

**FRASER RIVER ESTUARY MANAGEMENT PROGRAM
ANNUAL REPORT
1998/99 SEDIMENT BUDGET AND DREDGING ACTIVITIES**

INTRODUCTION

The Fraser River Estuary Management Program (FREMP) is a partnership among federal, provincial and regional government agencies to foster coordinated and sustainable activities in the Fraser River estuary.

FREMP is guided by its Estuary Management Plan (EMP). Developed through a multi-stakeholder consensus process in 1994, the EMP outlines a shared vision, goals and an action plan for improving the environmental, economic, and social health of the estuary. A key target in the EMP is to manage the removal of sand from the Fraser River in a way that keeps the sediment regime of the river in balance. Through the work of its Dredge Management Advisory Committee, FREMP has developed a tool, called a sediment budget, which will allow FREMP to deliver on this key EMP target.

THE FREMP SEDIMENT BUDGET

FREMP's sediment budget will be used to ensure that the average amount of sediment removed over a five to ten year period will not change the shape of the river bed. This "averaging" approach acknowledges two things:

- that the amount of sediment deposited by the Fraser River's annual spring flood varies widely from year to year, and
- that even in years where little sediment flows into the estuary, water action may form underwater sandbars that need to be removed to prevent ships using the Fraser River from grounding. Conversely, in years where large amounts of sediment may enter the estuary, not all of it will pose a navigational hazard thus not all of it will need to be removed.

The FREMP sediment budget covers sand-sized sediment in the estuary as far upstream as Mission. For the purposes of the budget, "sand" is any material that has a grain size between 0.177mm and 2.00mm. All other materials are not considered in the budget because coarser material does not generally enter the estuary and finer materials do not deposit in the main navigation channel.

The budget is derived from a mathematical model which is described in detail in a report entitled "Lower Fraser River Sediment Budget Analysis" prepared for FREMP by Northwest Hydraulic Consultants (NHC) in February 1999. The NHC report is available from FREMP free of charge.

THE 1998/99 BUDGET

The sediment budget is calculated annually for what is called the "freshet" or "dredging" year. This is the period of time between freshets (and fish closures) during which dredging may occur. Generally, the dredging year runs from August of one calendar year to March of the next calendar year.

For the period from *August 1998 to March 1999*, it has been determined that a maximum of 0.78 million cubic metres¹ of sediment could have been removed without altering the shape of the river bed.

¹ NHC Report, page 10

DREDGING ACTIVITIES IN 1998/99

In the same period as indicated above (August 1998 to March 1999), 1.11 million cubic metres of sediment was removed from the navigation channel in the Main Arm of the Fraser River. This was removed as follows:

Number of dredging licenses issued:	4
Amount of material removed from the river (A):	1,508,899 m ³
Amount of material re-deposited to the river (B):	448,358 m ³
Amount of material disposed of at ocean disposal (C):	<u>51,934 m³</u>
Total removed from River = (A) – (B) + (C) =	1,112,475 m³

The attached map shows the locations where material was removed.

OVERALL BUDGET BALANCE

Dredging managers exceeded the year's budget by approximately 0.33 million cubic metres but were within the long-term deposition average of 1.2 million cubic metres. This exceedence of the annual deposition is more than offset by the higher than average sediment deposition, coupled with the lower than average removals, in the 1997/98 dredging season. As a result, the budget is currently more than balanced.

MEMBERS OF DMAC

The following agencies are represented on the FREMP Dredge Management Advisory Committee:

Fisheries and Oceans Canada (DFO)

- Habitat and Enhancement Branch
- Canada Coast Guard

Environment Canada (DOE)

- Water Survey Branch
- Ocean Disposal Control

Fraser River Port Authority (FRPA)

North Fraser Port Authority (FRPA)

Public Works and Government Services

Ministry of Environment, Lands and Parks

- Fish Protection

British Columbia Assets and Lands Corporation

FOR FURTHER INFORMATION

For further information on FREMP, the sediment budget, or this brochure, please contact FREMP:

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Location of Dredging in 1998/99

