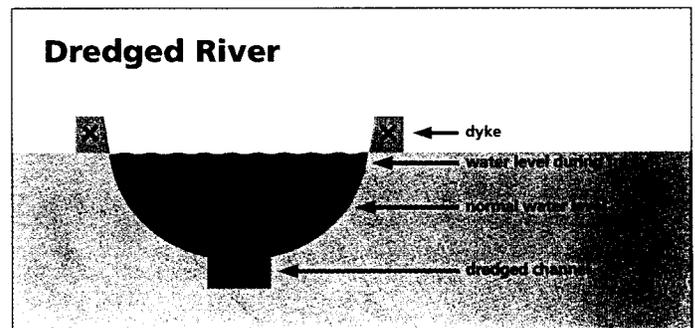
The benefits of programmed maintenance dredging are enjoyed by many businesses, both locally and nationally, and by communities bordering the shores of the Lower Fraser.



A deep-sea vessel approaches the berth at Fraser Surrey Docks.

Dredging means that foreign and domestic vessels transporting goods through Fraser Port can travel safely along designated shipping channels. The economic impacts of this trade and related transportation activities are enormous. Supporting trade and economic development is one of the Port Authority's mandates under the *Canada Marine Act*.

Dredging also plays a significant role in reducing the potential for flooding in the Lower Mainland during freshet. By lowering the river bottom in areas of infill, water levels and velocity are kept below the point where they would otherwise break through dykes and flood (based on the 200-year flood level) the municipalities bordering the river's shores.



In a dredged channel, normal water levels are low enough to accommodate higher water volumes during freshet. This significantly reduces the chances of flooding.



## Q & A: Frequently Asked Questions

### **How does the Port Authority balance dredging with environmental concerns?**

The Port Authority conducts its program in a responsible way. Assessments of the environmental impacts of dredging are ongoing. Where adverse effects have been identified, a variety of measures have been implemented to mitigate impacts. These measures include the following:

- in order to protect fish, such as eulachon, during their spawning and migrating seasons, dredging stops between March and June
- use of preventative practices — e.g. to avoid entraining fish fry near the surface of the river, pumps are only started up when the cutter or drag head is near the bottom
- maintenance dredging takes place in the deeper portions of the river which do not directly impact sensitive intertidal zones

### **Is the sand dredged from the Fraser River contaminated?**

The sediment dredged from the main channel, in areas covered by the Port Authority's program, is generally clean. Only occasional pockets of contaminated sand are found.

The sediment in the main channel is tested by the Port Authority every four years and must meet Environment Canada's criteria for ocean disposal. In secondary channels, testing happens on a one-off basis. When sand is disposed of on upland storage sites, it must meet BC Ministry of Environment, Lands and Parks' criteria for sediment contamination.

### **Does the Port Authority make a profit on dredging?**

In short, no! Dredging costs the Port Authority hundreds of thousands of dollars each year, money which comes out of overall operating revenue. Here is an example of dredging costs and revenues for main channel maintenance in a typical year:

COSTS: \$2.6 million

\$2.1 million (*dredging cost*) ✓

\$0.3 million (*survey costs*)

\$0.2 million (*ocean disposal cost*)

REVENUE: \$1.2 million (*recovery through sand sales*)

TOTAL COST: \$1.4 million

Additional funds are spent on secondary channel dredging, with little opportunity for selling the sand.

### **When does the Port Authority dredge?**

In a typical year, dredging starts in mid-August and runs until January or February. Dredging begins when the river's flow at Hope measures less than 5000m<sup>3</sup>/second. The shipping channels must be back to design grades by October 1. After this, sub-grade dredging concentrates on preparing areas with usually heavy infill for the next year's freshet. The length of the dredging period varies according to the freshet. There is no dredging between March and June, except in extraordinary circumstances.

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## GLOSSARY

**Freshet** A massive flow of water and sediment that is caused by melting snow from the Interior each spring and summer.

**Sand budget** This is the maximum extractable amount of dredge allowed annually within the lower Fraser River. It balances the amount of natural infill that occurs each year.

**Training walls** Structures that are built in a channel in order to train the river to flow in a certain direction.

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For more information please contact:

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