

**FREMP PROJECT REVIEW PROCESS
POST-PROJECT EVALUATION OF THE ENVIRONMENTAL REVIEW
COMMITTEE'S MITIGATION MEASURES
1998-2000**

Fraser River Estuary Management Program
Suite 501 - 5945 Kathleen Avenue
Burnaby, B.C.
V5H 4J7

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Copies Of This Report May Be Obtained From:

FRASER RIVER ESTUARY MANAGEMENT PROGRAM
Suite 501 - 5945 Kathleen Avenue
Burnaby, B.C.
V5H 4J7

Telephone: (604) 775 - 5756
Facsimile: (604) 775 - 5198

Table of Contents

Table of Contents iii
Executive Summary iv
Introduction 1
Study Design 2
Results and Discussion 8
Recommendations 10
References 10

List of Tables

Table 1. FREMP Applications For 1998 - List Of Projects Monitored4
FREMP Applications For 1999 - List Of Projects Monitored.....5
FREMP Applications For 2000 - List Of Projects Monitored.....7

List of Figures

Figure 1. Post-Construction Compliance (Number Per Year) 11
Figure 2. Post-Construction Compliance (Percent Per Year) 12

List of Appendices

APPENDIX A. FREMP Applications For 1998 - List Of Projects 14
FREMP Applications For 1999 - List Of Projects 18
FREMP Applications For 2000 - List Of Projects 22
APPENDIX B. FREMP Project Monitoring Results 25

**FREMP PROJECT REVIEW PROCESS
POST-PROJECT EVALUATION OF THE ENVIRONMENTAL REVIEW
COMMITTEE'S MITIGATION MEASURES
1998-2000**

Executive Summary

A post-project evaluation of the ERC's mitigation measures specified through the FREMP Co-ordinated Project Review Process was conducted for projects proposed during the years 1998 to 2000 inclusive. Of the total of 327 projects reviewed by the ERC during 1998 to 2000, 108 projects were monitored.

For almost all of the projects monitored, the projects that were constructed conformed to the project design reviewed in the respective application and the projects were in compliance with the ERC's mitigation measures.

Monitoring also indicated that compliance with the ERC's mitigation measures for projects proposed during the period from 1998 to 2000 has improved over previous evaluations of ERC mitigation measures conducted for projects proposed prior to 1998.

**FREMP PROJECT REVIEW PROCESS
POST-PROJECT EVALUATION OF THE ENVIRONMENTAL REVIEW
COMMITTEE'S MITIGATION MEASURES
1998-2000**

Introduction

The Fraser River Estuary Management Program (FREMP) project review process was originally set up in 1986 to facilitate the review of applications for works within the estuary. Now known as the Co-ordinated Project Review Process, the FREMP Environmental Review Committee (ERC) collectively reviews proposals before a federal, provincial or municipal authority makes any decision that would allow the project to proceed.

The Co-ordinated Project Review Process is managed by:

- The Lead Agencies, who serve as the prime contact for proponents throughout the process and issue decision statements;
- The Environmental Review Committee (ERC), which co-ordinates the response of the environmental review agencies; and
- The FREMP secretariat, who manages the central project files, facilitates the referrals to all agencies and provides information about the process to the public.

It is important to note that the co-ordinated project review process does not issue project approvals. Instead, it provides the Lead Agency with mitigation measures prior to making a decision about approving the project.

The objectives of this report are to:

- Conduct a post-project evaluation of implementation of and compliance with the ERC's project mitigation measures for those projects with application dates from 1998 to 2000 inclusive;
- Determine the conformity of the project design reviewed in the application to what was actually constructed and to document any significant deviations;
- Determine if compliance with the ERC's mitigation measures was achieved and, if not, why not and what actions were taken and;
- Assess whether the ERC's mitigation measures were both appropriate and effective including identification of any measures that were not identified but should have been.

Study Design

A post-project evaluation of the ERC's mitigation measures specified through the FREMP Co-ordinated Project Review Process was conducted for the years 1998 to 2000 inclusive.

For each project monitored, information was first collected through the review of the respective FREMP file. Site visits were made to those projects which were not already monitored. During each site visit, the project was assessed to determine if the project design reviewed in the application conformed to what was actually constructed and if compliance with the ERC's mitigation measures was achieved.

It should be noted that, given that the post-project evaluation will mainly consider completed projects, in most cases only those ERC mitigation measures applicable to post construction can be meaningfully monitored for compliance. Monitoring for compliance with mitigation measures applicable to post construction would include, but are not limited to, assessing the conformity of the project design reviewed in the application to what was actually constructed and whether the project was built without adversely impacting habitat features. In some cases, monitoring of projects during construction was undertaken. However, since many projects were not monitored full-time, it was not possible to determine whether works during the entire period of project construction were in compliance with the ERC's mitigation measures.

During the years 1998 to 2000 inclusive, 330 project applications were received by the ERC for review (Totals: 1998 - 114 applications, 1999 - 140 applications, 2000 - 86 applications). However, 3 applications were closed, two of which were re-activated under subsequent CPR applications (Totals: 1998 - 1, 1999 - 2, 2000 - 0). Therefore, only 327 projects were reviewed by the ERC during the years 1998 to 2000 inclusive.

Of the 327 projects, several could not be evaluated as they were cancelled prior to construction (Totals: 1998 - 20, 1999 - 24, 2000 - 20) and, in two cases, were completed prior to the ERC completing its review (Totals: 1998 - 1, 1999 - 1, 2000 - 0). In most cases, monitoring during project construction did not occur due to the ERC not being aware of when project construction works were being undertaken or due to time constraints (Totals: 1998 - 109, 1999 - 135, 2000 - 79). Many projects were also not monitored upon project completion for the following reasons:

1. The project site was inaccessible such as being located on the subtidal bed of the Fraser River or under buildings (for example, maintenance dredging, pipeline riverbed scour protection, pile-supported building substructure repairs) - (Totals: 1998 - 30, 1999 - 55, 2000 - 12).
2. The project site was dynamic or subject to change resulting in absence of information on site conditions at the time when the project was undertaken (especially if there is a long period of time between when the project is monitored and when the project was undertaken) (for example, foreshore cleanup projects) - (Totals: 1998 - 11, 1999 - 0, 2000 - 8).
3. The project did not involve physical works so monitoring was not possible upon project completion (for example, film stunts such as vehicles driving into the river off a dock and floating vessels exploding, bridge cleaning/painting, stormwater management plans, foreshore lease applications, etc.) - (Totals: 1998 - 1, 1999 - 1, 2000 - 2).

4. The project site was no longer accessible due to subsequent projects (for example, geotechnical investigation works in advance of construction of another project) - (Totals: 1998 - 0, 1999 - 2, 2000 - 1).
5. The project involved a temporary structures which were removed prior to monitoring - (Totals: 1998 - 0, 1999 - 1, 2000 - 0).
6. Time constraints did not allow the monitoring of some projects – (Totals: 1998 – 3, 1999 – 5, 2000 – 3)

In some cases, project monitoring was conducted, but the results are not included in this report as the monitoring was conducted as part of a legislative requirement by one of the ERC member agencies. For example:

1. The project required that Fisheries and Oceans Canada issue an "Authorization For Works Or Undertakings Affecting Fish Habitat" pursuant to Section 35(2) of the *Fisheries Act* and that a *Canadian Environmental Assessment Act* environmental assessment review be conducted. In these cases, monitoring has already been conducted (or is continuing) by the proponent during and after project construction as part of Fisheries and Oceans Canada's requirements - (Totals: 1998 - 7, 1999 - 9, 2000 - 7).
2. The project involved the issuance of a provincial Waste Management Effluent or Discharge Permit. In these cases, monitoring has been and is continuing to be conducted as required by provincial requirements - (Totals: 1998 - 5, 1999 - 2, 2000 - 0).

In summary, there were a total of 108 projects (Totals: 1998 - 36, 1999 - 39, 2000 - 33) which were monitored either during construction only (Totals: 1998 - 1, 1999 - 0, 2000 - 2) or upon project completion only (Totals: 1998 - 31, 1999 - 35, 2000 - 27) or both (Totals: 1998 - 4, 1999 - 4, 2000 - 4). A list of the projects monitored for this report is presented in Table 1. A list of projects monitored for this report as well as those projects which were not monitored (and the reason why) is presented in Appendix A.

Most of the monitoring was conducted by one of the ERC member agencies (mainly, Fisheries & Oceans Canada). However, in some cases, monitoring was conducted by independent monitors retained by proponents either by the proponent's initiative (Totals: 1998 – 3, 1999 – 1, 2000 – 0) or at the request of the ERC (Totals: 1998 – 1, 1999 – 2, 2000 – 1). Projects monitored by independent monitors by the proponent's initiative are marked by (IM) and projects monitored at the request of the ERC are marked by (ERC) in Table 1 and Appendix A.

FREMP Post-Project Evaluation

Table 1. FREMP Applications For 1998 - List Of Projects Monitored

CPR #	Project Description	Date Of Construction Monitoring	Date Of Post-Construction Monitoring
9801F001	John & Susan Russell - Riverbank Erosion Protection - Barnston Island	None	September 2, 1998
9801F002	Greater Vancouver Regional District - Watermain Scour Protection - Deas Island	None	May 22, 2001
9801F004	Pitt River Boat Club - Above-Ground Fuel Storage Facility - Deboville Slough / Pitt River	None	June 13, 2002
9802F012	Cedar Productions Inc. - Film Stunt With Fake Snow - Steveston - Richmond	March 21, 1998 (ERC)	Project Involved No Physical Works
9803F013	Burnaby Business Park - Water Intake For Irrigation & Drainage Outfall - Burnaby	None	October 7, 1998 & March 6, 2002
9803F014	Georgia Pacific Canada Inc. - Barge Berth - Surrey	None	April 8, 2002
9803F015	Roy Jantunen - Pile Supported Wharf, Ramp & Float - Richmond	None	March 6, 2002
9804F017	Seven Seas Fish Co. - Concrete Lock-Bock Retaining Wall - Ladner - Delta	None	March 4, 2002
9804F020	M. Belfon-Caines - Upgrade To Existing Rip Rap - 430 Centennial Parkway - Delta	None	March 1, 2002
9804F025	Forrest Marine Ltd. - Log Storage Dolphin Replacement - Coquitlam	None	April 15, 2002
9805F028	City of Richmond - Riverbank Erosion Protection - No. 2 & 3 Rd South Dyke - Richmond	June 22, 1998	March 14, 2002
9805F031	Breakaway Yachts Ltd. - Boat Ramp - Richmond	None	March 8, 2002
9805F032	Chemical Lime Co. of Canada Ltd. - Widening of Existing Wharf - Langley	None	April 29, 2002
9805F034	City of Burnaby - Stormwater Outfall Repairs - Boundary Rd & Fraser Park Dr - Burnaby	August 20, 1998 (IM)	August 20, 1998 (IM)
9805F037	The Corporation of Delta - Upgrade Of 2 Stormwater Outfalls - Westham Island	None	April 23, 2002
9806F041	Grand Hale Marine Products Ltd. - Upland Development - Mitchell Island	None	March 29, 2000
9806F042	Farrell Estates Ltd. - Marina Float Extension - Richmond	None	March 8, 2002
9807F053	BC Hydro & Power Authority - Fill Removal From Base Of Transmission Tower - Pitt River	None	April 12, 2002
9807F056	Lafarge Canada Inc. - Barge Loading/Unloading Facility - Richmond	None	April 23, 2002
9807F057	Fraser Wharves Ltd. - Vehicular Access Bridge - No 6 Rd & Steveston Hwy - Richmond	None	March 9, 2000
9807F059	Coquitlam Dyking District - Dyke Repairs - Pitt River North of Deboville - Pt Coquitlam	None	April 15, 2002
9808F066	C. Hume & W. Thorpe - Hazard Tree Removal - Green Slough - Ladner	None	April 23, 2002
9808F067	BC Ferry Corporation - Underground Feeder Cable - Tsawwassen Ferry Causeway	None	March 1, 2002
9808F068	John & Anne Oldham - Concrete Retaining Wall - 468 Centennial Parkway - Delta	None	October 9, 1998 & March 1, 2002
9808F069	F&O Canadian Coast Guard - Navigational Beacon LL299.6 Repairs - Crescent Beach	None	March 25, 2002
9809F079	City of Richmond - Stormwater Outfall Replacement - West Blundell Road - Richmond	None	November 8, 1998
9809F080	The Corporation of Delta - River Rd Widening At Nordel Way - Delta	None	March 14, 2002
9809F081	Ledcor Industries Ltd. - Directional Drill of Cable - Pitt River	November 27, 1998 (IM)	April 12, 2002
9810F087	BC Tel Mobility - Wireless Communications Tower - White Rock Pier - White Rock	None	March 25, 2002
9810F093	Langford Bulldozing & Demolition Ltd. - Fuelling Facility Demolition - New Westminster	None	April 10 and 15, 2002
9811F095	J. Perry - Hazard Tree Removal - Green Slough - Ladner	None	April 23, 2002
9811F099	Public Works & Government Services Canada - Stormwater Outfall - Annacis Island	None	June 27, 2002
9811F104	City of Port Coquitlam - Dyke Upgrade Deboville Slough to Broadway - Pitt River	None	April 12 and 15, 2002
9812F108	Golder Associates Ltd. - Sediment & Soil Remediation - 9250 Oak St - Vancouver	None	March 29, 1999
9812F111	Genstar Development Co. - Residential Development - Mary Hill - Pt Coquitlam	May 2 to October 16, 2001 (IM)	October 16, 2001 (IM)
9812F112	Star of Fortune - Upland Building & Riverboat Moorage - Westminster Quay	None	April 8, 2002

FREMP Post-Project Evaluation

Table 1. FREMP Applications For 1999 - List Of Projects Monitored

CPR #	Project Description	Date Of Construction Monitoring	Date Of Post-Construction Monitoring
9901F002	MacMillan Bloedel Ltd. - Construction of Road - Hopcott to 68th St - Tilbury Island	None	March 1, 2002
9901F003	The Corporation of Delta -Brandrith Drainage Pump Station Upgrade – Delta	None	March 1, 2002
9901F005	Arrow Transportation Systems Inc. - Travel Lift Facility - Mitchell Island	None	March 6, 2002
9901F010	Beedie Construction Co. Ltd. - Industrial Building Development - 7430 Hopcott Road - Tilbury Island	August 9, 2001	March 1, 2002
9902F012	International Forest Products Ltd. - Timber Retaining Wall Replacement Hammond Cedar - Maple Ridge	November 1999, June 2000 and	October 2001 (ERC)
9902F016	City of Coquitlam - Floodbox Removal - Under Port Mann Bridge - Coquitlam	None	April 15, 2002
9902F017	Agra Marine Construction Ltd. - Wharf & Barge Moorage - South End of Nelson Road - Richmond	None	March 28, 2002
9902F018	City of Port Coquitlam - Viewing Platforms & Landscaping - Pitt River - Port Coquitlam	None	April 12 and 15, 2002
9903F020	Westcoast Cellulofibre - Steel Sheet Pile Retaining Wall and Steel Pipe Pile Installation - Vancouver	None	March 14, 2002
9903F021	Fraser Wharves Ltd. - Riverbank Stabilization - South End of No. 6 Road - Richmond	None	April 23, 2002
9903F025	City of Surrey - Stormwater Outfall - Crescent Beach Marina - Surrey	None	August 26, 1999 & August 20, 2001
9904F040	D. Anslow - Erosion Protection - 536 Centennial Pkwy - Delta	None	March 1, 2002
9904F045	Equitable Real Estate Investment Corp. - Riverbank Stabilization - Mitchell Island	None	March 6, 2002
9905F049	Ocean Construction Supplies - Barge Ramp Upgrade - Mitchell Island - Richmond	None	March 28, 2002
9905F050	Greater Vancouver Regional District - Trail Construction - Derby Reach Regional Park - Langley	None	April 8, 2002
9905F051	Southlands River Trail & Dyke Committee - Dyke Repairs - Vancouver	None	March 28, 2002
9905F053	H. Veldhuis - Seawall Upgrade - 328 Centennial Parkway - Delta	None	March 1, 2002
9905F055	Vancouver International Airport Authority - Seair Fuel Dock Upgrade - Sea Island	None	March 14, 2002
9906F059	City of Richmond - Pump Station Upgrade - 13151 No. 2 Road - Richmond	None	March 14, 2002
9906F061	L. Bergman - Removal of Hazard Trees - Green Slough - Ladner	None	April 23, 2002
9906F062	The Corporation of Delta - Phase I River Road Upgrade - Ladner	None	March 4, 2002
9907F068	Burlington Northern & Sante Fe Railway - Replacement of Serpentine Rail Bridge - Surrey	July 13 to Sept. 16, 1999 (IM)	April 23, 2002
9907F073	Queenswater Developments Inc. - Demolition/Removal of Structures On Foreshore - Annacis Channel	None	August 04, 1999
9908F074	Fraser Wharves Ltd. - Riverbank Stabilization Repairs - East End Steveston Hwy - Richmond	None	April 23, 2002
9908F082	Ducks Unlimited Canada - Water Control Structure Repairs - Alaksen Wildlife Management Area	None	April 11, 2002
9909F086	The Corporation of Delta - Beach Access Repairs - East End 16th Avenue - Delta	None	March 1, 2002
9909F089	S. Lam - Single Family Residence & Erosion Protection - 704 Tsawwassen Beach Rd - Delta	None	June 12, 2002
9909F091	L. & G. Gillespie - Single Family Residence & Erosion Protection - 782 Tsawwassen Beach Rd - Delta	None	June 12, 2002
9909F094	Westcoast Cellulofibre - Steel Sheet Pile Retaining Wall - Vancouver	None	March 14, 2002
9909F097	Canadian National - Riverbank Stabilization Repairs and Vehicle Pullouts - Surrey	None	April 8, 2002
9910F106	Lantic Real Property Ltd. Partnership - Former Chatterton Petrochemical Remediation - Tilbury Island	None	October 2, 2001 (ERC)
9910F107	City of Burnaby - Pile-Supported Public Lookout - Mouth of Sussex Creek - Burnaby	None	March 6, 2002
9911F114	S.M. Properties Ltd. - Dock Expansion - 3827 River Road West - Ladner	None	March 4, 2002
9911F115	Golder Associates Ltd. - River Bank Stabilization - 9250 Oak Street - Vancouver	None	March 29, 1999
9911F116	Greater Vancouver Regional District - Pedestrian Bridge - Colony Farm - Coquitlam River - Coquitlam	None	April 15, 2002
9911F117	City of Richmond - River Bank Erosion Protection Works - Terra Nova / River Road - Richmond	March 9, 2000	April 05, 2000
9911F124	BC Ferry Corporation - Tsawwassen Causeway Erosion Protection Repairs - Delta	None	June 12, 2002

9912F130	City of Richmond - Dyke Upgrade & Repairs - 9000 Block River Rd - Richmond	None	February 15, 2000
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CPR #	Project Description	Date Of Construction Monitoring	Date Of Post-Construction Monitoring
9912F132	Nickel Bros. House Moving - Loading of House On Barge - 2962 O'Hara Lane- Crescent Beach - Surrey	January 21, 2000	Project Involved No Physical Works

FREMP Post-Project Evaluation

Table 1. FREMP Applications For 2000 - List of Projects Monitored

CPR #	Project Description	Date Of Construction Monitoring	Date Of Post-Construction Monitoring
0001F001	Arrow Transportation Systems - Boat Ramp - 11580 Mitchell Rd - Mitchell Is - Richmond	None	March 6, 2002
0002F008	Vancouver Port Authority - Deltaport Pod 3 - Stormwater Outfalls & Retaining Wall - Delta	May 30, 2000	None
0002F010	Richmond Plywood Corporation - Steel Sheet Pile Wall - North End No. 6 Road - Richmond	None	May 8, 2000
0002F012	Vancouver Marina - Maintenance Dredging - 8331 River Road - Richmond	March 6, 2002	Site Sub-tidal - Not Accessible
0002F013	S. Lam - Stormwater Discharge - Tsawwassen Beach - Tsawwassen	None	June 12, 2002
0002F014	BC Gas - Direction Drill of Gas Pipeline - Campbell River - Surrey	August 25-31, 2000	August 31, 2000
0002F015	The Corporation of Delta - Replacement of Boat Launch Ramp - Centennial Beach - Tsawwassen	July 11, 2000	September 17, 2001
0003F017	The Corporation of Delta - Phase II Widening of River Road - River Road East of Admiral Blvd - Delta	None	March 4, 2002
0003F020	BC MELP - Pitt River Dike Repairs (Formerly 9807F059) - North of Deboville Slough - Coquitlam	None	April 15, 2002
0003F022	Intracorp Developments - Permanent Storm Outfall - Pacific Reach Business Park - Coquitlam	None	April 8 and 15, 2002
0004F027	Pacific Custom Log Sort - Reconstruction of Bulkhead & Ramp - Fraser Mills - Coquitlam	None	April 8, 2002
0004F028	Valley Towing Ltd. - Relocation of Scow Moorage Area - Near Patullo Bridge - New Westminster	None	April 15, 2002
0004F033	City of White Rock - Stormwater Outfall - Marine Drive - White Rock	None	March 23, 2001
0005F038	Weyerhaeuser Canada Ltd. - Timber Wall Reinforcement - New Westminster Lumber	None	March 6, 2002
0005F039	Doman Forest Products - Timber Wall Reinforcement - Silvertree Division - Vancouver	None	March 14, 2002
0005F040	Terminal Forest Products - Steel Sheet Pile Wall - Mitchell Island - Richmond	None	March 6, 2002
0005F043	CIPA Lumber - Log Storage - Annacis Channel - Delta	August 19, 2000	March 1, 2002
0006F047	City of Surrey - Tannery Road Park Development - North Foot of Tannery Road - Surrey	None	April 8, 2002
0006F048	City of New Westminster - Pile Supported Deck Extension - Westminster Quay - New Westminster	None	April 8, 2002
0006F049	The Corporation of Delta - 3rd Avenue Stormwater Outlet Works - Tsawwassen - Delta	None	February 19, 2001
0007F057	Greater Vancouver Regional District - Riverbank Erosion Protection Repairs - Deas Island - Delta	None	September 27, 2000
0008F058	The Corporation of Delta - Zellwegger Pump Station Replacement - Westham Island - Delta	December 12, 2000 (ERC)	February 3 & March 14, 2001 (ERC)
0008F062	Greater Vancouver Regional District - Underground Waterline Connection - Musqueam Creek	None	March 28, 2002
0008F064	J. Morrison & J. Adams - Single Family Residence - 184 Centennial Pkwy - Tsawwassen / Delta	None	March 1, 2002
0008F067	Lawrence Stephen - Wharf on Foreshore - Canoe Pass - Ladner / Delta	None	March 4, 2002
0008F073	Rogers AT&T Wireless - Telecommunications Tower - Tilbury Slough - Delta	None	March 25, 2002
0009F074	City of Richmond - Riverbank Stabilization - Dyke - No. 4 Road & Shell Road - Richmond	None	March 26, 2001
0009F075	Doman Forest Products - Vancouver Sawmill - Riprap Reinforcement of Existing Timber Wall - Vancouver	None	March 14, 2002
0011F080	Burlington Northern Sante Fe Railway - Submarine Power Cable Installation - Nicomekl River Rail Bridge	None	March 25, 2002
0011F081	City of Richmond - Riverbank Stabilization - East Of South End No. 7 Road - Richmond	None	September 3, 2002
0011F082	Gawley & Son Contracting - Barge Unloading Facility - Near Mouth of Yorkson Creek - Langley	April 29, 2002	Project Cancelled
0011F084	Tsawwassen First Nation - Youth Centre & Skateboard Park - Tsawwassen Drive	None	March 1, 2002
0011F086	Greater Vancouver Regional District - Waterman Scour Protection - South Shaughnessy St - Vancouver	None	March 14, 2002

Results and Discussion

Of the total of 327 projects reviewed by the ERC during 1998 to 2000, 108 projects were monitored.

For most of the projects monitored, the project design reviewed in the respective application conformed to what was actually constructed. However, for 5 of the projects monitored, the project design reviewed did not conform to what was actually constructed. Of these 5 projects, only 1 project resulted in adverse impact to fish and wildlife habitat while habitat was not significantly impacted for the remaining 4 projects.

For most of the projects monitored, the projects were also in compliance with the ERC's mitigation measures. Only 1 of the projects monitored was not in compliance with one of the ERC's mitigation measures. However, for 4 of the projects monitored, it is not known if the projects were in compliance with the ERC's mitigation measures or not.

In general, post-construction monitoring indicates that compliance with the ERC's mitigation measures has improved over previous evaluations.

1998 Results

Of the 36 projects reviewed in 1998, 1 was monitored during construction only, 31 were monitored upon project completion only and 4 were monitored both during and post construction.

It is important to realize that, since many projects were not monitored full-time, it was not possible to determine whether works during the entire period of project construction for each of the projects was in compliance with the ERC's mitigation measures. However, of the 5 projects monitored during construction, 1 project (FREMP 9803F013) did not appear to be in compliance with the mitigation measures of the ERC letter. Monitoring indicated that soil was placed on the riverbank although the ERC letter stated that "Construction or excavation wastes, overburden, soil, or any other substance deleterious to aquatic life must be disposed of or placed in a manner so as to prevent their entry into any water course or water body". However, no action was taken at the time and subsequent monitoring indicated that soil was no longer present on the riverbank.

Of the 35 projects monitored upon project completion, 3 projects did not appear to be completed as described in the FREMP application. However, in 2 cases (FREMP 9803F015 and FREMP 9806F041), it appeared that the projects were built without significantly adversely impacting habitat features. In the remaining case (FREMP 9805F031), a grassed riparian area that was to be retained was paved. Fisheries and Oceans Canada requested that pavement be removed but that some paved area could remain as long as the area where pavement was removed was vegetated with shrubs. To date, pavement has been removed as requested by Fisheries and Oceans Canada but vegetating the area with shrubs is not planned until later in 2003.

For 4 of the projects monitored upon project completion, it is not known if the projects were in compliance with the ERC's mitigation measures. In 2 of these cases, the ERC requested water quality sampling and analysis but it is not known if the sampling and analysis was undertaken. In 1 case (FREMP 9803F013), water quality sampling and analysis of effluent from a cranberry farm was to be submitted to the ERC once the proposed cranberry farm was in operation. However, it is not known if the cranberry farm is currently in operation. The ERC needs to follow-up with the proponent to request an update on the status of the cranberry farm and, if the cranberry farm is operating, request the water quality analysis information. In the other case (FREMP 9808F067), an environmental assessment in the vicinity of an underground fuel tank was to be undertaken and the proponent was advised that, if hydrocarbon contamination is indicated, remediation of the site under provincial legislation may be required. However, it is not known if an environmental assessment was undertaken as the ERC letter did not specify that that results of the assessment were to be forwarded to the ERC. In the other 2 cases, trees were to be removed for safety reasons (FREMP 9805F028 and FREMP 9808F066) and the ERC advised that for every tree removed two replacement trees were to be planted. However, in each case, it is not known how many trees were actually removed and if the trees removed were replaced as specified by the ERC.

1999 Results

Of the 39 projects reviewed in 1999, no projects were monitored during construction only, 35 were monitored upon project completion only and 4 were monitored both during and post construction.

Of the 4 projects monitored during construction, all appeared to be in compliance with the mitigation measures of the ERC letter. However, it is important to realize that, since many projects were not monitored full-time, it was not possible to determine whether works during the entire period of project construction for each of the projects was in compliance with the ERC's mitigation measures.

Of the 39 projects monitored upon project completion, 2 projects (FREMP 9903F020 and FREMP 9909F094) did not appear to be as described in the FREMP application but in both cases it appeared that the project was built without adversely impacting habitat features.

2000 Results

Of the 33 projects reviewed in 2000, 2 projects were monitored during construction only, 27 were monitored upon project completion only and 4 were monitored both during and post construction.

Of the 6 projects monitored during construction, all appeared to be in compliance with the mitigation measures of the ERC letter. However, it is important to realize that, since many projects were not monitored full-time, it was not possible to determine whether works during the entire period of project construction for each of the projects was in compliance with the ERC's mitigation measures.

Of the 31 projects monitored upon project completion, all projects appeared to be as described in the FREMP application and it appeared that all projects were built without adversely impacting habitat features.

Monitoring results for projects not in compliance with ERC mitigation measures are presented in Appendix B.

Comparison With Past Years

Information on monitoring of projects during construction was not collected for past evaluation reports so comparisons with past evaluations was not possible.

Information on monitoring post construction is presented in Figure 1 and Figure 2. The percentage of projects monitored that were in compliance with the ERC's mitigation measures post construction has generally improved over previous evaluations.

Recommendations

For most of the projects monitored, the project design reviewed in the respective application conformed to what was actually constructed and the projects were in compliance with the ERC's mitigation measures. However, of concern were the few cases where it was not known if the projects were in compliance with the ERC's mitigation measures. In these cases, the ERC requested water quality sampling, but it was not known if the sampling was undertaken. In other cases, the information reviewed by the ERC did not specify how many trees were to be removed for safety reasons and it was not known if the trees that were removed were replaced as specified by the ERC. In order to address these concerns, the following is recommended.

1. If the ERC requests that water quality sampling and analysis for a project, the ERC must clearly specify that the water quality analysis be submitted to the ERC. The ERC must also keep track of such projects where water quality sampling and analysis is requested. In cases where water quality sampling and analysis is not provided, the ERC must follow-up in a timely manner with written correspondence requesting that the requested information be submitted.
2. For projects involving the removal of trees for safety reasons (i.e. hazard trees), the ERC must require that an accurate inventory of the trees to be removed be provided. The ERC must also require information on the specific location and how many trees will be replanted to replace the removed trees.

Figure 1. Post-Construction Compliance
(Number Per Year)

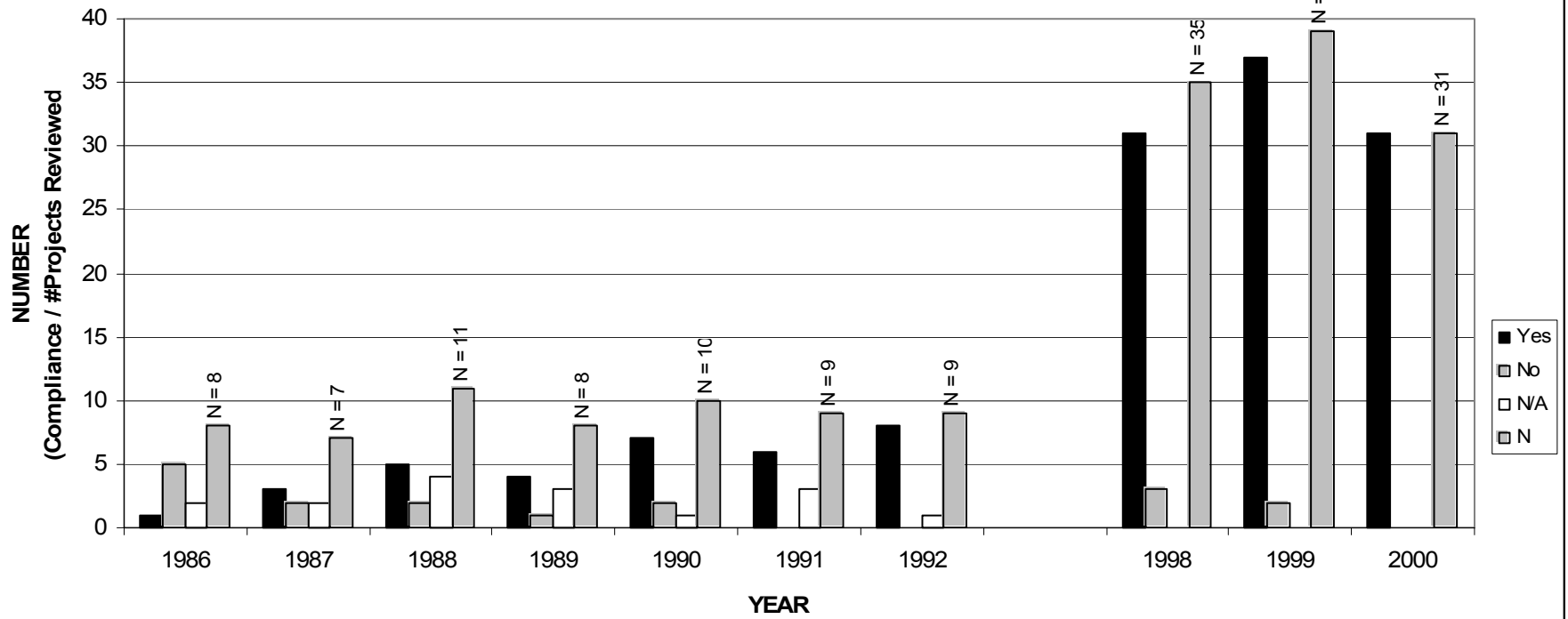
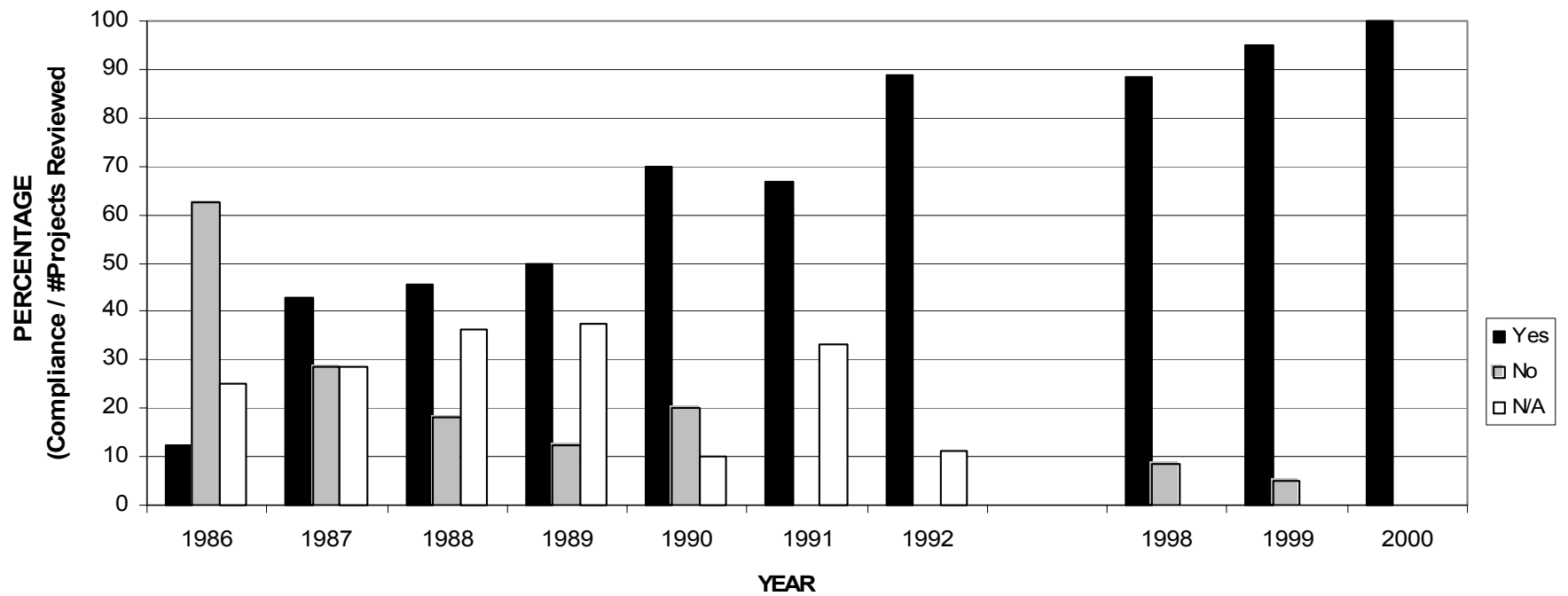


Figure 2. Post-Construction Compliance
(Percent Per Year)



References

Adams, M.A., and E.D.S. Northrup. 1994. Management Paper: A Post-Project Evaluation of Compliance with Environmental Review Committee Conditions of Approval. Fraser River Estuary Management Program Management Report CPR-94-01. 21p + appendix.

FREMP PROJECT REVIEW PROCESS
POST-PROJECT EVALUATION OF THE ENVIRONMENTAL
REVIEW COMMITTEE'S MITIGATION MEASURES
1998-2000

APPENDIX A

FREMP Post-Project Evaluation
Appendix A. FREMP Applications For 1998 - List Of Projects

CPR #	Project Description	Construction Monitoring?	Post-Construction Monitoring?
9801F001	John & Susan Russell - Riverbank Erosion Protection - Barnston Island	None	September 2, 1998
9801F002	Greater Vancouver Regional District - Watermain Scour Protection - Deas Island	None	May 22, 2001
9801F003	Greater Vancouver Regional District - Watermain Scour Protection - Tilbury Island	Project Cancelled	Project Cancelled
9801F004	Pitt River Boat Club - Above-Ground Fuel Storage Facility - Deboville Slough / Pitt River	None	June 13, 2002
9801F005	North Fraser Harbour Commission - Maintenance Dredging - Pt Grey Barge Moorages	None	Site Sub-tidal - Not Accessible
9801F006	Construction Aggregates - Maintenance Dredging - Burr Landing - Delta	None	Site Sub-tidal - Not Accessible
9802F007	Arrow Transportation Systems Inc. - Barge Ramp Facility - Mitchell Island	Project Cancelled	Project Cancelled
9802F008	Trans Mountain Pipeline - Pipeline Scour Protection - Downstream of Pt Mann	None	Site Sub-tidal - Not Accessible
9802F009	Coast Mountain Hardwoods - Maintenance Dredging - Tilbury Island	None	Site Sub-tidal - Not Accessible
9802F010	Public Works & Government Services Canada - Maintenance Dredging - Cannery Channel	None	Site Sub-tidal - Not Accessible
9802F011	The Corporation of Delta - Rezoning/Subdivision - 4227/4231//4249 River Rd - Ladner	Project Cancelled	Project Cancelled
9802F012	Cedar Productions Inc. - Film Stunt With Fake Snow - Steveston - Richmond	March 21, 1998 (ERC)	Project Involved No Physical Works
9803F013	Burnaby Business Park - Water Intake For Irrigation & Drainage Outfall - Burnaby	None	October 7, 1998 & March 6, 2002
9803F014	Georgia Pacific Canada Inc. - Barge Moorage - Surrey	None	April 8, 2002
9803F015	Roy Jantunen - Pile Supported Wharf, Ramp & Float - Richmond	None	March 6, 2002
9803F016	Burlington Northern Sante Fe Railway - Bridge Replacement - Serpentine River	Project Cancelled	Project Cancelled
9804F017	Seven Seas Fish Co. - Concrete Lock-Block Retaining Wall - Ladner - Delta	None	March 4, 2002
9804F018	Vancouver Aquarium - Foreshore Cleanup - Fraser River Foreshore Park - Vancouver	None	Project In Dynamic Environment
9804F019	Friends Of Boundary Bay - Foreshore Cleanup & Riparian Planting - Tilbury Cement - Delta	None	Project In Dynamic Environment
9804F020	M. Belfon-Caines - Upgrade To Existing Rip Rap - 430 Centennial Parkway - Delta	None	March 1, 2002
9804F021	CP Rail / Envirochem - Sediment Sampling - Foot of Willard Street - Burnaby	None	Site Sub-tidal - Not Accessible
9804F022	Howe Sound Pulp & Paper - Maintenance Dredging - Vancouver	None	Site Sub-tidal - Not Accessible
9804F023	Vancouver International Airport Authority - Donor Marsh Collection - McDonald Slough	None	Project In Dynamic Environment
9804F024	Genstar Development - Residential Development & Riverbank Stabilization - Mary Hill - Port Coquitlam	Project Cancelled	Project Cancelled
9804F025	Forrest Marine Ltd. - Log Storage Dolphin Replacement - Coquitlam	None	April 15, 2002
9804F026	Lucille Johnston - Riverbank Erosion Protection - Barnston Island	None	Project Cancelled
9804F027	Hillcon Developments - Donor Marsh Collection - Annacis Channel & McDonald Slough	None	Project In Dynamic Environment
9805F028	City of Richmond - Riverbank Erosion Protection - No. 2 & 3 Rd South Dyke - Richmond	June 22, 1998	March 14, 2002
9805F029	Barnston Island Dyking Commission - Vegetation Maintenance On Dyke - Barnston Island	None	Project In Dynamic Environment
9805F030	Bader, Davidson & Dale - Waste Management Permit Application - Dyke Road - Richmond	N/A	Monitoring Conducted - WM Permit
9805F031	Breakaway Yachts Ltd. - Boat Ramp - Richmond	None	March 8, 2002
9805F032	Chemical Lime Co. of Canada Ltd. - Widening of Existing Wharf - Langley	None	April 29, 2002
9805F033	Tilbury Cement - Waste Management Permit Application - Tilbury Island - Delta	N/A	Monitoring Conducted - WM Permit
9805F034	City of Burnaby - Stormwater Outfall Repairs - Boundary Rd & Fraser Park Dr - Burnaby	August 20, 1998 (IM)	August 20, 1998 (IM)
9805F035	City of New Westminster - Front Street Widening - New Westminster	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
9805F036	Riverport Business Park - Waste Management Permit Application - East Steveston Highway	N/A	Monitoring Conducted - WM Permit
9805F037	The Corporation of Delta - Upgrade of 2 Stormwater Outfalls - Westham Island	None	April 23, 2002
9806F038	City of Surrey - Ward's Marina Upgrade - Nicomekl River - Surrey	Project Cancelled	Project Cancelled
9806F039	BC Ministry of Agriculture, Food & Fisheries - Salicornia Harvesting - Boundary Bay	Project Cancelled	Project Cancelled

CPR #	Project Description	Construction Monitoring?	Post-Construction Monitoring?
9806F040	Acme-Delta Landfill - Treatment of Contaminated Soils - Fraser Richmond - Richmond	Project Cancelled	Project Cancelled
9806F041	Grand Hale Marine Products Ltd. - Upland Development - Mitchell Island	None	March 29, 2000
9806F042	Farrell Estates Ltd. - Marina Float Extension - Richmond	None	March 8, 2002
9807F043	City of White Rock - Maintenance Dredging - White Rock Pier	Project Cancelled	Project Cancelled
9807F044	Tsawwassen First Nation - Marina Development - Roberts Bank	Project Cancelled	Project Cancelled
9807F045	Tilbury Cement - Maintenance Dredging - Tilbury Island - Delta	None	Site Sub-tidal - Not Accessible
9807F046	Delta Cedar Products - Maintenance Dredging - Delta	None	Site Sub-tidal - Not Accessible
9807F047	International Forest Products Western Whitewood - Maintenance Dredging - New Westminster	None	Site Sub-tidal - Not Accessible
9807F048	Scott Paper - Maintenance Dredging - New Westminster	None	Site Sub-tidal - Not Accessible
9807F049	Terminal Forest Products - Maintenance Dredging -	None	Site Sub-tidal - Not Accessible
9807F050	Terminal Forest Products - Maintenance Dredging -	None	Site Sub-tidal - Not Accessible
9807F051	Doman Forest Products - Maintenance Dredging -	None	Site Sub-tidal - Not Accessible
9807F052	Richmond Plywood - Maintenance Dredging - Richmond	None	Site Sub-tidal - Not Accessible
9807F053	BC Hydro & Power Authority - Fill Removal From Base Of Transmission Tower - Pitt River	None	April 12, 2002
9807F054	Lafarge Canada Inc. Richmond - Waste Management Permit Application - Richmond	N/A	Monitoring Conducted - WM Permit
9807F055	Genstar Development - Residential Development and Riverbank Stabilization - Port Coquitlam	Project Cancelled	Project Cancelled
9807F056	Lafarge Canada Inc. - Barge Loading/Unloading Facility - Richmond	None	April 23, 2002
9807F057	Fraser Wharves Ltd. - Vehicular Access Bridge - No 6 Rd & Steveston Hwy - Richmond	None	March 9, 2000
9807F058	Golder Associates - Geotechnical Investigation Works - 9250 Oak Street - Vancouver	None	Site Sub-tidal - Not Accessible
9807F059	Coquitlam Dyking District - Dyke Repairs - Pitt River North of Deboville - Pt Coquitlam	None	April 15, 2002
9807F060	Fraser River Harbour Commission - Tilbury Transfer Pit - Tilbury Island - Delta	None	Site Sub-tidal - Not Accessible
9807F061	Vancouver Aquarium - Foreshore Cleanup - Britannia Heritage Shipyard - Richmond	None	Project In Dynamic Environment
9807F062	Vancouver Aquarium - Foreshore Cleanup - Fraser River Foreshore Park - Vancouver	None	Project In Dynamic Environment
9808F063	Vancouver Aquarium - Foreshore Cleanup - Deas Island Regional Park - Delta	None	Project In Dynamic Environment
9808F064	S&R Sawmills - "F" Mill - Surrey	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
9808F065	City of Port Coquitlam - Dominion Pump Replacement - Port Coquitlam	Project Proceeded Without ERC	Letter
9808F066	C. Hume. & W. Thorpe - Hazard Tree Removal - Green Slough - Ladner	None	April 23, 2002
9808F067	BC Ferry Corporation - Underground Feeder Cable - Tsawwassen Ferry Causeway	None	March 1, 2002
9808F068	John & Anne Oldham - Concrete Retaining Wall - 468 Centennial Parkway - Delta	None	October 9, 1998 & March 1, 2002
9808F069	F&O Canadian Coast Guard - Navigational Beacon LL299.6 Repairs - Crescent Beach	None	March 25, 2002
9809F070	Colebrook Dyking District - Dyke Maintenance - North Serpentine River	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
9809F071	S&R Sawmills - "F" Mill Jackladder - Surrey	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
9809F072	The Corporation of Delta - Stormwater Outfall - Wellington Pt Park	Project Cancelled	Project Cancelled
9809F073	Pitt River Boat Club - Marina Upgrade / Expansion - Deboville Slough - Pt Coquitlam	Project Cancelled	Project Cancelled
9809F074	The Corporation of Delta - Repairs To Existing Boat Ramp - Wellington Pt Park	File Closed	File Closed
9809F075	Crescent Beach Marina - Maintenance Dredging - Mouth of Nicomekl River - Surrey	None	Site Sub-tidal - Not Accessible
9809F076	Candu Management - Riverbank Stabilization - Brunette River - New Westminster	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
9809F077	CP Rail - Submarine Cable Installation - Marpole Bridge - Vancouver	None	Site Sub-tidal - Not Accessible
9809F078	Canadian Forest Products - Boat Ways Demolition - Eburne Sawmill - Vancouver	Project Cancelled	Project Cancelled
9809F079	City of Richmond - Stormwater Outfall Replacement - West Blundell Road - Richmond	None	November 8, 1998
9809F080	The Corporation of Delta - River Rd Widening At Nordel Way - Delta	None	March 14, 2002
9809F081	Ledcor Industries - Directional Drill of Cable - Pitt River	November 27, 1998 (IM)	April 12, 2002

CPR #	Project Description	Construction Monitoring?	Post-Construction Monitoring?
9809F082	Vancouver Aquarium - Foreshore Cleanup - Gladstone Park - Vancouver	None	Project In Dynamic Environment
9809F083	Vancouver Aquarium - Foreshore Cleanup - Mary Hill Industrial Park - Pt Coquitlam	None	Project In Dynamic Environment
9809F084	J. Ranger - Hazard Tree Removal - Green Slough – Ladner	None	None
9810F085	Vancouver International Airport Authority - Airport Connector Bridge	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
9810F086	MacMillan Bloedel - Foreshore Cleanup - Tree Island - New Westminster	None	Project In Dynamic Environment
9810F087	BC Tel Mobility - Wireless Communications Tower - White Rock Pier - White Rock	None	March 25, 2002
9810F088	Vancouver International Airport Authority - Barge Unloading Facility - Sea Island	Project Cancelled	Project Cancelled
9810F089	Fraser River Harbour Commission - Navigation Channel Maintenance Dredging	None	Site Sub-tidal - Not Accessible
9810F090	Fraser River Harbour Commission - No. 5 Road Transfer Pit - Richmond	None	Site Sub-tidal - Not Accessible
9810F091	Pitt River Quarries Ltd. - Barge Loading Facility - Pitt River	None	None
9810F092	Greater Vancouver Regional District - Sewer Forcemain Installation - Nicomekl River	None	Site Sub-tidal - Not Accessible
9810F093	Langford Bulldozing & Demolition Ltd. - Fuelling Facility Demolition - New Westminster	None	April 10 and 15, 2002
9811F095	J. Perry - Hazard Tree Removal - Green Slough – Ladner	None	April 23, 2002
9811F096	Summer Equipment Ltd. - Steel Sheet Pile & Barge Moorage - Burnaby	Project Cancelled	Project Cancelled
9811F097	Mill & Timber Products - Maintenance Dredging – Surrey	None	Site Sub-tidal - Not Accessible
9811F098	City of Vancouver Asphalt Plant - Waste Management Permit Application	N/A	Monitoring Conducted - WM Permit
9811F099	Public Works & Government Services Canada - Stormwater Outfall - Annacis Island	None	June 27, 2002
9811F100	City of Surrey - Float Access Widening & New Launching Float - Ward's Marina	Project Cancelled	Project Cancelled
9811F101	Greater Vancouver Regional District - Waterline Scour Protection - Pitt River	None	Site Sub-tidal - Not Accessible
9811F102	Greater Vancouver Regional District - Waterline Scour Protection - Queensborough	None	Site Sub-tidal - Not Accessible
9811F103	Fraser River Harbour Commission - Maintenance Dredging - Queensborough Rail Bridge	None	Site Sub-tidal - Not Accessible
9811F104	City of Port Coquitlam - Dyke Upgrade Deboville Slough to Broadway - Pitt River	None	April 12 and 15, 2002
9811F105	Greater Vancouver Regional District - Geotechnical Investigation - Sanitary Forcemain	None	Site Sub-tidal - Not Accessible
9811F106	BC Gas - Pipeline Crossing - Port Mann - Surrey / Coquitlam	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
9811F107	A. Thomas - Single Family Residence - 134 Tsawwassen Beach Road - Delta	None	None
9812F108	Golder Associates Ltd. - Sediment & Soil Remediation - 9250 Oak St - Vancouver	None	March 29, 1999
9812F109	Westview Dredging - Maintenance Dredging - 8081 River Road - Delta	None	Site Sub-tidal - Not Accessible
9812F110	F&O Small Craft Harbours - Substructure Fire Protection & Repairs - Gulf of Georgia Net Loft	None	Site Not Accessible
9812F111	Genstar Development Co. - Residential Development - Mary Hill - Pt Coquitlam	May 2 to October 16, 2001 (IM)	October 16, 2001 (IM)
9812F112	Star of Fortune - Upland Building & Riverboat Moorage - Westminster Quay	None	April 8, 2002
9812F113	Westview Dredging - Maintenance Dredging - Brownsville – Surrey	None	Site Sub-tidal - Not Accessible
9812F114	Agri-Bulk Services - Trans-shipment & Storage Facility - Fraser - Richmond	Project Cancelled	Project Cancelled

FREMP Post-Project Evaluation
Appendix A. FREMP Applications For 1999 - List Of Projects

CPR #	Project Description	Construction Monitoring?	Post-Construction Monitoring?
9901F001	Opus Building Corporation - Development of MacMillan Bloedel Property - Tilbury Island - Delta	Project Cancelled	Project Cancelled
9901F002	MacMillan Bloedel Ltd. - Construction of Road - Hopcott to 68th St - Tilbury Island	None	March 1, 2002
9901F003	The Corporation of Delta -Brandrith Drainage Pump Station Upgrade - Delta	None	March 1, 2002
9901F004	BC Ferry Corporation - Steel Sheet Pile Wall For Bank Stabilization - Deas Refit Complex	None	None
9901F005	Arrow Transportation Systems Inc. Travel Lift Facility - Mitchell Island	None	March 6, 2002
9901F006	Ocean Fisheries - Maintenance Dredging - 13140 Rice Mill Road - Richmond	None	Site Sub-tidal - Not Accessible
9901F007	R. Rudersdorfer - Hazard Tree Removal - Ladner Slough – Delta	Project Cancelled	Project Cancelled
9901F008	Seaboard Global Exports - Marina/Pile-Supported Buildings - 8051 River Road - Richmond	Project Cancelled	Project Cancelled
9902F009	F&O Small Craft Harbours - Cannery Cannel Maintenance Dredging - Steveston - Richmond	None	Site Sub-tidal - Not Accessible
9901F010	Beedie Construction Co. Ltd. - Industrial Building Development - 7430 Hopcott Road - Tilbury Island	August 09, 2001	March 1, 2002
9901F011	Doman Industries - Maintenance Dredging - Barge Ramp - North Foot No. 5 Rd – Richmond	None	Site Sub-tidal - Not Accessible
9902F012	International Forest Products Ltd. - Retaining Wall Replacement Hammond Cedar - Maple Ridge	November 1999, June 2000	& October 2001 (ERC)
9902F013	North Fraser Harbour Commission - Navigation Channel Maintenance Dredging	None	Site Sub-tidal - Not Accessible
9902F014	BC Packers - Shoreline Works/Upland Development - Cannery Channel - Steveston	Project Cancelled	Project Cancelled
9902F015	Imperial Paving/Granite Island Holdings - Portable Asphalt Plant - 8081 River Road Delta	Project Proceeded Without	ERC Letter
9902F016	City of Coquitlam - Floodbox Removal - Under Port Mann Bridge - Coquitlam	None	April 15, 2002
9902F017	Agra Marine Construction Ltd. - Wharf & Barge Moorage - South End of Nelson Road - Richmond	None	March 28, 2002
9902F018	City of Port Coquitlam - Viewing Platforms & Landscaping - Pitt River - Port Coquitlam	None	April 12 and 15, 2002
9902F019	Peter Harco - Wharf and Dock - Boundary Bay WMA - Surrey	Project Cancelled	Project Cancelled
9903F020	Westcoast Cellulibre - Steel Sheet Pile Retaining Wall & Steel Pipe Pile Installation - Vancouver	None	March 14, 2002
9903F021	Fraser Wharves Ltd. - Riverbank Stabilization - South End of No. 6 Road - Richmond	None	April 23, 2002
9903F022	Bader, Davidson & Dale - Float Home Development - Dyke Road - Richmond	Project Cancelled	Project Cancelled
9903F023	John Fraser - Buildings & Retaining Wall - Barnston Island - Parsons Channel	Project Cancelled	Project Cancelled
9903F024	Primex Forest Products - Acorn Forest - Maintenance Dredging - 9355 Alaska Way, Delta	None	Site Sub-tidal - Not Accessible
9903F025	City of Surrey - Stormwater Outfall - Crescent Beach Marina - Surrey	None	August 26, 1999 & August 20, 2001
9903F026	BC Gas Utility Ltd. - Cleaning/Painting of Gas Pipeline - Pattullo Bridge - New Westminster/Surrey	None	Project Involved No Physical Works
9903F027	GVRD - Erosion Protection of Service Conduit on Riverbed - Iona Island (Richmond)/Vancouver	None	Site Sub-tidal - Not Accessible
9903F028	International Forest Products - Maintenance Dredging - Fraser Mills - Coquitlam	None	Site Sub-tidal - Not Accessible
9903F029	Pacific Custom Log Sorting - Maintenance Dredging - Pacific Reach - Coquitlam	None	Site Sub-tidal - Not Accessible
9903F030	CIPA Lumber Co. Ltd. - Maintenance Dredging - Annacis Island - Delta	None	Site Sub-tidal - Not Accessible
9903F031	Golder Associates - Geotechnical Investigation (Rapid Transit) - Columbia Street - New Westminster	None	Project Site Subsequently Disturbed
9903F032	BC Hydro - Transmission Tower Seismic Upgrade - Purfleet Point (Annacis Island) - Delta	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
9904F033	No File	No File	No File
9904F034	Tree Island Steel/FRPD - Maintenance Dredging - East Richmond	None	Site Sub-tidal - Not Accessible
9904F035	MacMillan Bloedel Canadian White Pine/FRPD - Maintenance Dredging - South Vancouver	None	Site Sub-tidal - Not Accessible
9904F036	Columbia Bitulithic/FRPD - Maintenance Dredging - Mitchell Island - Richmond	None	Site Sub-tidal - Not Accessible
9904F037	Greater Vancouver Regional District - Sewer Pipe Erosion Protection - Alex Fraser Bridge	None	Site Sub-tidal - Not Accessible
9904F038	Greater Vancouver Regional District - Sewer Pipe Erosion Protection - North End of Annacis Channel	None	Site Sub-tidal - Not Accessible

CPR #	Project Description	Construction Monitoring?	Post-Construction Monitoring?
9904F039	Greater Vancouver Regional District - Sewer Erosion Protection Works - Queensborough Rail Bridge	None	Site Sub-tidal - Not Accessible
9904F040	D. Anslow - Erosion Protection - 536 Centennial Pkwy – Delta	None	March 1, 2002
9904F041	Seaspan Coastal Intermodal - Maintenance Dredging - Tilbury Island – Delta	None	Site Sub-tidal - Not Accessible
9904F042	Fraser River Harbour Commission - Maintenance Dredging - Fraser-Richmond - Richmond	None	Site Sub-tidal - Not Accessible
9904F043	Chemical Lime - Maintenance Dredging – Langley	None	Site Sub-tidal - Not Accessible
9904F044	Aero Trading - Maintenance Dredging – Vancouver	None	Site Sub-tidal - Not Accessible
9904F045	Equitable Real Estate Investment Corp. – Riverbank Stabilization - Mitchell Island	None	March 6, 2002
9904F046	Domtar Inc./M. Biachin - Groundwater & Sediment Sampling - Domtar - New Westminster	None	Site Sub-tidal - Not Accessible
9904F047	MacMillan Bloedel New Westminster – Maintenance Dredging - New Westminster	None	Site Sub-tidal - Not Accessible
9904F048	Arrow Transport - Maintenance Dredging – Vancouver	None	Site Sub-tidal - Not Accessible
9905F049	Ocean Construction Supplies - Barge Ramp Upgrade - Mitchell Island – Richmond	None	March 28, 2002
9905F050	Greater Vancouver Regional District - Trail Construction - Derby Reach Regional Park - Langley	None	April 8, 2002
9905F051	Southlands River Trail & Dyke Committee - Dyke Repairs – Vancouver	None	March 28, 2002
9905F052	Thunderbird Rowing Centre - Installation of Boathouse - Fraser River Middle Arm - Richmond	Project Cancelled	Project Cancelled
9905F053	H. Veldhuis - Seawall Upgrade - 328 Centennial Parkway – Delta	None	March 1, 2002
9905F054	Canadian Forest Products / Pottinger Gaherty - Discharge of Dewatering Effluent - Eburne Sawmill	N/A	Monitoring Conducted - WM Permit
9905F055	Vancouver International Airport Authority - Seair Fuel Dock Upgrade - Sea Island	None	March 14, 2002
9905F056	Goldwood Industries - Maintenance Dredging - Mitchell Island – Richmond	None	Site Sub-tidal - Not Accessible
9905F057	City of White Rock - Shoreline Protection - East Beach Promenade - White Rock	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
9906F058	Rapid Transit Project Office - Skytrain / GVRD Sanitary Sewer / Park - Sapperton - New Westminster	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
9906F059	City of Richmond - Pump Station Upgrade - 13151 No. 2 Road – Richmond	None	March 14, 2002
9906F060	BC Gas Utility Ltd. - Riparian Vegetation Maintenance On BC Gas ROW's - Various Sites	File Closed	File Closed
9906F061	L. Bergman - Removal of Hazard Trees – Green Slough – Ladner	None	April 23, 2002
9906F062	The Corporation of Delta - Phase I River Road Upgrade – Ladner	None	March 4, 2002
9907F063	Community Fisheries Development Centre – Habitat Enhancement - Lower Yorkson Creek - Langley	Project Cancelled	Project Cancelled
9907F064	Lafarge Canada Inc. Richmond - Waste Management PE-00042 Amendment - Lafarge - Richmond	N/A	Monitoring Conducted - WM Permit
9907F065	A Thomas - Removal of Hazard Trees - 134 Tsawwassen Beach Road	Project Cancelled	Project Cancelled
9907F066	MacMillan Bloedel Canadian White Pine - Contaminated Soils/Sediment Investigation - Vancouver	None	Site Sub-tidal - Not Accessible
9907F067	BC Ministry of Transportation & Highways - Port Mann Bridge Widening - Coquitlam / Surrey	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
9907F068	Burlington Northern & Sante Fe Railway - Replacement of Serpentine Rail Bridge - Surrey	July 13 to Sept. 16, 1999 (IM)	April 23, 2002
9907F069	Mud Bay Dyking District / City of Surrey - Dyke Works North Shore of the Nicomekl River – Surrey	Project Cancelled	Project Cancelled
9907F070	JJM Construction - Maintenance Dredging - Sapperton Bar – Coquitlam	None	Site Sub-tidal - Not Accessible
9907F071	Crescent Beach Marina - Maintenance Dredging - Mouth of Nicomekl River – Surrey	None	Site Sub-tidal - Not Accessible
9907F072	Domtar Inc. - Groundwater Tracer Study - Domtar site – Coquitlam	None	Site Sub-tidal - Not Accessible
9907F073	Queenswater Developments Inc. - Demolition/Removal of Structures On Foreshore - Annacis Channel	None	August 04, 1999
9908F074	Fraser Wharves Ltd. - Riverbank Stabilization Repairs - East End Steveston Hwy - Richmond	None	April 23, 2002
9908F075	BC Gas Utility Ltd. - Geotechnical Investigation Works - Campbell River - White Rock	None	Project Site Subsequently Disturbed
9908F076	City of Surrey / Coast River Environmental - Flood Management Works - Nicomekl River - Surrey	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
9908F077	Pacific Custom Log Sort / Westview Dredging - Maintenance Dredging – Coquitlam	None	Site Sub-tidal - Not Accessible
9908F078	Canadian Fishing Co. - Maintenance Dredging - Annacis Channel - New Westminster	None	Site Sub-tidal - Not Accessible

9908F079	Rivtow Marine - Maintenance Dredging - Log Storage Area - Annacis Island – Delta	None	Site Sub-tidal - Not Accessible
CPR #	Project Description	Construction Monitoring?	Post-Construction Monitoring?
9908F080	Fraser River Port Authority - Dredging Transfer Pit - Upstream of Barnston Island - Maple Ridge	None	Site Sub-tidal - Not Accessible
9908F081	City of Surrey / Dillon Consulting - Park Development At Brownsville Bar - South Pattullo Bridge - Surrey	Project Cancelled	Project Cancelled
9908F082	Ducks Unlimited Canada - Water Control Structure Repairs - Alaksen Wildlife Management Area	None	April 11, 2002
9908F083	Westshore Terminals Ltd. - Erosion Protection Repairs - Roberts Bank Port Development - Delta	None	None
9908F084	City of Surrey - Wards Marina Moorage - Wards Marina	Project Cancelled	Project Cancelled
9908F085	Lehigh Portland Cement - Reconfiguration of Industrial Development - Duck Island	Project Cancelled	Project Cancelled
9909F086	The Corporation of Delta - Beach Access Repairs - East End 16th Avenue – Delta	None	March 1, 2002
9909F087	Canadian Forest Products Ltd. - Eburne Sawmill Dredging/Site Decommissioning – Vancouver	Project Cancelled	Project Cancelled
9909F088	Golder Associates Ltd. - Groundwater Barrier Wall Installation - 9250 Oak Street – Vancouver	None	Site Sub-tidal - Not Accessible
9909F089	S. Lam - Single Family Residence & Erosion Protection - 704 Tsawwassen Beach Road – Delta	None	June 12, 2002
9909F090	Greater Vancouver Regional District / Golder - Sanitary Sewer Forcemain Crossing - Nicomekl River	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
9909F091	L. & G. Gillespie - Single Family Residence & Erosion Protection - 782 Tsawwassen Beach Rd – Delta	None	June 12, 2002
9909F092	S.M. Properties - Riverbank Stabilization Works - 3827 River Road West - Ladner – Delta	Project Cancelled	Project Cancelled
9909F093	Canron - Dredging of Barge Loading Area - Canron - Annacis Island – Delta	None	Site Sub-tidal - Not Accessible
9909F094	Westcoast Cellulofibre - Steel Sheet Pile Retaining Wall – Vancouver	None	March 14, 2002
9909F095	Pitt Meadows Airport Society - Hazard Tree Removal - Pitt Meadows Airport - West of Baynes Rd	Project Cancelled	Project Cancelled
9909F096	International Forest - MacKenzie Seizai - Maintenance Dredging – Surrey	None	Site Sub-tidal - Not Accessible
9909F097	Canadian National - Riverbank Stabilization Repairs and Vehicle Pullouts – Surrey	None	April 8, 2002
9909F098	Parks Canada - Building Substructure Replacement - Gulf of Georgia Cannery National Historic Site	None	Site Not Accessible
9909F099	Transport Canada - Remediation Plan - CCG Sea Island Hovercraft Base – Richmond	Project Cancelled	Project Cancelled
9909F100	576770 BC Ltd. - Cellular Repeater Tower - Pitt Meadows	Project Cancelled	Project Cancelled
9909F101	Delta Tug & Barge - Barge & Aggregate Unloading Facility - 11491 River Road – Richmond	Project Cancelled	Project Cancelled
9909F102	Chemical Lime - Maintenance Dredging – Langley	None	Site Sub-tidal - Not Accessible
9909F103	Teal Cedar Products - Maintenance Dredging – Surrey	None	Site Sub-tidal - Not Accessible
9910F104	Inn At Westminster Quay - Maintenance Dredging - New Westminster	None	Site Sub-tidal - Not Accessible
9910F105	L. Ogden / SFU - Temporary Platforms For Bird Research - Brunswick Pt and Boundary Bay – Delta	None	Project Involved Temporary Structure
9910F106	Lantic Real Property Ltd. Partnership - Former Chatterton Petrochemical Remediation - Tilbury Island	None	October 2, 2001 (ERC)
9910F107	City of Burnaby - Pile-Supported Public Lookout - Mouth of Sussex Creek – Burnaby	None	March 6, 2002
9910F108	Greater Vancouver Regional District - Sediment Sampling - Angus Drive CSO	None	Site Sub-tidal - Not Accessible
9910F109	Nass Valley Resources - Dock, Ramp & Float - 4240 River Road West, Ladner – Delta	None	None
9910F110	Westview Dredging - Dredging of Barge Approach Channel - 8081 River Road – Delta	None	Site Sub-tidal - Not Accessible
9910F111	Fletcher Challenge - Maintenance Dredging - Barge Facility - Kent Street – Vancouver	None	Site Sub-tidal - Not Accessible
9910F112	Riverside Towing Ltd. - Maintenance Dredging - 16031 River Road – Richmond	None	Site Sub-tidal - Not Accessible
9910F113	Fraser River Pile & Dredge - Maintenance Dredging - 1830 River Drive - New Westminster	None	Site Sub-tidal - Not Accessible
9911F114	S.M. Properties Ltd. - Dock Expansion - 3827 River Road West – Ladner	None	March 4, 2002
9911F115	Golder Associates Ltd. - River Bank Stabilization - 9250 Oak Street – Vancouver	None	March 29, 1999
9911F116	Greater Vancouver Regional District - Pedestrian Bridge - Colony Farm - Coquitlam River - Coquitlam	None	April 15, 2002
9911F117	City of Richmond - River Bank Erosion Protection Works - Terra Nova / River Road – Richmond	March 9, 2000	April 5, 2000
9911F118	Domtar (Liverpool Site) - Sediment Sampling - Domtar Liverpool - Domtar Liverpool Site - Surrey	None	Site Sub-tidal - Not Accessible
9911F119	North Fraser Port Authority - Upland Dredge Spoil Disposal Site - West of Knight St Bridge - Richmond	Project Cancelled	Project Cancelled
9911F120	Canadian Coast Guard - CCG Beacon Timber Dolphin Reconstruction - Crescent Beach - Surrey	None	None

CPR #	Project Description	Construction Monitoring?	Post-Construction Monitoring?
9911F121	Shell Canada - Former Fuel Facility Remediation - West of Pattullo Bridge - New Westminster	Project Cancelled	Project Cancelled
9911F122	Lindal Cedar Homes - Maintenance Dredging - North Tannery Road – Surrey	None	Site Sub-tidal - Not Accessible
9911F123	Terminal Forest Products -Maintenance Dredging - 12191 Mitchell Rd - Mitchell Is – Richmond	None	Site Sub-tidal - Not Accessible
9911F124	BC Ferry Corporation - Erosion Protection Repairs - Tsawwassen Causeway – Delta	None	June 12, 2002
9911F125	BC Ferry Corporation - Berth 1/2 Steel Sheet Pile Reinforcement - Tsawwassen Terminal - Delta	None	None
9912F126	Moore Clark - Dock Extension - West of Knight Street Bridge –Vancouver	Project Cancelled	Project Cancelled
9912F127	KKBL No. 280 Ventures Ltd. - Development & River Bank Stabilization - 5600 Thorne Ave – Burnaby	Project Cancelled	Project Cancelled
9911F128	Fraser Pulp Chips Ltd. - Maintenance Dredging - Parsons Channel - 19005 98A Ave. – Surrey	None	Site Sub-tidal - Not Accessible
9912F129	Shato Holdings Ltd. - Residential Development - Deas Slough - North Vasey Road – Delta	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
9912F130	City of Richmond - Dyke Upgrade & Repairs - 9000 Block River Rd – Richmond	None	February 15, 2000
9912F131	The Corporation of Delta - Dyke Upgrade - South Deas Slough – Delta	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
9912F132	Nickel Bros. House Moving - Loading of House On Barge - 2962 O'Hara Lane- Crescent Beach – Surrey	January 21, 2000	Project Involved No Physical Works
9912F133	Stella-Jones - Maintenance Dredging - 25 Braid Street - New Westminster	None	Site Sub-tidal - Not Accessible
9912F134	S&R Sawmills Ltd. - Maintenance Dredging - Parsons Channel – Surrey	None	Site Sub-tidal - Not Accessible
9912F135	Greater Vancouver Regional District - Waterline Scour Protection - Swing Bridge - Annacis Channel	None	Site Sub-tidal - Not Accessible
9912F136	Greater Vancouver Regional District - Waterline Scour Protection - Surrey / Pitt Meadows	None	Site Sub-tidal - Not Accessible
9912F137	Greater Vancouver Regional District - Waterline Scour Protection - Lulu Island - Deas Island	None	Site Sub-tidal - Not Accessible
9912F138	Greater Vancouver Regional District - Waterline Scour Protection - Lulu Island - Tilbury Island	None	Site Sub-tidal - Not Accessible
9912F139	Greater Vancouver Regional District - Riverbank Erosion Protection - Derby Reach - Langley	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
9912F140	Fraser River Port Authority - Dredging Transfer Pit - Barnston Island - Pitt Meadows	None	Site Sub-tidal - Not Accessible

FREMP Post-Project Evaluation
Appendix A. FREMP Applications For 2000 - List of Projects

CPR #	Project Description	Construction Monitoring?	Post-Construction Monitoring?
0001F001	Arrow Transportation Systems - Boat Ramp - 11580 Mitchell Rd - Mitchell Is - Richmond	None	March 6, 2002
0001F002	Vancouver Aquarium Marine Science Centre - Foreshore Cleanup - Purfleet Point - Delta	None	Project In Dynamic Environment
0001F003	Vancouver Aquarium Marine Science Centre - Foreshore Cleanup - Iona Beach - Richmond	None	Project In Dynamic Environment
0001F004	Rivtow Marine - Maintenance Dredging - 7700 Hopcott Rd - Tilbury Is - Delta	None	Site Sub-tidal - Not Accessible
0001F005	Rivtow Marine - Maintenance Dredging - 9350 Alaska Way - Gunderson - Delta	None	Site Sub-tidal - Not Accessible
0001F006	The Corporation of Delta - Directional Drill Of Sanitary Forcemain - Ladner Harbour - Delta	None	Site Sub-tidal - Not Accessible
0001F007	Delta Community Fisheries Development Centre - Tidal Channel / Foreshore Cleanup - Ladner Slough	None	Project In Dynamic Environment
0002F008	Vancouver Port Authority - Deltaport Pod 3 - Stormwater Outfalls & Retaining Wall - Delta	May 30, 2000	None
0002F009	Doman Forest Products - Maintenance Dredging - Vancouver Sawmill - Vancouver	None	Site Sub-tidal - Not Accessible
0002F010	Richmond Plywood Corporation - Steel Sheet Pile Wall - North End No. 6 Road - Richmond	None	May 8, 2000
0002F011	M. Johnstone - Replacement of Existing Seawall - 82 Centennial Parkway - Tsawwassen	Project Cancelled	Project Cancelled
0002F012	Vancouver Marina - Maintenance Dredging - 8331 River Road - Richmond	March 6, 2002	Site Sub-tidal - Not Accessible
0002F013	S. Lam - Stormwater Discharge - Tsawwassen Beach - Tsawwassen	None	June 12, 2002
0002F014	BC Gas - Direction Drill of Gas Pipeline - Campbell River - Surrey	August 25-31, 2000	August 31, 2000
0002F015	The Corporation of Delta - Replacement/ of Boat Launch Ramp - Centennial Beach - Tsawwassen	July 11, 2000	September 17, 2001
0002F016	Pitt Meadows Airport - Aircraft Hangers & Taxiway - Pitt Meadows Airport	Project Cancelled	Project Cancelled
0003F017	The Corporation of Delta - Phase II Widening of River Road - River Road East of Admiral Blvd - Delta	None	March 4, 2002
0003F018	The Corporation of Delta - Installation of Shear Boom - Wellington Pt Park - Ladner - Delta	Project Cancelled	Project Cancelled
0003F019	Ross West Aggregates - Aggregate Storage & Barge Loading Facility - Fraser-Richmond - Richmond	Project Cancelled	Project Cancelled
0003F020	BC MELP - Pitt River Dike Repairs (Previously 9807F059) - North of Deboville Slough - Coquitlam	None	April 15, 2002
0003F021	Intracorp Developments - Temporary Storm Outfall - Pacific Reach Business Park - Coquitlam	Project Cancelled	Project Cancelled
0003F022	Intracorp Developments - Permanent Storm Outfall - Pacific Reach Business Park - Coquitlam	None	April 8 and 15, 2002
0003F023	BC Ministry of Transportation & Highways - In-River Densification - Oak Street Bridge Piers - Richmond	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
0003F024	BC Packers - Redevelopment of BC Packers Site - Steveston - Richmond	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
0003F025	DFO Small Craft Harbours - Maintenance Dredging - Cannery Channel - Steveston - Richmond	None	Site Sub-tidal - Not Accessible
0003F026	City of Burnaby - Geotechnical Investigation For Dyke Alignment - Burnaby Big Bend - Thorne Ave.	None	Project Site Subsequently Disturbed
0004F027	Pacific Custom Log Sort - Reconstruction of Bulkhead & Ramp - Fraser Mills - Coquitlam	None	April 8, 2002
0004F028	Valley Towing Ltd. - Relocation of Scow Moorage Area - Near Patullo Bridge - New Westminster	None	April 15, 2002
0004F029	Coastland Wood Industries - Stormwater Outfall - Annacis Island - Delta	None	None
0004F030	Arrow Transportation Systems - Pier, Gangway & Ramp - Mitchell Island - Richmond	Project Cancelled	Project Cancelled
0004F031	The Corporation of Delta - Reconstruction of 3 Floodboxes on Westham Island - Delta	None	None
0004F032	Fraser River Port Authority - Fraser Surrey Berth 10 - Surrey	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
0004F033	City of White Rock - Stormwater Outfall - Marine Drive - White Rock	None	March 23, 2001
0004F034	Ducks Unlimited - Douglas Island Enhancement - Douglas Island	None	None
0005F035	KKBL No. 280 Ventures Ltd. - Riverbank Stabilization - 5600 Thorne Avenue - Burnaby	Project Cancelled	Project Cancelled
0005F036	City of Surrey - Dyke Upgrade and Erosion Protection - Crescent Beach - Surrey	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
0005F037	Columbia Bitulithic - Foreshore Fill - Leeder Avenue - Coquitlam	Project Cancelled	Project Cancelled
0005F038	Weyerhaeuser Canada Ltd. - Riverbank Stabilization - New Westminster Lumber	None	March 6, 2002
0005F039	Doman Forest Products - Riverbank Stabilization - Silvertree Division - Vancouver	None	March 14, 2002

CPR #	Project Description	Construction Monitoring?	Post-Construction Monitoring?
0005F040	Terminal Forest Products - Steel Sheet Pile Wall - Mitchell Island – Richmond	None	March 6, 2002
0005F041	Fraser River Port Authority - Ladner Harbour Navigational Channel Maintenance Dredging	None	Site Sub-tidal - Not Accessible
0005F042	Urban Wood Waste Recyclers - Upland Development & Riverbank Stabilization – Vancouver	Project Cancelled	Project Cancelled
0005F043	CIPA Lumber - Log Storage - Annacis Channel – Delta	August 19, 2000	March 1, 2002
0005F044	Wayne Martinolich - Wharf - Westham Island – Delta	Project Cancelled	Project Cancelled
0005F045	The Corporation of Delta - Tilbury Island Stormwater Management Plan - Tilbury Island – Delta	None	Project Involved No Physical Works
0006F046	Western Steel / Richmond Steel Recycling - Foreshore Remediation - Mitchell Island - Richmond	Project Cancelled	Project Cancelled
0006F047	City of Surrey - Tannery Road Park Development - North Foot of Tannery Road – Surrey	None	April 8, 2002
0006F048	City of New Westminster - Pile Supported Deck Extension - Westminster Quay - New Westminster	None	April 8, 2002
0006F049	The Corporation of Delta - 3rd Avenue Stormwater Outlet Works - Tsawwassen – Delta	None	February 19, 2001
0006F050	Delta Charters - Maintenance Dredging - Delta Vancouver Airport Marina – Richmond	None	Site Sub-tidal - Not Accessible
0006F051	BC Packers - Debris Removal From Foreshore - Annacis Channel – Delta	None	Project In Dynamic Environment
0006F052	Fletcher Challenge - Cleaning of Stormwater Drainage - Wood Chip Facility – Vancouver	Project Cancelled	Project Cancelled
0007F053	Golder Associates Ltd. - Sub-Tidal Rip Rap - 9250 Oak Street – Vancouver	None	Site Sub-tidal - Not Accessible
0007F054	BC Gas / White Pine Environmental - Riparian Maintenance on RoWs - Delta / Richmond	None	None
0007F055	Canoe Pass Village - Maintenance Dredging - Canoe Pass Village - Ladner / Delta	None	Site Sub-tidal - Not Accessible
0007F056	The Corporation of Delta - Underground Sewer Connection - 134 Tsawwassen Beach Rd – Delta	None	Project In Dynamic Environment
0007F057	Greater Vancouver Regional District - Riverbank Erosion Protection Repairs - Deas Island - Delta	None	September 27, 2000
0008F058	The Corporation of Delta - Zellwegger Pump Station Replacement - Westham Island – Delta	December 12, 2000 (ERC)	February 3 & March 14, 2001 (ERC)
0008F059	Arrow Transportation Systems – Widening of Boat Ramp & Float Installation - Mitchell Is - Richmond	Project Cancelled	Project Cancelled
0008F060	Ocean Construction Supplies - Maintenance Dredging - Duck Is & Marpole - Richmond / Vancouver	None	Site Sub-tidal - Not Accessible
0008F061	Vancouver Aquarium & Marine Science Centre - Foreshore Cleanup - Fraser River Park - Vancouver	None	Project In Dynamic Environment
0008F062	Greater Vancouver Regional District - Underground Waterline Connection - Musqueam Creek	None	March 28, 2002
0008F063	City of Surrey - Culvert & Flapgate Repairs - Nicomekl River Mouth – Surrey	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
0008F064	J. Morrison & J. Adams - New Single Family Residence - 184 Centennial Pkwy - Tsawwassen / Delta	None	March 1, 2002
0008F065	The Corporation of Delta - Test Dredging In Green Slough - Green Slough - Ladner / Delta	Project Cancelled	Project Cancelled
0008F066	Vancouver Aquarium & Marine Science Centre - Foreshore Cleanup - Carter Street - New Westminster	None	Project In Dynamic Environment
0008F067	Lawrence Stephen - Wharf on Foreshore - Canoe Pass - Ladner / Delta	None	March 4, 2002
0008F068	Delta Aggregates - Dredge Stockpile On Tilbury Island (Weyerhaeuser site) - Tilbury Island - Delta	Project Cancelled	Project Cancelled
0008F069	City of Burnaby - Thorne Avenue Dyke Extension - Big Bend – Burnaby	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
0008F070	Mason Investments - Development At 1588 Derwent Way - Delta - Annacis Island – Delta	Project Cancelled	Project Cancelled
0008F071	City of Surrey - Ward's Marina Redevelopment - Nicomekl River – Surrey	Project Cancelled	Project Cancelled
0008F072	Rempel Brothers Concrete - Maintenance Dredging - Duck Island – Richmond	None	Site Sub-tidal - Not Accessible
0008F073	Rogers AT&T Wireless - Telecommunications Tower - Tilbury Slough – Delta	None	March 25, 2002
0009F074	City of Richmond - Riverbank Stabilization - Dyke - No. 4 Road & Shell Road – Richmond	None	March 26, 2001
0009F075	Doman Forest Products - Vancouver Sawmill - Riprap Reinforcement of Existing Timber Wall	None	March 14, 2002
0010F076	Fraser River Port Authority - Temporary Use of Permanent Transfer Pit - Upstream of Barnston Island	None	Site Sub-tidal - Not Accessible
0010F077	City of Richmond - Riverbank Stabilization - East Of South End No. 9 Road – Richmond	Project Cancelled	Project Cancelled
0010F078	S.M. Products - Dyke Repairs - Upstream End Canoe Pass - Ladner (Delta)	Monitoring Conducted - Fisheries	& Oceans S35(2) Authorization
0010F079	V & M Manuck & B. Lamont - Lease For Private Moorage - Mouth of Alouette River - Pitt Meadows	None	Project Involved No Physical Works
0011F080	Burlington Northern Sante Fe Railway - Submarine Power Cable Installation - Nicomekl Rail Bridge	None	March 25, 2002

0011F081	City of Richmond - Riverbank Stabilization - East Of South End No. 7 Road – Richmond	None	September 3, 2002
CPR #	Project Description	Construction Monitoring?	Post-Construction Monitoring?
0011F082	Gawley & Son Contracting - Barge Unloading Facility - Near Mouth of Yorkson Creek - Langley	April 29, 2002	Project Cancelled
0011F083	Tsawwassen First Nation - Sanitary Sewer - Tsawwassen Beach	None	Project In Dynamic Environment
0011F084	Tsawwassen First Nation - Youth Centre & Skateboard Park - Tsawwassen Drive	None	March 1, 2002
0011F085	Columbia Bitulithic - Foreshore Fill - Leeder Avenue - Coquitlam	Project Cancelled	Project Cancelled
0011F086	Greater Vancouver Regional District - Water Main Scour Protection - Oak Street Bridge - Vancouver	None	March 14, 2002

FREMP PROJECT REVIEW PROCESS
POST-PROJECT EVALUATION OF THE ENVIRONMENTAL
REVIEW COMMITTEE'S MITIGATION MEASURES
1998-2000

APPENDIX B

CPR

9803F013

APPLICANT

Burnaby Business Park

APPLICATION DATE

February 23, 1998

LEAD AGENCY

North Fraser Harbour Commission

MUNICIPAL ADDRESSSouth End Of Tillicum Street
Burnaby, BC**WATER LOT LOCATION**

Fraser River North Arm

PROJECT DESCRIPTION

Water Intake For Irrigation and Drainage Outfall

ERC LETTER

To North Fraser Harbour Commission dated June 22, 1998

COMPLIANCE MONITORING - DURING CONSTRUCTION

Work Commencement Date: September 21, 1998

No monitoring was conducted during construction.

COMPLIANCE MONITORING - POST CONSTRUCTION

Inspection Date: October 7, 1998

Inspection By: B. Naito of Fisheries & Oceans Canada

During construction, Fisheries and Oceans Canada was advised that two trees on the riverbank have to be removed for safety reasons. Fisheries and Oceans Canada indicated that the trees could be removed as long as trees are planted to replace the removed trees (Reference: Facsimile Transmission to B. Naito of Fisheries and Oceans Canada from E. Teh of Burnaby Business Park dated September 24, 1998). Monitoring on October 7, 1998 indicated that the replacement trees had not yet been planted.

Monitoring on October 7, 1998 also indicated that soil was placed on the riverbank although condition 9 of the June 22, 1998 ERC letter states that "Construction or excavation wastes, overburden, soil, or any other substance deleterious to aquatic life must be disposed of or placed in a manner so as to prevent their entry into any water course or water body". Hence, the works monitored were not in compliance with the relevant conditions of the June 22, 1998 ERC letter.

Inspection Date: March 6, 2002

Inspection By: B. Naito of Fisheries & Oceans Canada

The replacement trees which were yet not planted during the October 7, 1998 monitoring have been planted. Also the soil placed on the riverbank as observed during the October 7, 1998 monitoring is no longer present. Based upon the March 6, 2002 monitoring, the constructed project appears to be as described in the FREMP application and it does not appear that habitat features have been adversely impacted. However, condition 11 of the June 22, 1998 ERC letter states that "Prior to commencement of the cranberry farming operations, the proponent is to retain the services of an environmental consultant to develop a water quality monitoring and assessment program which will ensure that discharges of effluent from farming operations will not result in adverse impacts to the receiving environment and comply with current water quality standards ... Prior to any discharge of effluent, the monitoring plan is to be submitted to the ERC for review and comment and the proponent must report the results to the ERC on a regular basis". While it is not known whether any discharge of effluent from cranberry farming operations has occurred, it does not appear that the water quality monitoring and assessment program has been submitted to the ERC for review and comment. Hence, the project is not in compliance with the relevant conditions of the June 22, 1998 ERC letter. A follow-up letter needs to be sent to Burnaby Business Park requesting if there have been discharges from cranberry farming operations and, if so, information on the results of the water quality and assessment program.

CPR # 9803F013

Burnaby Business Park

Date Of Photograph:

October 7, 1998



Date Of Photograph:

October 7, 1998



CPR # 9803F013

Burnaby Business Park

Date Of Photograph:

March 6, 2002



Date Of Photograph:

March 6, 2002



March 10, 1998

Juergen Baumann

Fax: 666-6138

Environmental Coordinator
Vancouver Port Corporation
1900 Granville Square
200 Granville Street
Vancouver, BC
V6C 2P9

Dear Juergen:

Re: BIEAP CPR # 9802B013; Burrard Yacht Club - Revised proposal for expansion of existing outstation docking facilities at Clementine Creek, Indian Arm
CONDITIONAL ENVIRONMENTAL APPROVAL

Reference is made to your January 28, 1998, referral with attached January 23, 1998, letter from Ian Sacré of the Burrard Yacht Club (BYC) and to the previous approved works reviewed under BIEAP CPR # 9703B024 dated April 22, 1997.

The Burrard Environmental Review Committee (BERC) understands that the BYC would like to increase the utility of the site by moving the existing floats 10 feet (3 metres) further from shore, and the second stage floats 20 feet (6 metres) out from the originally approved location. The proposed works will involve removal of seven steel piles, lengthening the piles and reinstalling them 10 feet (3 metres) further out from shore. The five Stage 2 piles will also be lengthened and installed 20 feet (6 metres) further from shore than originally proposed. All piles will be driven open-ended, sediments will be left in the piles and all piles will be properly capped following installation.

Based on the above discussion and understandings, it is BERC's opinion that potential environmental impacts associated with the design, construction and operation of this facility can be mitigated through the application of appropriate criteria. Accordingly, BERC hereby recommends that any approval of this project which may be issued by the Vancouver Port Corporation (VPC) be subject to the following environmental conditions in addition to any other conditions which may apply:

1. The Burrard Yacht Club acknowledges that all plans and specifications relating to this project have been duly prepared and reviewed by appropriate professionals working on their behalf. The Burrard Yacht Club further acknowledges that they are solely responsible for all design, safety and workmanship aspects of all of the works associated with this project.
2. Burrard Yacht Club shall ensure that all work associated with the subject project complies with the requirements of the *Fisheries Act*.
3. The works shall be as described above, and as described in the application to Vancouver Port Corporation (VPC).
4. The Vancouver Port Corporation guideline entitled "Residential Waterfront Building Guidelines" shall be followed in connection with this project.
5. No floating portion of the structure nor any vessels moored at the structure or used during construction are to be permitted to ground on the foreshore at low tide. Such grounding reduces the biological productivity of impacted areas due to the disturbance of the benthic community.
6. Any timber preservatives used are to be applied upland in the dry for a sufficient time prior to installation of treated timbers to allow complete absorption of preservative and to prevent leaching into the water. A minimum of 45 days is generally required to satisfy this criterion. This condition applies both to initial construction and to subsequent maintenance of the structure.

7. There is to be no dredging or filling at this site without prior **written** approval being obtained. The present letter does **not** convey any form of approval to dredge or fill, and a further application will be required if dredging or filling are contemplated at any time. In this regard, the applicant should ensure that no dredging is required at this time to bring the facility as designed into compliance with condition 3) above.
8. An appropriate fuel/oil spill contingency plan must be in place prior to work commencing and appropriate spill containment and cleanup supplies must be present whenever equipment is at the site.
9. There is to be no fuelling of power boats at this site unless prior **written** approval of proposed measures to prevent spillage is obtained.
10. There are to be no live boards or floathomes moored at this facility. The Burrard Yacht Club is to uphold its existing regulation prohibiting the discharge of toilet wastes from vessels while moored at this facility.
11. The proponent should be advised that under the Fisheries Act, Management of Contaminated Fisheries Regulations, the harvesting of bivalve molluscs, (oysters, clams, mussels) is prohibited within 125 metres of any wharf, dock, platform or other structure used for vessel moorage, or any permanently anchored floating structure, including float homes, barges, platforms and vessels.
12. Any future additions or alterations to this facility must be the subject of a new application through the BIEAP project review process.
13. It is understood that by proceeding with the subject works, Burrard Yacht Club, its agent(s), and its contractor(s), shall have indicated that they accept, and agreed to the foregoing conditions. If any of the understandings set out in this letter are incorrect, the undersigned must be notified as alternate or further restrictions may apply.

The above recommendations are valid until April 22, 1999. After that date the above recommendations will be void, no longer valid. If the subject works have not been **substantially completed** by that time, a new application and approval will be required. This will ensure that the proposed works will conform to current habitat management policy, guidelines and legislation.

The above comments and recommendations are based **solely** upon consideration of the potential environmental issues associated with this project. All non-environmental issues, including zoning and necessary permitting, must be addressed directly with the responsible authorities.

Thank you for your continued co-operation.

Yours sincerely,

Mike Willcox, B.Sc, P.B.D.
Acting Chair, Burrard Environmental Review Committee (BERC)

cc. Bruce Clark, DFO Habitat
Darrell Desjardin, VPC
David Ellis, DOE

John Mackie, DFO/CCG
Mike Willcox, MELP

CPR #

9803F015

APPLICANT

Roy Jantunen

APPLICATION DATE

February 26, 1998

LEAD AGENCY

North Fraser Harbour Commission

MUNICIPAL ADDRESS19300 River Road
Richmond, BC**WATER LOT LOCATION**

Fraser River North Arm

PROJECT DESCRIPTION

Pile Supported Wharf, Ramp and Float

ERC LETTER

To North Fraser Harbour Commission dated September 21, 1998

COMPLIANCE MONITORING - DURING CONSTRUCTION

Work Commencement Date: Unknown

No monitoring was conducted during construction.

COMPLIANCE MONITORING - POST CONSTRUCTION

Inspection Date: March 6, 2002

Inspection By: B. Naito of Fisheries & Oceans Canada

Monitoring indicated that only the pile supported wharf has been constructed and that the ramp and float have not been constructed (although there is no ramp or float, the area at the end of the wharf is being used for boat moorage). Hence, based upon the March 6, 2002 monitoring, the constructed project does not appear to be as described in the FREMP application or be in compliance with the September 21, 1998 ERC letter. However, based upon the March 6, 2002 monitoring, the constructed project also does not appear to have adversely impacted habitat features at the site.

CPR # 9803F015

R. Jantunen

Date Of Photograph:

March 6, 2002





Fraser
River
Estuary
Management
Program

September 21, 1998

Jim Macfarlane
North Fraser Harbour Commission
2020 Airport Road,
Richmond, B.C. V7B 1C6

Dear Capt. Macfarlane:

**RE: FREMP CPR# 9803F015; Roy Jantunen - Proposed Private Wharf and Float In North Arm Of The Fraser River @ 19300 River Road, Richmond, B.C.
ENVIRONMENTAL RECCOMENDATIONS**

In reference to the above subject application received by the Fraser River Estuary Management Program (FREMP) Environmental Review Committee (ERC) for review and comments.

In brief, the ERC understands that the subject proposal will involve the construction of a pile supported wharf, ramp, and float on the foreshore and in the North Arm of the Fraser River at 19300 River Road, Richmond, B.C. Further, the float will be constructed so that it does not ground upon the riverbed and there will be no dredging associated with the subject proposal.

It is noted that the foreshore at the subject location is considered as moderately biologically productive and diverse habitat and is colour coded "yellow" under the FREMP Habitat Classification Mapping system. However, it appears to the ERC that the subject works will not result in significant disturbance to existing riparian vegetation on the river bank or to the intertidal foreshore (i.e. intertidal mudflat or intertidal vegetation) of the Fraser River North Arm.

Therefore, please be advised that, based upon a review of the information provided and understandings as described above, the ERC has concluded that the potential adverse environmental impacts, including impacts to fish and fish habitat, associated with the proposed wharf, ramp and dock construction works on the foreshore and in the North Arm of the Fraser River at 19300 River Road, Richmond, B.C. can be mitigated through the application of appropriate criteria. Accordingly, the ERC recommends that any approval of this project that may be issued by the North Fraser Harbour Commission be subject to the following terms and conditions:

1. Roy Jantunen acknowledges that all plans and specifications relating to this project have been duly prepared and reviewed by appropriate professionals working on their behalf. Roy Jantunen further acknowledges that they are solely responsible for all design, safety and workmanship aspects of all of the works associated with this project.
2. The works shall be as described above, as described and shown in the information provided in the subject application, and as described and shown in the drawing entitled "Proposed Wharf At 19300 River Road, Richmond For Roy Jantunen 270-0057" undated which specifically shows a pile supported

wharf extending far enough offshore so that the float will not ground upon the river bed and shows that no dredging will be undertaken.

3. Water-based machinery or equipment (e.g. barges, scows, etc.) must be firmly moored in deep water far enough off shore to prevent grounding upon the bed of the Fraser River North Arm.
4. Land-based equipment or machinery (e.g. excavators, backhoes, etc.) must work from the upland and not from the intertidal foreshore or within the waters of the Fraser River North Arm.
5. There shall be no disturbance to riparian vegetation (i.e. trees and/or shrubs) of the Fraser River North Arm
6. There shall be no disturbance to the intertidal mudflat (except for the foot print of the installed piles) or to intertidal vegetation on the foreshore of the Fraser River North Arm.
7. All works must be undertaken and completed in such a manner so as to minimize the release of sediment or sediment-laden water into any watercourse or water body.
8. All works must be undertaken and completed in such a manner so as to prevent the release of substances deleterious to fish and other aquatic life (including, but not limited to, concrete, concrete fines, or concrete contaminated water, raw cement, raw cement leachate, oil, etc.) onto the upland and/or intertidal foreshore of or into any water course.
9. An appropriate fuel/oil spill prevention and contingency plan must be in place prior to work commencing. Appropriate spill clean up and containment supplies must also be on site whenever equipment is working.
10. All works must be carried out in such a manner so as to avoid any adverse impact on fish or fish habitat. This includes, but is not limited to, preventing the introduction of deleterious substances (e.g. equipment wash water) onto the foreshore or the waters of the Fraser River. DFO reserves the right to immediately suspend or alter operations and the proponent shall undertake, at their own expense, any compensatory and/or remedial works deemed necessary by DFO to ensure a "no net loss" in the productive capacity of local fish habitat.
11. The DFO C&P Field Supervisor for the Fraser Valley West (Ph: 666-0813, Facs. 666-0377) **and** DFO Habitat Management in New Westminster (Brian Naito Ph: 666-8190, Facs. 666-6627) must be notified at least five (5) days in advance of the commencement of work.
12. This conditional approval is valid for a period of 15 months from the date of this letter, after which time this conditional approval will be void and no longer valid.
13. It is understood that by proceeding with the subject works, Roy Jantunen and/or his agent(s), and its contractor(s), shall have indicated that they accept, and agreed to the foregoing conditions. If any of the understandings set out in this letter are incorrect, the undersigned must be notified as alternate or further restrictions may apply.

Please note that this letter of advice should not be taken to imply approval of the subject works in accordance with the habitat protection provisions of the *Fisheries Act* or any other federal or provincial legislation. If harmful alteration, disruption or destruction of fish habitat occurs as a result of a change in the plans for the subject proposed works, or failure to implement the measures specified above, contravention of subsection 35(2) of the *Fisheries Act* could occur.

The above comments and recommendations are based solely upon consideration by the ERC member environmental agencies of the potential environmental issues associated with this project. It is possible that the ERC may subsequently be made aware of legitimate environmental or other concerns held by others. Any such additional comments that may be received will be forwarded to you for your appropriate consideration. All non-environmental issues, including zoning and necessary permitting, must be addressed directly with the responsible authorities.

Should you have any questions or require further information please do not hesitate to contact me at 775-5195.

Sincerely,

Daria Hasselmann
Project Review Coordinator
FREMPE Environmental Review Committee

cc: M. Willcox, BC Environment
K. Kim, Environment Canada
B. Gowe, DFO CCG NRPD
B. Naito, DFO

CPR #

9805F028

APPLICANT

City of Richmond

APPLICATION DATE

March 12, 1998

LEAD AGENCY

Fraser River Estuary Management Program

MUNICIPAL ADDRESSSouth Dyke Between No.2 and No. 3 Road
Richmond, BC**WATER LOT LOCATION**

Fraser River

PROJECT DESCRIPTION

Riverbank Erosion Protection / Stabilization

ERC LETTER

To City of Richmond dated June 2, 1998

COMPLIANCE MONITORING - DURING CONSTRUCTION

Work Commencement Date: Unknown

Inspection Date: June 22, 1998

Inspection By: B. Naito of Fisheries and Oceans Canada

Based upon the June 22, 1998 monitoring, it appears that the works were in compliance with the relevant conditions of the June 2, 1998 ERC letter.

COMPLIANCE MONITORING - POST CONSTRUCTION

Inspection Date: March 14, 2002

Inspection By: B. Naito of Fisheries & Oceans Canada

The constructed project appears to be as described in the FREMP application but it is not known if the constructed project is in compliance with the relevant conditions of the June 2, 1998 ERC letter. A condition of the June 2, 1998 ERC letter was that two trees be planted for every tree totally removed. However, it is not known how many trees were removed or if any trees were planted to replace the removed trees.

CPR # 9805F028

City of Richmond

Date Of Photograph:

June 22, 1998



Date Of Photograph:

March 14, 2002



CPR # 9805F028

City of Richmond

Date Of Photograph:

March 14, 2002



Date Of Photograph:

March 14, 2002



CPR # 9805F028

City of Richmond

Date Of Photograph:

March 14, 2002



Date of Photograph: March 14, 2002





Fraser
River
Estuary
Management
Program

FREMP
June 2, 1998

Yvonne Stich
Park Planner
City of Richmond
7577 Elmbridge Way
Richmond, BC
V6X 2Z8

Fax: 244-1242

Dear Ms. Stich:

RE: FREMP CPR # 9805F028; City Of Richmond - proposed river bank stabilization works along the South Dyke trail system between No. 2 and east of No. 3 Road, Richmond BC
ENVIRONMENTAL RECOMMENDATIONS

Reference is made to your FREMP application, dated March 12, 1998, and to your letter dated May 20, 1998, providing additional information on the subject proposal.

The Environmental Review Committee (ERC) understands that the City of Richmond is proposing to conduct river bank stabilization works at several areas along the Fraser River South Dyke trail system. The areas involved are: "area 1", east of London's Landing (south foot of No. 2 Road for a length of approximately 106 metres); "area 2", near London Farm (two areas of 26 and 45 metres in length) and, "area 3", east of Gilbert Road (approximately 1200 metres length). Although the drawings submitted show an approximately 1350 metre length of proposed works in area 3, it is understood that an approximately 150 metre length of river bank stabilization works were previously conducted by the City of Richmond (and previously reviewed by the ERC) and are not part of the current proposal. It appears to the ERC that the currently proposed works in areas 2 and 3 will be similar to those stabilization works previously conducted along the 150 m length east of Gilbert Road.

The Deputy Inspector of Dykes, Fred Wodtke, P.Eng. has acknowledged support of the proposed works in the interest of protection from further foreshore losses and to ensure that the dike fill template of Dyke Road is not threatened where erosion pockets encroach onto road fill. There are no specific requirements imposed under the *Dike Maintenance Act* but the application should be coordinated with input from the City's Engineering section and Works and Operations department.

The ERC was originally concerned that the stabilization works proposed for area 1 would encroach into and disrupt highly productive "Red" coded habitat (i.e., intertidal marsh and/or mudflat at or near the base of the eroding river bank). These concerns were discussed on-site by Brian Naito, DFO, and yourself on May 14, 1998, resulting in your May 20, 1998, letter with a revised drawing. Based upon the latest information, the ERC is now satisfied that the proposed stabilization works in area 1 can be undertaken without disturbance to the existing intertidal marsh. It is noted, however, because of the undercut bank at the site, the existing river bank will be cut back and several large trees in danger of falling and posing a public safety hazard will be removed. Also, there will be some temporary disturbance to the existing riparian shrub vegetation at the site resulting from the operation of heavy equipment or machinery to access the work site.

The proposed stabilization works in areas 2 and 3 will be undertaken within shoreline areas classified as having either high or moderate biological productivity and diversity (i.e., coded "Red" or "Yellow" under the FREMP Shoreline Habitat Classification Mapping System). However, as the proposed works within these areas are maintenance of existing shoreline protection (rip rap, concrete, etc.) the ERC is satisfied that they can be carried out with minimal impacts to habitat features.

Please be advised that DFO has concluded that the proposed works are not expected to result in the harmful alteration, disruption or destruction of fish habitat and would not, therefore, contravene subsection 35(1) of the

Fisheries Act. The other member agencies have not identified any specific legislated permit or approval requirements.

Based on the foregoing comments and understandings, the ERC recommends strict adherence to the following terms and conditions to assist in compliance with current environmental legislation, policy, and guidelines:

1. The works shall be as described above, as discussed during the inspection of the subject London's Landing site on May 14, 1998 by B. Naito of the Department of Fisheries & Oceans and Y. Stich of the City of Richmond, and as described and shown in the following letters and drawings:
 - i. the letter to FREMP from the City of Richmond entitled "Bank Stabilization-South Dyke Trail System" dated February 19, 1998, amended as per the letter to FREMP from the City of Richmond of the same title dated May 20, 1998, and;
 - ii. the Corporation of the Township of Richmond Drawings entitled "Dyke Road And Foreshore From Dyke Road To No. 3 Road Foreshore Stabilization" Drawing No. Pc 572 Sheets 1 to 3 inclusive dated February 1998, Sheet 3 with amendments or revisions to Section A.
2. From March 1 to July 15, significant numbers of juvenile salmonids are migrating downstream along the near shore areas of the Fraser River. In this regard, all works during this period must be conducted in the dry (i.e. above the water surface) as low tide and/or water levels permit.
3. There is to be no disturbance to intertidal marsh. Further, the disturbance to riparian vegetation (i.e. trees or shrubs) of the Fraser River is to be minimized.
4. It is recognized that, because of the undercut bank at the site, several large trees in danger of falling and posing a public safety hazard need to be removed. Each large tree removed should be replaced by a minimum of two trees of the same or similar species. The replacement trees should be of guaranteed nursery stock and a minimum of 1.2 m in height. The replacement trees must be planted in upland areas outside the dike system as close as possible to the work site but a minimum of two metres outside the toe of the dike. The trees should be planted this fall to increase likelihood of survival. The ERC would appreciate the opportunity to review the replanting plans.
5. Any material, such as rip rap, gravel, rock, etc., placed below the higher high water mark must be free of silt, overburden, debris or any other substances deleterious to aquatic life.
6. Equipment and/or machinery shall only operate from the upland and not from within the intertidal foreshore or within the waters of the Fraser River.
7. All work must be undertaken and completed in such a manner so as to minimize the release of sediment or sediment-laden water into any watercourse or water body.
8. All works must be undertaken and completed in such a manner so as to prevent the release of oil, grease, and other substances deleterious to fish and other aquatic life onto the upland and/or intertidal foreshore of or into any watercourse
9. Works shall be carried out in such a manner so as to prevent any adverse impact to fish or fish habitat. If the proposed works result in any such impact DFO reserves the right to immediately suspend or alter operations and the proponent shall undertake, at their own expense, any compensatory and/or remedial works deemed necessary by DFO to ensure a no net loss of productive fish capacity.
10. The DFO Field Supervisor for the Lower Mainland (Ph. 664-9250 / Facs. 664-9255 - Steveston) shall be notified a minimum of five days prior to commencement of work activities.

CPR #

9805F031

APPLICANT

Breakaway Yachts Ltd.

APPLICATION DATE

March 17, 1998

LEAD AGENCY

Fraser River Harbour Commission

MUNICIPAL ADDRESS23451 Dyke Road
Richmond, BC**WATER LOT LOCATION**

Annacis Channel - Fraser River

PROJECT DESCRIPTION

Travel Lift, Launch Ramp, and Boat Moorage

ERC LETTER

To Fraser River Harbour Commission dated June 24, 1998

COMPLIANCE MONITORING - DURING CONSTRUCTION

Work Commencement Date: Unknown

No monitoring was conducted during construction.

COMPLIANCE MONITORING - POST CONSTRUCTION

Inspection Date: March 8, 2002

Inspection By: B. Naito of Fisheries & Oceans Canada

Monitoring indicated that the constructed project is different than as described in the FREMP application. While the launch ramp is as described in the FREMP application, the proposed travel lift has not been constructed. Further, the FREMP application only showed a paved area at the top of the boat ramp with a grassed area located downstream at the top of riverbank. However, monitoring indicated that there is a paved area not only at the top of the launch ramp but also extending downstream at the top of the riverbank. Hence, based upon the March 8, 2002 monitoring, the constructed project does not appear to be as described in the FREMP application or be in compliance with the June 24, 1998 ERC letter. Fisheries & Oceans Canada is currently working with the current owner to address the issue.

CPR # 9805F031

Breakaway Yachts Inc.

Date Of Photograph:

March 8, 2002



Date Of Photograph:

March 8, 2002





Fraser
River
Estuary
Management
Program

November 18, 2003

Pat Weber

Fax: 524-1127

Environmental Administrator

Fraser River Harbour Commission
500-713 Columbia Street
New Westminster, BC
V3M 1B2

Dear Pat:

RE: FREMP CPR # 9805F031; Breakaway Yachts – proposed construction of a pre-cast concrete ramp, wharf, & moorage dock, 23451 South Dyke Road, Annacis Channel, Richmond, BC
ENVIRONMENTAL RECOMMENDATIONS

Reference is made to the March 27, 1998, referral application.

The Environmental Review Committee (ERC) understands that the proponent proposes to construct a pre-formed concrete ramp on 10 steel piles, a steel wharf, and a steel pier. In addition, existing dolphins will be used for the placement of the dock. These structures will enable river launching of yachts constructed inland at a new boat building plant, inland of Dyke Road.

The ERC notes that the proposed works are located in “Green” coded habitat according to FREMP’s Habitat Classification Maps, however, the site has higher natural resource values than identified. Regardless, in an area that is classified “Green”, development may occur provided that reasonable efforts are made to mitigate environmental impacts through appropriate location and design. Habitat compensation is not a condition of approval.

Based on the above understandings, it is the opinion of the ERC that the proposal should not give rise to adverse environmental impacts provided appropriate mitigation measures are applied to the design, construction and maintenance of these works. Therefore, the ERC recommends that any approval of this project that may be issued by FRHC be subject to the following environmental conditions, in addition to any other conditions which may apply:

1. The works shall be as described above and as described in the information and drawing provided with the subject application.
2. Breakaway Yachts Inc. acknowledges that all plans and specifications relating to this project have been duly prepared and reviewed by appropriate professionals working on their behalf. Breakaway Yachts Inc. further acknowledges that they are solely responsible for all design, safety and workmanship aspects of all of the works associated with this project.
3. Breakaway Yachts Inc. shall ensure that all works are carried out in such a manner so as to avoid any adverse impact on fish or fish habitat. This includes, but is not limited to, preventing the introduction of deleterious substances (e.g. equipment wash water) onto the foreshore or the waters of the Fraser River. In this regard, DFO reserves the right to immediately suspend or alter operations and the proponent shall undertake, at their own expense, any compensatory and/or remedial works deemed necessary by DFO to ensure a “no net loss” in the productive capacity of local fish habitat.

4. Breakaway Yachts Inc. shall ensure that work involving the use of concrete, cement, and other Portland cement or lime-containing construction materials shall be conducted so as to ensure that sediment, concrete, concrete fines, or concrete contaminated water is not deposited, either directly or indirectly, into the foreshore or waters of the Fraser River.
5. Breakaway Yachts Inc. shall ensure that there is to be no fuelling or storage of fuel or any other substance deleterious to aquatic life at this site.
6. Breakaway Yachts Inc. shall ensure works are limited to off-shore areas as described above and that there will be no filling or dredging without prior written approval.
7. Breakaway Yachts Inc. shall ensure that all steel piles used must be capped to prevent the entry of wildlife. Experience has shown very high bird mortality associated with entrapment within steel pilings.
8. Breakaway Yachts Inc. that any wood preservatives, paints, stains, etc. used are to be applied upland in the dry for a sufficient time prior to installation to allow complete absorption and prevent leaching into the water. Note that in order to allow complete absorption of wood preservatives into wood piles and to prevent leaching of wood preservative from wood piles into the aquatic environment, wood piles must be treated using a treatment methodology that meets or exceeds the most current applicable standards for the protection of the aquatic environment.
9. Breakaway Yachts Inc. shall ensure that any future construction proposals for the areas covered by this application are to be the subject of a formal "application to construct" review through FREMP.
10. Breakaway Yachts Inc. shall ensure that no float homes or live-aboard vessels are to be moored at this facility.
11. Breakaway Yachts Inc. shall ensure that any boats, floats, and any other floating structures are to be located and firmly moored in deep water, far enough offshore to prevent any grounding on the foreshore at this site.
12. Breakaway Yachts Inc. shall ensure that there shall be no discharge of untreated sewage or waste water to the Fraser River from this site. Sewage and waste water generated at this site is not discharged to a sanitary sewer or approved sewage treatment facility.
13. The above recommendations are valid until September 11, 1999. After that date the above recommendations will be void, no longer valid. If the subject works have not been **substantially completed** by that time, a new application and approval will be required. This will ensure that the proposed works will conform to current habitat management policy, guidelines and legislation.
14. It is understood that by proceeding with the subject works, Breakaway Yachts Inc., its agent(s), and its contractor (s), shall have indicated that they accept, and agree to the foregoing conditions. If any of the understanding set out in this letter are incorrect, the undersigned must be notified as alternate or further restrictions may apply.

The above comments and recommendations are based **solely** upon consideration by the ERC member environmental agencies of the potential environmental issues associated with this project. It is possible that the ERC may subsequently be made aware of legitimate environmental or other concerns held by others. Any such additional comments that may be received will be forwarded to you for your appropriate consideration. All non-environmental issues, including zoning and necessary permitting, must be addressed directly with the responsible authorities.

Thank you for your continued cooperation.

Sincerely,

Mike Willcox, B. Sc., P.B.D.
Acting Chair, Environmental Review Committee (ERC)

cc.

Bob McIndoe, DFO Habitat
David Ellis, DOE

Bob Gowe, DFO/CCG
Mike Willcox, MELP

CPR #

9806F041

APPLICANT

Grand Hale Marine Products Co. Ltd.

APPLICATION DATE

June 16, 1998

LEAD AGENCY

North Fraser Harbour Commission

MUNICIPAL ADDRESS11551 Twigg Place (Mitchell Island)
Richmond, BC**WATER LOT LOCATION**

Fraser River North Arm

PROJECT DESCRIPTION

Upland Development & Access Ramp and Dock

ERC LETTER

To North Fraser Harbour Commission dated September 11, 1998

COMPLIANCE MONITORING - DURING CONSTRUCTION

Work Commencement Date: Unknown

No monitoring was conducted during construction.

COMPLIANCE MONITORING - POST CONSTRUCTION

Inspection Date: March 29, 2000

Inspection By: B. Naito of Fisheries & Oceans Canada

Monitoring indicated that the proposed access ramp and dock was not constructed but that the upland development has been completed. Further, landscaping (specifically, the planting of trees and/or shrubs) within an area from the top of riverbank landward to a distance ranging from 15 feet to 37 feet which was proposed as part of the upland development was not conducted. The upland development only includes an area from the top of riverbank landward to a distance of approximately 10 feet which is naturally vegetated and has not been planted with trees and/or shrubs. Hence, based upon the March 29, 2000 monitoring, the constructed project does not appear to be as described in the FREMP application or be in compliance with the September 11, 1998 ERC letter. However, based upon the March 29, 2000 monitoring, the constructed project appears to be consistent with pre-established setback requirements for the site (i.e. those established during the ERC review of the Mitchell Island Industrial Park in the early 1990's) and also does not appear to have adversely impacted habitat features at the site.

CPR # 9806F041

Grand Hale Marine Products Co. Ltd.

No Photograph Available



Fraser
River
Estuary
Management

FREMP Program

September 11, 1998

Jim McFarlane

Facs.: 273-3772

North Fraser Harbour Commission
2020 Airport Road
Richmond, BC V7B 1C6

Dear Mr. McFarlane:

**RE: FREMP CPR# 9806F041; Grand Hale Marine Products Co. Ltd. -
Proposed Fish Processing Plant and Pier and Dock In The North Arm Of The
Fraser River - Mitchell Island, Richmond, BC.
ENVIRONMENTAL RECOMMENDATIONS**

Reference is made to the above subject Fraser River Estuary Management Program (FREMP) Environmental Review Committee (ERC) application CPR# 9806F041 received by this office for review and comments in June 1998.

Based upon the information provided, the ERC understands that the subject project will involve the construction of a fish processing plant, a pier and dock on the foreshore in the North Arm of the Fraser River on Mitchell Island in Richmond, B.C. It is also understood that effluent from the fish processing plant will be discharged to the existing municipal sanitary sewer.

The ERC notes that the foreshore at the subject location is considered as highly biologically productive and diverse habitat and is colour coded "red" under the FREMP Habitat Classification Mapping system. However, it appears that the subject works will not result in significant disturbance to existing riparian vegetation on the river bank or to the intertidal foreshore (i.e. intertidal mudflat or intertidal vegetation) of the Fraser River North Arm.

If any of the foregoing points are inaccurate or misleading, please advise the ERC at your earliest convenience as the ERC may wish to modify the following comments. On the understanding that the foregoing points accurately reflect the subject proposal, it is the opinion of ERC member agencies that the potential adverse environmental impacts, including impacts to fish and fish habitat, associated with the proposed fish processing plant, a pier and dock construction works on the foreshore and in the North Arm of the Fraser River on Mitchell Island in Richmond, B.C. can be mitigated through the application of appropriate criteria. Accordingly, the ERC recommends that any approval of this project that may be issued by the North Fraser Harbour Commission be subject to the following terms and conditions:

1. Grand Hale Marine Products Co. Ltd. acknowledges that all plans and specifications relating to this project have been duly prepared and reviewed by appropriate professionals working on their behalf. Grand Hale Marine Products Co. Ltd. further acknowledges that they are solely responsible for all design, safety and workmanship aspects of all of the works associated with this project.
2. The works shall be as described above, as described and shown in the information provided in the subject application, and as described and shown in the following reports and drawings:
 - i. the report entitled "Shoreline Habitat Assessment: Grand Hale Fish Pier, Mitchell Island, North Fraser Harbour" prepared by G.L. Williams & Associates Ltd. dated June 15th, 1998;

- ii. the D.L.M. Engineering Inc. Drawing No. S-1 entitled "Grand Hale Fish Dock. Concept Plan." undated, and;
 - iii. the Pacific Architectural Group Inc. / Landscape Design Inc. Drawing No. L.1 entitled "Fish Processing Plant Mitchell Island. Landscape Plan. Dated Dec. 18, 1997 Revision 3 dated March 30, 1998.
3. Water-based machinery or equipment (e.g. barges, scows, etc.) must be firmly moored in deep water far enough off shore to prevent grounding upon the bed of the Fraser River.
4. Land-based equipment or machinery (e.g. excavators, backhoes, etc.) must work from the upland and not from the intertidal foreshore or within the waters of the Fraser River North Arm.
5. There shall be no disturbance to riparian vegetation of the Fraser River North Arm (except for the removal of one small red-osier dogwood shrub (as proposed) and the removal of any non-native scotch broom).
6. There shall be no disturbance to the intertidal mudflat (except for the foot print of the installed piles) or to intertidal vegetation on the foreshore of the Fraser River North Arm.
7. All works must be undertaken and completed in such a manner so as to minimize the release of sediment or sediment-laden water into any watercourse or water body.
8. All works must be undertaken and completed in such a manner so as to prevent the release of substances deleterious to fish and other aquatic life (including, but not limited to, concrete, concrete fines, or concrete contaminated water, raw cement, raw cement leachate, oil, etc.) onto the upland and/or intertidal foreshore of or into any water course.
9. An appropriate fuel/oil spill prevention and contingency plan must be in place prior to work commencing. Appropriate spill clean-up and containment supplies must also be on site whenever equipment is working.
10. The applicant should refer to the Environment Canada document entitled "*Technical Guide for the Development of Pollution Prevention Plans for Fish Processing Operations in the Lower Fraser Basin*" for general housekeeping practices.
11. The survival and growth of planted riparian vegetation shall be assessed on an annual basis for two summers commencing in the summer following the completion of the riparian vegetation planting. Upon completion of each assessment a written report is to be provided to the Department of Fisheries & Oceans (DFO).

If any of the annual assessments indicate that less than 90% of each species of trees or shrubs planted have failed to survive, further works, including but not limited to further planting, must be undertaken to provide a minimum survival rate of 90% of each species of tree or shrub planted.

It should be noted that the removal of non-native shrub species (e.g. Scotch Broom) may promote the survival and growth of planted riparian vegetation.

The planted riparian vegetation shall be left undisturbed unless authorized or required by the DFO.
12. The planting of riparian vegetation and associated assessments are to be undertaken under the supervision of a qualified environmental biologist acceptable to the DFO.
13. All works must be carried out in such a manner so as to avoid any adverse impact on fish or fish habitat. This includes, but is not limited to, preventing the introduction of deleterious substances (e.g. equipment wash water) onto the foreshore or the waters of the Fraser River. DFO reserves the right to immediately suspend or alter operations and the proponent shall undertake, at their own expense, any compensatory and/or remedial works deemed necessary by DFO to ensure a "no net loss" in the productive capacity of local fish habitat.

14. The DFO C&P Field Supervisor for the Fraser Valley West (Ph: 666-0813, Facs. 666-0377) and DFO Habitat Management in New Westminster (Brian Naito Ph: 666-8190, Facs. 666-6627) must be notified at least five (5) days in advance of the commencement of work.
15. This conditional approval is valid for a period of 15 months from the date of this letter, after which time this conditional approval will be void and no longer valid.
16. It is understood that by proceeding with the subject works, Grand Hale Marine Products Co. Ltd. and/or its agent(s), and its contractor(s), shall have indicated that they accept, and agreed to the foregoing conditions. If any of the understandings set out in this letter are incorrect, the undersigned must be notified as alternate or further restrictions may apply.

Please note that this letter of advice should not be taken to imply approval of the subject works in accordance with the habitat protection provisions of the Fisheries Act or any other federal or provincial legislation. If harmful alteration, disruption or destruction of fish habitat occurs as a result of a change in the plans for the subject proposed works, or failure to implement the measures specified above, contravention of subsection 35(2) of the Fisheries Act could occur.

The above comments and recommendations are based solely upon consideration by the ERC member environmental agencies of the potential environmental issues associated with this project. It is possible that the ERC may subsequently be made aware of legitimate environmental or other concerns held by others. Any such additional comments that may be received will be forwarded to you for your appropriate consideration. All non-environmental issues, including zoning and necessary permitting, must be addressed directly with the responsible authorities.

Should you have any questions or require further information please do not hesitate to contact me at 775-5195.

Sincerely,

Daria Hasselmann
Project Review Coordinator

cc: M. Willcox, BC Environment
K. Kim, Environment Canada
B. Gowe, DFO CCG NWPD
B. Naito, DFO

CPR #

9808F066

APPLICANT

C. Hume and W. Thorpe

APPLICATION DATE

August 6, 1998

LEAD AGENCY

Fraser River Estuary Management Program

MUNICIPAL ADDRESS5328 and 5338 Brigantine Road
Ladner (Delta), BC**WATER LOT LOCATION**

Green Slough - Fraser River

PROJECT DESCRIPTION

Removal of Hazard Trees

ERC LETTER

To W. Thorpe dated September 30, 1998

COMPLIANCE MONITORING - DURING CONSTRUCTION

Work Commencement Date: Unknown

No monitoring was conducted during construction.

COMPLIANCE MONITORING - POST CONSTRUCTION

Inspection Date: April 23, 2002

Inspection By: B. Naito of Fisheries & Oceans Canada

The constructed project appears to be as described in the FREMP application but it is not known if the constructed project is in compliance with the relevant conditions of the September 30, 1998 ERC letter. A condition of the September 30, 1998 ERC letter was that two trees be planted for every tree totally removed. However, it is not known how many trees were removed. Also the April 23, 2002 monitoring indicated that the area adjacent to Green Slough at the site is well revegetated with shrubs and immature trees and it is not clear if any trees were planted to replace the removed trees or if the trees at the site have naturally established.

CPR # 9808F066

C. Hume and W. Thorpe

Date Of Photograph:

April 23, 2002





Fraser
River
Estuary
Management
FREMP Program

November 18, 2003

Mr. William Thorpe/
5338 Brigantine Road
Ladner, BC V4K 4Z3

Dear Mr. Thorpe:

Re: FREMP CPR# 9808F066; Proposal to Remove Dangerous Tress Adjacent to Ladner Slough at 5328 and 5338 Brigantine Road, Ladner, BC
ENVIRONMENTAL RECOMMENDATIONS

Reference is made to the subject application for coordinated environmental review, dated September 3, 1998.

From the information submitted, the Environmental Review Committee (ERC) understands that you wish to have nine (9) cottonwood trees endangering the subject properties remove. The locations of the trees are indicated on the diagram submitted in support of the application.

Please be advised that the environmental member agencies have no objections subject to the following:

1. For each tree totally removed, two (2) replacement trees must be planted within 15 metres of the slough. Replacement trees are to be native conifer species (e.g. western red cedar, Douglas fir) or native fruit-bearing deciduous species. Replacement trees will not be required for cottonwoods that are "topped" only, and will continue growing.
2. All works are to be carried out in such a manner so as to minimize disturbance to surrounding vegetation.
3. Wherever feasible, all stems and woody debris are to be left adjacent to the slough.
4. A copy of this letter must be forwarded to the contractor(s) and must be kept on-site during the works.

Please be advised that the trees bearing the nests of bald eagles, great blue herons, osprey, and certain other raptors are protected under the provincial *Wildlife Act* and must be retained. Furthermore, all birds and their nests are protected during the active breeding season and therefore the subject works should not be undertaken during the period of February 15th to July 31st of any year to avoid contravention of the Act.

The above recommendations are valid until September 30, 2000. After that date the above recommendations will be void, no longer valid. If the subject works have not been substantially completed by that time, a new application and approval will be required. This will ensure that the proposed works will conform to current habitat management policy, guidelines and legislation.

Sincerely,

Daria Hasselmann
Project Review Coordinator

Cc: M. Willcox, MELP
B. Gowe, CCG

B. Naito, DFO
K. Kim, DOE

<u>CPR #</u>	<u>APPLICANT</u>	<u>APPLICATION DATE</u>
9808F067	British Columbia Ferry Corporation	August 23, 1998

LEAD AGENCY

Fraser River Estuary Management Program

MUNICIPAL ADDRESS

BC Ferry Tsawwassen Causeway
Tsawwassen (Delta), BC

WATER LOT LOCATION

Roberts Bank

PROJECT DESCRIPTION

Underground Electrical Cable and Erosion Protection Repairs

ERC LETTER

To British Columbia Ferry Corporation dated September 29, 1998 and December 31, 1998

COMPLIANCE MONITORING - DURING CONSTRUCTION

Work Commencement Date: March 22, 1999

Inspection Date: March 29, 1999

Inspection By: B. Naito of Fisheries and Oceans Canada

The works that were monitored were in compliance with the relevant conditions of the September 29, 1998 and December 3, 1998 ERC letters.

COMPLIANCE MONITORING - POST CONSTRUCTION

Inspection Date: March 01, 2002

Inspection By: B. Naito of Fisheries & Oceans Canada

Based upon the March 01, 2002 monitoring, the constructed project appears to be as described in the FREMP application and it does not appear that habitat features have been adversely impacted. However, it is not known if the constructed project is in compliance with the relevant conditions of the September 29, 1998 ERC letter. Specifically, condition 8 of the September 29, 1998 ERC letter states that "British Columbia Ferry Corporation should retain the services of a qualified professional to undertake an environmental assessment in the vicinity of the underground fuel tank ..." but it is not known if an environmental assessment was undertaken.

CPR # 9808F067

British Columbia Ferry Corporation

Date Of Photograph:

March 1, 2002



Date Of Photograph:

March 1, 2002





Fraser
River
Estuary
Management
Program

November 18, 2003

British Columbia Ferry Corporation

Facs.: 250-361-4922

1112 Fort Street
Victoria, BC V8V 4V2

Attn.: Kathleen Hennig

RE: FREMP CPR# 9808F067; Robert Freundlich & Associates on behalf of BC Ferry Corporation - Proposed installation of underground power feeder cable at the BC Ferry Tsawwassen Terminal causeway_
ENVIRONMENTAL RECOMMENDATIONS

Reference is made to the subject application for a coordinated environmental review, dated August 23, 1998.

The FREMP Environmental Review Committee (ERC) understands, in brief, that the British Columbia Ferry Corporation (BCFC), represented by Robert Freundlich & Associates Ltd., is proposing to install an underground power feeder cable on the upland (i.e. above the high water level) on the northwest side of the BCFC Tsawwassen Terminal causeway. As a part of the overall project, an existing underground fuel tank will be removed for replacement with an above ground fuel tank at the BC Ferry Tsawwassen Terminal.

The foreshore at the subject location is considered to be highly biologically productive and diverse fish and wildlife habitat and is colour coded "Red" under the FREMP Habitat Classification Mapping system. Development may be undertaken in "Red" coded areas only when impacts to habitat features can be avoided through appropriate project location, design and construction methods.

The ERC is satisfied that the subject proposed underground power feeder cable and fuel tank replacement works can be undertaken without directly impacting fish and wildlife habitat features in the area as the projects are situated above the high water mark in areas lacking significant natural vegetation. More specifically, the ERC has concluded that the proposed works are not expected to result in the harmful alteration, disruption or destruction of fish habitat and would not, therefore, contravene subsection 35(1) of the *Fisheries Act*. Furthermore, it appears as if the potential adverse environmental impacts associated with the design and construction of the works can be mitigated through the application of appropriate criteria. Accordingly, the ERC recommends that the proposed works be carried out with strict adherence to the following terms and conditions in order to adequately mitigate potential adverse environmental impacts, including preventing or avoiding any potentially harmful effects to fish and/or fish habitat, and to comply with current environmental legislation, policy and guidelines.

1. The works shall be as described in this letter and as described and shown in the subject application to the ERC plus attachments including the following drawings and letters:

the letter to D. Pope of BC Ministry of Environment, Lands & Parks from R. Schelle of Robert Freundlich & Associates Ltd. entitled "Tsawwassen Ferry Terminal - Power Feeder Cable Replacement" dated July, 1998;

the Robert Freundlich & Associates Ltd. drawing No. E2-2 entitled "British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 2. H.V. Power Feeder Replacement. Site Plan - East" Rev. A dated 98/03/31;

the Robert Freundlich & Associates Ltd. drawing No. E3-2 entitled "British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 2. H.V. Power Feeder Replacement. Site Plan - Causeway (Part)" Rev. A dated 98/03/31;

the Robert Freundlich & Associates Ltd. drawing No. E4-2 entitled “British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 2. H.V. Power Feeder Replacement. Site Plan - Causeway (Part)” Rev. A dated 98/03/31;

the Robert Freundlich & Associates Ltd. drawing No. E5-2 entitled “British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 2. H.V. Power Feeder Replacement. Electrical Pull Box Details” Rev. A dated 98/03/31;

the Robert Freundlich & Associates Ltd. drawing No. E6-2 entitled “British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 2. H.V. Power Feeder Replacement. Electrical Ducts Section Details” Rev. A dated 98/03/31;

the letter to D. Hasselmann of FREMP from R. Schelle of Robert Freundlich & Associates Ltd. entitled “Tsawwassen Ferry Terminal - Power Feeder Cable Replacement” dated September 9, 1998;

the Graeme & Murray Engineering Consultants Ltd. drawing entitled “Tsawwassen Ferry Terminal. Power Feeder Cable Replacement Typical Section” dated Sept. 1998;

the Robert Freundlich & Associates Ltd. drawing No. E1-4 entitled “British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 4. Standby Generator Capacity Upgrade. Substation #2 Building” Rev. A dated 98/03/31, and;

the Robert Freundlich & Associates Ltd. drawing No. E1-1 entitled “British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 1. 480V & 600V Distribution Consolidation. Site Plan - West” Rev. A dated 98/03/31.

2. There shall be no disturbance or works conducted below the high water level.
3. All works (including operation of equipment/machinery) must be conducted on the upland, above the high water level.
4. All works must be completed so as to minimize the release of silt, sediment or sediment-laden water into any water course or water body.
5. All excavated material or debris must be removed from the site or placed in a stable area above and as far landward of the high water mark as possible to prevent the entry of excavated material and debris or runoff from the excavated material or debris onto the intertidal foreshore of or into any water body (including, but not limited to, Roberts Bank).
6. All works must be completed in a manner that prevents the release of construction waste, excavation waste, overburden, soil, concrete, concrete-laden water, oil, grease or any other substance deleterious to fish or other aquatic life into any water course or water body. With specific regard to the removal of the existing underground fuel tank, there shall no discharge of any residual fuel in the tank or attached pipes or hoses into Georgia Strait. With specific regard to the construction of a concrete pad for the aboveground fuel tank, there shall be no discharge of raw cement, raw cement-laden water, raw concrete, or raw concrete-laden water into Georgia Strait.
7. An appropriate fuel and oil spill prevention/contingency plan must be in place prior to work commencing and appropriate spill containment and cleanup supplies must be present whenever equipment is at the site and during the works.
8. British Columbia Ferry Corporation should retain the services of a qualified professional to undertake an environmental assessment in the vicinity of the underground fuel tank, including analysis of soil and groundwater to confirm the absence or presence of hydrocarbon contamination. The test parameters should include, as a minimum, VPH (volatile petroleum hydrocarbons, LEPH (light extractable petroleum hydrocarbons), HEPH (heavy extractable petroleum hydrocarbons), and BTEX (Benzene, toluene, ethyl benzene, and xylene). If hydrocarbon contamination is indicated, remediation of the site will be required in accordance with the provincial Waste Management Act and its Regulations (e.g. Contaminated Sites Regulation).
9. All work is to be carried out in such a manner as to avoid any adverse impact on fish or fish habitat. If such impact occurs, the Department of Fisheries and Oceans (DFO) reserves the right to immediately suspend or alter

operations and the proponent shall undertake, at their own expense, any compensatory and/ or remedial works deemed necessary by DFO to ensure that fish are impacted and that there is "no net loss" in the productive capacity of local fish habitat.

10. The DFO Field Supervisor for the Lower Mainland/Squamish in Steveston (Ph: 664-9250 / Facs. 664-9255) shall be notified at least five (5) days in advance of the start of the proposed works. Brian Naito of DFO in New Westminster (Ph: 666-8190 / Facs. 666-6627) shall also be notified at least five (5) days in advance of the start of the proposed works.
11. A copy of this letter must be forwarded to the contractor(s) and must be kept on-site during construction.
12. This letter of advice is valid for twelve (12) months from the date of this letter. After that time, if the subject works have not been completed, this letter will be void and a new review will be required. This will ensure that the proposed works will conform to current environmental management policy, guidelines, and legislation.
13. It is understood that by proceeding with these works, the British Columbia Ferry Corporation and / or its agent(s) and/ or contractor(s) shall have indicated that they understand and have agreed to the foregoing conditions.

Please note that this letter of advice should not be taken to imply approval of the subject works in accordance with the habitat protection provisions of the *Fisheries Act* or any other federal or provincial legislation. If harmful alteration, disruption or destruction of fish habitat occurs as a result of a change in the plans for the subject proposed works, or failure to implement the additional measures specified above, contravention of subsection 35(2) of the *Fisheries Act* could occur.

The above comments and recommendations are based solely upon consideration by the ERC member environmental agencies of the potential environmental issues associated with this project. It is possible that the ERC may subsequently be made aware of legitimate environmental or other concerns held by others. Any such additional comments that may be received will be forwarded to you for your appropriate consideration. All non-environmental issues, including zoning and necessary permitting, must be addressed directly with the responsible authorities.

Should you have any questions or require further information, please do not hesitate to contact me at Tel: (604) 775-5195.

Sincerely,

Daria Hasselmann
Project Review Coordinator

cc. M. Willcox, BC Ministry of Environment, Lands and Parks
K. Kim, Environment Canada
B. Gowe, DFO CCG NWPA
B. Naito, DFO



Fraser
River
Estuary
Management
FREMP Program

November 18, 2003

British Columbia Ferry Corporation

Facs.: 250-361-4922

1112 Fort Street
Victoria, BC V8V 4V2

Attn.: Kathleen Hennig

RE: FREMP FILE #9808F067 (Amendment); Proposed Underground Power Feeder Cable - BC Ferry Tsawwassen Terminal Causeway; BC Ferry Corporation
ENVIRONMENTAL RECCOMENDATIONS

Reference is made to the above subject application made to the Fraser River Estuary Management Program (FREMP) Environmental Review Committee (ERC) on September 10, 1998.

As you are aware, the British Columbia Ferry Corporation (BCFC), represented by Robert Freundlich & Associates Ltd., is proposing to install an underground power feeder cable on the upland (above the high water level) on the northwest side of the BCFC Tsawwassen Terminal causeway. Also, as a separate part of the proposed works, an existing underground fuel tank will be removed for replacement with an above ground fuel tank at the BC Ferry Tsawwassen Terminal. Further, you will recall that the ERC provided environmental recommendations for the above proposal to British Columbia Ferry Corporation (BCFC) in a letter to K. Hennig of BCFC dated September 29, 1998.

However, based upon a letter to yourself from R.P. Schelle of Robert Freundlich & Associates Ltd. dated December 14, 1998 plus attachments, it is the ERC's understanding that the routing of the underground power feeder cable on the upland on the northwest side of the BCFC Tsawwassen Terminal Causeway has been revised. The ERC also understands that the installation of the underground power feeder cable will involve erosion protection works at an area where the causeway slope has washed out.

Please be advised that, based upon a review of the information provided, the ERC has concluded that the proposed revision to the underground power feeder cable routing and the inclusion of erosion protection works do not change the terms and conditions specified in the ERC's letter to FREMP dated September 25, 1998 or in FREMP's September 29, 1998 letter to BCFC except that the condition describing the works must be revised as follows:

1. The works shall be as described in this letter and as described and shown in the following drawings and letters:
 - i. the letter to D. Hasselmann of the Fraser River Estuary Management Program from R. Schelle of Robert Freundlich & Associates Ltd. entitled "Tsawwassen Ferry Terminal - Power Feeder Cable Replacement" dated December 14, 1998 plus attachments;
 - ii. the Robert Freundlich & Associates Ltd. Drawing No. E0-2 entitled "British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 2 Site Plan - Key Plan" Rev. A dated 98/12/9;
 - iii. the Robert Freundlich & Associates Ltd. Drawing No. E1-2 entitled "British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 2. H.V. Power Feeder Replacement. Site Plan - West" Rev. A dated 98/12/9;

- iv. the Robert Freundlich & Associates Ltd. Drawing No. E2-2 entitled “British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 2. H.V. Power Feeder Replacement. Site Plan - East” Rev. A dated 98/12/9;
- v. the Robert Freundlich & Associates Ltd. Drawing No. E3-2 entitled “British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 2. H.V. Power Feeder Replacement. Site Plan - Causeway (Part)” Rev. A dated 98/12/9;
- vi. the Robert Freundlich & Associates Ltd. Drawing No. E4-2 entitled “British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 2. H.V. Power Feeder Replacement. Site Plan - Causeway (Part)” Rev. A dated 98/12/9;
- vii. the Robert Freundlich & Associates Ltd. Drawing No. E5-2 entitled “British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 2. H.V. Power Feeder Replacement. Site Plan - Causeway (Part)” Rev. A dated 98/12/9;
- viii. the Robert Freundlich & Associates Ltd. Drawing No. E6-2 entitled “British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 2. H.V. Power Feeder Replacement. Site Plan - Causeway (Part)” Rev. A dated 98/12/9;
- ix. the Robert Freundlich & Associates Ltd. Drawing No. E7-2 entitled “British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 2. H.V. Power Feeder Replacement. Site Plan - Causeway (Part)” Rev. A dated 98/12/9;
- x. the Robert Freundlich & Associates Ltd. Drawing No. E8-2 entitled “British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 2. H.V. Power Feeder Replacement. Site Plan - Causeway (Part)” Rev. A dated 98/12/9;
- xi. the Robert Freundlich & Associates Ltd. Drawing No. E9-2 entitled “British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 2. H.V. Power Feeder Replacement. Site Plan - Causeway (Part)” Rev. A dated 98/12/9;
- xii. the Robert Freundlich & Associates Ltd. Drawing No. E10-2 entitled “British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 2. H.V. Power Feeder Replacement. Site Plan - Causeway (Part)” Rev. A dated 98/12/9;
- xiii. the Robert Freundlich & Associates Ltd. Drawing No. E11-2 entitled “British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 2. H.V. Power Feeder Replacement. Electrical Pull Box Details” Rev. A dated 98/12/9;
- xiv. the Robert Freundlich & Associates Ltd. Drawing No. E12-2 entitled “British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 2. H.V. Power Feeder Replacement. Electrical Ducts Section Details” Rev. A dated 98/12/9;
- xv. the Graeme & Murray Engineering Consultants Ltd. / Robert Freundlich & Associates Ltd. Drawing No. C1-2 entitled “British Columbia Ferry Corporation Tsawwassen Ferry Terminal. TSIT.G62.E Power Feeder Cable Replacement Stage 2. H.V. Power Feeder Replacement. Washout & Pavement Details” Rev. A. dated 98/12/9.

Should you have any questions or require further information, please do not hesitate to contact me at Tel: (604) 775 – 7195.

Sincerely,

Environmental Review Committee

Per: Daria Hasselmann
Project Review Coordinator

Cc: M. Willcox, MELP B. Naito, DFO A. Colodey, DOE
B. Gowe, DFO/CCG
R. Schelle, Robert Freundlich & Associates (facs.: 250-386-2844)

CPR #

9903F020

APPLICANT

Westcoast Cellufibre

APPLICATION DATE

February 17, 1999

LEAD AGENCY

North Fraser Harbour Commission

MUNICIPAL ADDRESS8501 Ontario Street
Vancouver, BC**WATER LOT LOCATION**

Fraser River North Arm

PROJECT DESCRIPTION

Steel Sheet Pile Wall And Steel Pipe Pile Installation For A Log Holding Pocket

ERC LETTER

To North Fraser Harbour Commission dated March 23, 1999

COMPLIANCE MONITORING - DURING CONSTRUCTION

Work Commencement Date: Unknown

No monitoring was conducted during construction.

COMPLIANCE MONITORING - POST CONSTRUCTION

Inspection Date: March 14, 2002

Inspection By: B. Naito of Fisheries & Oceans Canada

The constructed project appears to be reduced in scope from that described in the FREMP application. Specifically, the constructed project appears to only include the installation of steel pipe piles and does not appear to include the installation of a steel sheet pile wall. Hence, based upon the March 14, 2002 monitoring, the constructed project does not appear to be as described in the FREMP application or be in compliance with the March 23, 1999 ERC letter. However, based upon the March 14, 2002 monitoring, the constructed project also does not appear to have adversely impacted habitat features at the site.

CPR # 9903F020

Westcoast Cellulibre

Date Of Photograph:

March 14, 2002





Fraser
River
Estuary
Management
FREMP Program

November 18, 2003

Captain Jim Macfarlane

Facs.: 273-3772

North Fraser Harbour Commission
2020 Airport Road
Richmond, BC V7B 1C6

**RE: FREMP CPR # 9903F020; Westcoast Cellul fibre (Howe Sound Pulp & Paper) -
Proposed Installation of Steel Sheet Pile Retaining Wall / Fill and Steel Pipe Piles On And In
The Fraser River North Arm
ENVIRONMENTAL RECOMMENDATIONS**

Reference is made to the above subject application #9903F020 received by the Fraser River Estuary Management Program (FREMP) Environmental Review Committee (ERC) for a coordinated environmental review.

In brief, it is understood that Westcoast Cellul fibre (A Division of Howe Sound Pulp & Paper Ltd.) is proposing to install a steel sheet pile retaining wall (and place fill behind the wall) and install steel pipe piles at their mill site in the Fraser River North Arm at or near the south foot of Ontario Street, Vancouver, BC

It is noted that the upland and intertidal foreshore at the subject location is considered as having low productivity and is colour coded "green" under the FREMP Habitat Classification Mapping system.

If any of the foregoing points are inaccurate or misleading, please advise at your earliest convenience as the ERC may wish to modify the comments herein.

Therefore, on the understanding that the foregoing points accurately reflect the subject proposal, it is the opinion of the ERC that the potential adverse impacts to wildlife, fish and their habitat associated with the proposed works to install a steel sheet pile retaining wall (and place fill behind the wall) and install steel pipe piles at the Westcoast Cellul fibre mill site in the Fraser River North Arm at or near the south foot of Ontario Street, Vancouver, BC can be mitigated through the application of appropriate criteria. In addition to those measures set out in the information provided, the following measures are intended to prevent or avoid any potentially harmful effects to wildlife, fish and their habitat:

1. Westcoast Cellul fibre acknowledges that all plans and specifications relating to this project have been duly prepared and reviewed by appropriate professionals working on his behalf. Westcoast Cellul fibre further acknowledges that it is solely responsible for all design, safety and workmanship aspects of all of the works associated with this project.
2. The works shall be as described in this letter and as described and shown in the subject application to FREMP ERC plus attachments.
3. From March 1 to June 1, juvenile salmon are present along the shoreline of the Fraser River North Arm. In this regard, during this March 1 to June 1 period, any fill behind the steel

sheet pile retaining wall must be placed in the dry (i.e. above the water surface) at water / tide levels allow and must not be placed within the waters of the Fraser River North Arm.

4. Any steel pipe piles or other open-ended piles must be capped to prevent entry of wildlife. Experience has shown very high bird mortality associated with entrapment within open-ended piles.
5. Any old piles to be removed shall be removed as a whole or cut off below the mud line and disposed of at an authorized upland site. All demolition materials must be disposed of at an authorized, upland site.
6. Any timber preservatives used are to be applied upland in the dry prior to installation to allow the preservative to completely absorb and prevent leaching into the marine environment. A minimum of 45 days is generally required to satisfy these criteria. This condition applies to initial construction and to subsequent maintenance of the structure. DFO Canadian Coast Guard may wish to refer to the latest edition of the CAN/CSA-80 Wood Preservation standards and "The Best Management Practices for the Use of Treated Wood in Aquatic Environments", Canadian Version January, 1997, from the Canadian Institute of Treated Wood, and Western Wood Preservers Institute.
7. Any water-based machinery or equipment (e.g. boat, barge, etc.) used shall be firmly moored in deep water, far enough offshore to prevent any grounding onto the intertidal foreshore or riverbed of any watercourse or water body.
8. Any land-based machinery or equipment used shall operate from the upland and not from within the intertidal foreshore or waters of the Fraser River North Arm.
9. All work must be undertaken and completed in such a manner so as to minimize the release of sediment or sediment-laden water into any watercourse or water body.
10. All works must be completed in a manner that prevents the release of construction waste, excavation waste, overburden, soil, raw concrete, raw concrete-laden water, raw cement, raw cement-laden water, oil, grease or any other substance deleterious to fish or other aquatic life into any water course or water body.
11. Westcoast Cellulofibre shall ensure that an appropriate fuel and oil spill prevention/contingency plan is in place prior to work commencing and that appropriate spill containment and cleanup supplies are present whenever equipment is at the site.
12. All works shall be carried out in such a manner so as to avoid any adverse impact on fish or any harmful alteration of fish habitat.

If any such alteration occurs, the Department of Fisheries & Oceans (DFO) reserves the right to immediately suspend or alter operations and the proponent and/or their agent(s) or contractor(s) shall undertake, at their own expense, any remedial works deemed necessary by the DFO to ensure a "no net loss" in the productive capacity of local fish habitat.
13. The DFO Field Supervisor for Fraser Valley West in Langley (Ph: (604) 607-4150 / Facs. (604) 607-4199) shall be notified at least five (5) days in advance of the start of the proposed works.
14. Brian Naito of the office of DFO in New Westminster (Ph: (604) 666-8190 / Facs. (604) 666-6627) shall also be notified at least five (5) days in advance of the start of the proposed works.
15. A copy of this letter must be forwarded to the contractor(s) and must be kept on-site during construction.

16. It is understood that by proceeding with these works, Westcoast Cellulose and/or its agent(s) and/ or contractor(s) shall have indicated that they understand and have agreed to the foregoing conditions.

The above recommendations are valid until June 17, 2000. After that date the above recommendations will be void, no longer valid. If the subject works have not been substantially completed by that time, a new application for review will be required. This will ensure that the proposed works will conform to current environmental management policy, guidelines and legislation

Please note that this letter of advice should not be taken to imply approval of the subject works in accordance with the habitat protection provisions of the Fisheries Act or any other federal or provincial legislation. If harmful alteration, disruption or destruction of fish habitat occurs as a result of a change in the plans for the subject proposed works, or failure to implement the additional measures specified above, contravention of subsection 35(2) of the Fisheries Act could occur.

The above comments and recommendations are based solely upon consideration by the ERC member environmental agencies of the potential environmental issues associated with this project. It is possible that the ERC may subsequently be made aware of legitimate environmental or other concerns held by others. Any such additional comments that may be received will be forwarded to you for your appropriate consideration. All non-environmental issues, including zoning and necessary permitting, must be addressed directly with the responsible authorities.

Should you have any questions or require further information, please do not hesitate to contact me at Tel: 775-5195.

Sincerely,

Environmental Review Committee

Per: Daria Hasselmann
Project Review Coordinator

cc. M. Willcox, BC Environment Planning and Assessment
A. Colodey, Environment Canada
B. Gowe, DFO CCG NWPA
B. Naito, DFO

CPR #

9909F094

APPLICANT

Westcoast Cellufibre

APPLICATION DATE

September 3, 1999

LEAD AGENCY

North Fraser Port Authority

MUNICIPAL ADDRESS8501 Ontario Street
Vancouver, BC**WATER LOT LOCATION**

Fraser River North Arm

PROJECT DESCRIPTION

Steel Sheet Pile Retaining Wall

ERC LETTER

To North Fraser Port Authority dated September 15, 1999

COMPLIANCE MONITORING - DURING CONSTRUCTION

Work Commencement Date: Unknown

No monitoring was conducted during construction.

COMPLIANCE MONITORING - POST CONSTRUCTION

Inspection Date: March 14, 2002

Inspection By: B. Naito of Fisheries & Oceans Canada

The constructed project appears to differ from that described in the FREMP application. Specifically, the constructed project appears to include the use of horizontal concrete piles for the retaining wall instead of steel sheet pile. Also the constructed project appears to only include the installation of the retaining wall east of the wood chip loading conveyor and not on the west side of the conveyor as described in the FREMP application. Hence, based upon the March 14, 2002 monitoring, the constructed project does not appear to be as described in the FREMP application or be in compliance with the September 15, 1999 ERC letter. However, based upon the March 14, 2002 monitoring, the constructed project also does not appear to have adversely impacted habitat features at the site.

CPR # 9909F094

Westcoast Cellulibre

Date Of Photograph:

March 14, 2002





Fraser
River
Estuary
Management
Program

September 15, 1999

North Fraser Port Authority

Facs: 273-3772

2020 Airport Road
Richmond, BC V7B 1C6

Attn: Jim Macfarlane

**RE: FREMP CPR # 9909F094; Westcoast Cellufibre (Howe Sound Pulp & Paper) -
Proposed Steel Pile Retaining Wall On And In The Fraser River North Arm
ENVIRONMENTAL CONDITIONS**

Reference is made to the above subject application received by the Fraser River Estuary Management Program (FREMP) Environmental Review Committee (ERC) for a coordinated environmental review.

The ERC understands that Westcoast Cellufibre (A Division of Howe Sound Pulp & Paper Ltd.) is proposing to install a sheet pile retaining wall at their mill site in the Fraser River North Arm at or near the south foot of Manitoba Street, Vancouver, BC.

It is noted that the shoreline at the subject location is designated as "having low productivity or lacking habitat features" and is colour coded "green" under the FREMP Shoreline Habitat Classification Mapping.

Please be advised that, on the understanding that the foregoing points accurately reflect the subject proposal, it is the opinion of the ERC that the potential adverse impacts to fish, wildlife and their habitat associated with the proposed works to install a steel sheet pile retaining wall at the Westcoast Cellufibre mill site in the Fraser River North Arm at or near the south foot of Manitoba Street, Vancouver, BC can be mitigated through the application of appropriate criteria. In addition to those measures set out in the information provided, the following measures are intended to prevent or avoid any potentially harmful effects to fish, wildlife and their habitats:

1. Westcoast Cellufibre acknowledges that all plans and specifications relating to this project have been duly prepared and reviewed by appropriate professionals working on his behalf. Westcoast Cellufibre further acknowledges that it is solely responsible for all design, safety and workmanship aspects of all of the works associated with this project.
2. The works shall be as described in this letter and as described and shown in the subject application to FREMP ERC plus attachments.
3. From March 1 to June 1, juvenile salmon are present along the shoreline of the Fraser River North Arm. In this regard, there shall be no in-water works during this March 1 to June 1 period. Any works during this March 1 to June 1 period must be undertaken in the dry (i.e. above the water surface) at water / tide levels

4. Any steel pipe piles or other open-ended piles must be capped to prevent entry of wildlife. Experience has shown very high bird mortality associated with entrapment within open-ended piles.
5. Any old piles to be removed shall be removed as a whole or cut off below the mud line and disposed of at an authorized upland site. All demolition materials must be disposed of at an authorized, upland site.
6. Any timber preservatives used are to be applied upland in the dry prior to installation to allow the preservative to completely absorb and prevent leaching into the marine environment. A minimum of 45 days is generally required to satisfy this criteria. This condition applies to initial construction and to subsequent maintenance of the structure. The applicant may wish to refer to the latest edition of the CAN/CSA-80 Wood Preservation standards and "The Best Management Practices for the Use of Treated Wood in Aquatic Environments", Canadian Version January, 1997, from the Canadian Institute of Treated Wood, and Western Wood Preservers Institute.
7. Any water-based machinery or equipment (e.g. boat, barge, etc.) used shall be firmly moored in deep water, far enough offshore to prevent any grounding onto the intertidal foreshore or riverbed of any watercourse or water body. The only exception to this condition is that use may be made of vertical spuds to hold barge(s) in place.
8. Any land-based machinery or equipment used shall operate from the upland and not from within the intertidal foreshore or waters of the Fraser River North Arm.
9. All work must be undertaken and completed in such a manner so as to minimize the release of sediment or sediment-laden water into any watercourse or water body.
10. All works must be completed in a manner that prevents the release of construction waste, excavation waste, overburden, soil, raw concrete, raw concrete-laden water, raw cement, raw cement-laden water, oil, grease or any other substance deleterious to fish or other aquatic life into any water course or water body.
11. Westcoast Cellulofibre shall ensure that an appropriate fuel and oil spill prevention/contingency plan is in place prior to work commencing and that appropriate spill containment and cleanup supplies are present whenever equipment is at the site.
12. All works shall be carried out in such a manner so as to avoid any adverse impact on fish or any harmful alteration of fish habitat.

If any such alteration occurs Fisheries & Oceans Canada reserves the right to immediately suspend or alter operations and the proponent and/or their agent(s) or contractor(s) shall undertake, at their own expense, any remedial works deemed necessary by Fisheries & Oceans Canada to ensure a "no net loss" in the productive capacity of local fish habitat.
13. The Fisheries and Oceans Canada Field Supervisor for Steveston/Vancouver (Ph: (604) 664-9250 / Facs. (604) 664-9255) shall be notified at least five (5) days in advance of the start of the proposed works.
14. Brian Naito of the office of Fisheries and Oceans Canada in New Westminster (Ph: (604) 666-8190 / Facs. (604) 666-6627) shall also be notified at least five (5) days in advance of the start of the proposed works.
15. A copy of this letter must be forwarded to the contractor(s) and must be kept on-site during construction.

16. It is understood that by proceeding with these works, Westcoast Cellulibre and/or its agent(s) and/ or contractor(s) shall have indicated that they understand and have agreed to the foregoing conditions.

The above recommendations are valid until December 15, 2000. After that date the above recommendations will be void, no longer valid. If the subject works have not been substantially completed by that time, a new application for review will be required. This will ensure that the proposed works will conform to current environmental management policy, guidelines and legislation

Please note that this letter of advice should not be taken to imply approval of the subject works in accordance with the habitat protection provisions of the *Fisheries Act* or any other federal or provincial legislation. If harmful alteration, disruption or destruction of fish habitat occurs as a result of a change in the plans for the subject proposed works, or failure to implement the additional measures specified above, contravention of subsection 35(2) of the *Fisheries Act* could occur.

The above comments and recommendations are based solely upon consideration by the ERC member environmental agencies of the potential environmental issues associated with this project. It is possible that the ERC may subsequently be made aware of legitimate environmental or other concerns held by others. Any such additional comments that may be received will be forwarded to you for your appropriate consideration. All non-environmental issues, including zoning and necessary permitting, must be addressed directly with the responsible authorities.

Should you have any questions or require further information, please do not hesitate to contact me at Tel: (604) 775-5195.

Sincerely,

Environmental Review Committee

Per: Daria Hasselmann
Project Review Coordinator

cc. M. Willcox, BC MELP
A. Duncan, Environment Canada
B. Gowe, DFO CCG NWPD
B. Naito, Fisheries & Oceans Canada