

**FRASER RIVER ESTUARY MANAGEMENT PROGRAM  
ANNUAL REPORT  
1997/98 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 1997/98 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 1997 to March 1998*, it has been determined that a maximum of 3.3 million cubic metres of sediment could have been removed without altering the shape of the river bed.

## DREDGING ACTIVITIES IN 1997/98

In the same period as indicated above (August 1997 to March 1998), 1.47 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:	6
Amount of material removed from the river (A):	1,898,672 m <sup>3</sup>
Amount of material re-deposited to the river (B):	458,495 m <sup>3</sup>
Amount of material disposed of at ocean disposal (C):	<u>28,703 m<sup>3</sup></u>
<b>Total removed from River = (A) – (B) + (C) =</b>	<b>1,468,880 m<sup>3</sup></b>

The attached map shows the locations where material was removed.

## OVERALL BUDGET BALANCE

Dredging managers were well within the sediment budget in the 1997/98 dredging year.

## 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 (NFPA)

### 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 1997/98

