WATER QUANTITY SURVEYS

COST SHARING AGREEMENT

CANADA - NEWFOUNDLAND

ANNUAL REPORT 2000 - 2001

Martin Goebel
Administrator for Newfoundland

Mr. W. S. Appleby
Administrator for Canada

In accordance with Article XII of the Memorandum of Agreement covering Water Quantity Surveys in the Province of Newfoundland, we submit herewith the annual report for fiscal year 2000 - 2001.

Members of the Co-ordinating Committee

H. Khan
Co-ordinator for Newfoundland
St. John's, Newfoundland

J. B. Merrick
Co-ordinator for Canada
Bedford, Nova Scotia

CONTENTS

INTRODUCTION

The year ending March 31, 2001 was the twenty sixth in which water quantity surveys in Newfoundland were conducted under a Memorandum of Agreement between the Federal and Provincial Governments.

The Agreement establishes the basis on which co-operative water quantity surveys are made. It is administered for Canada by the Director of the Atmospheric Environment Branch (AEB) of Environment Canada and for Newfoundland by the Director, Water Resources Division, Department of Environment and Labour.

A Co-ordinating Committee comprising the Manager Environmental Monitoring Division of AEB, and the Manager Surface Water Section, Newfoundland Department of Environment and Labour, reports to the Administrators. It is the responsibility of the Co-ordinating Committee to prepare annually, Schedules A and D for approval by the Administrators.

The full Memorandum of Agreement includes four schedules. The annually changing **Schedules A and D** for 2000 - 2001 are attached to this report in Appendices I and II**. Schedules B and C** are primarily administrative in nature. They are provided in previous annual water reports of this series, as well as in the publication entitled Compendium of Practices, Interpretations and Administrative Procedures for the Water Quantity Survey Agreements: dated 1985-07.

Schedule A is a list of water quantity stations operated under the terms of the Agreement and their responsibility classification as federal, federal-provincial or provincial.

Schedule D provides a summary of the 2000 - 2001 annual payment.

An investigation into the drainage pattern of Migules Brook revealed that all discharge from Migules Lake flows into Northwest Gander River. A historical review resulted in Great Rattling Brook drainage area being decreased by 50 km^2 to 773^2 and Northwest Gander River and Gander River drainages being increased by 50 km^2 to 2200km^2 and 4450km^2 respectively. Changes are for the period of record. Details are available at Water Survey office.

WATER QUANTITY SURVEYS

PROVINCE OF NEWFOUNDLAND

OPERATIONAL COSTS FOR HYDROMETRIC SURVEYS - ISLAND

2000 - 2001

Budget Item	**2000 - 01**
Personnel - Basic Pay - 01, 02, 03 (Salaries of hydrometric technical staff including overtime)	174,618
Transportation and Communications	
Travel - 07	14,622
Transportation and Postage - 09	666
Telecommunications - 10, 11	2,876
Professional and Special Services	
Professional Services - 18	0.00
Other Services - 22	6,388
Rentals - 25	34,066
Purchased Repair and Upkeep	
Equipment Purchased and Repairs - 28	8,090
Building and Structures Repairs - 29	1,046
Utilities, Materials and Supplies	
Public Utility Services - 32	978
Purchased Materials, Supplies,	
Misc. Goods - 33, 34	24,158
Parts and Consumable Tools - 35	11,071
Other Costs - Data Processing	
Depreciation of Vehicles (5)	14,188
Depreciation of Field Equipment and Instruments	1,595
TOTAL	**294,362**

WATER QUANTITY SURVEYS

PROVINCE OF NEWFOUNDLAND

OPERATIONAL COSTS FOR HYDROMETRIC SURVEYSOPERATIONAL COSTS FOR HYDROMETRIC SURVEYSOPERATIONAL COSTS FOR HYDROMETRIC SURVEYSOPERATIONAL COSTS FOR HYDROMETRIC SURVEYS - LABRADOR

2000 - 2001

Budget Item	2000 - 01
Personnel - Basic Pay - 01, 02, 03 (Salaries of hydrometric technical staff including overtime)	10,318
Transportation and Communications	
Travel - 07	6,679
Transportation and Postage - 09	1,263
Telecommunications - 10, 11	0
Professional and Special Services	
Professional Services - 18	0
Other Services - 22	0
Rentals - 25	30,658
Purchased Repair and Upkeep	
Equipment Purchased and Repairs - 28	0
Building and Structures Repairs - 29	0
Utilities, Materials and Supplies	
Public Utility Services - 32	0
Purchased Materials, Supplies,	
Misc. Goods - 33, 34	176
Parts and Consumable Tools - 35	500
Other Costs - Data Processing	0
Depreciation of Vehicles (5)	0
Depreciation of Field Equipment and Instruments	0
TOTAL	**49,094**

WATER QUANTITY SURVEYS

CALCULATION OF ANNUAL COSTS AND PAYMENTS - 2000 – 2001

HYDROMETRIC NETWORK - ISLAND

Station Category	Stations	Station Units
Federal 1	5	5.0
Federal 4	7	7.0
Federal / Provincial 3	31	31.0
Provincial 1	18	15.6
Total	**61**	**58.6**

Average Cost per Station Unit = $294,362.00 / 58.6 = $5,023.24

Provincial Share = $5,023.24 **[(31 x .5) + 15.6] =** $5,023.24**[31.1] = $156,222.76**

HYDROMETRIC NETWORK - LABRADOR

Station Category	Stations	Station Units
Federal 2	1	1.0
Federal 4	3	3.0
Provincial 1	1	0.2
Total	**5**	**4.2**

Average Cost per Station Unit = $49094.00/ 4.2 = $11,689.05

Provincial Share = $11,689.05[0.2] = $2,337.81

HUMBER BASIN METEOROLOGICAL STATIONS

Station Category	Stations	Station Units
Humber Basin Meteorology	5	1.0

Cost per Station = 20% of Hydrometric station = $5,023.24 x .2 = $1,004.65

Provincial Share = $1,004.65 x 5 = $5,023.25

Total Provincial Share = $163,583.82

TABLE 1
WATER QUANTITY SURVEYS
GAUGING STATION DATA FOR 2000 – 2001

No. of Stations: incl Contrib			Changes during 2000 - 2001		Stn. Designation April 1, 2000			
April 1, 1999	April 1, 2000	Change	Added	Discontinued	Fed	F/P	Prov.	Contrib.
99	93	6	0	6	16	31	18	28

TABLE 2
WATER QUANTITY SURVEYS
COMPARATIVE GAUGING STATION DATA April 1, 1975 - April 1, 2001

Federal Stations			F/P Stations			Provincial Stations			Total Stations		
Apr 1, 1975	Apr 1,2000	Change	Apr 1, 1975	Apr 1, 2000	Change	Apr 1, 1975	Apr 1, 2000	Change	Apr 1, 1975	Apr 1, 2000	Change
14	16	2	7	31	24	9	18	9	30	65	35

TABLE 3
WATER QUANTITY SURVEYS
DETAILED GAUGING STATION DATA 2000 – 2001

F-1	*F-2	F-3	F-4	Total F	FP-1	FP-2	FP-3	Total F/P	P-1	P-2	Total P	Contrib.	Total-All
5	1	0	10	16	0	0	31	31	18	0	18	28	93

TABLE 4
WATER QUANTITY SURVEYS
SUMMARY OF SCHEDULE D - 2000 - 2001
(does not include costs for Humber River Meteorological Stations or Sediment Program)

Streamflow & Water Level		Sediment		Total
Operation	Construction	Operation	Construction	
$165,270.71	0	0	0	$165,270.71

TABLE 5
WATER QUANTITY SURVEYS
COMPARISON - SCHEDULED & ACTUAL DOLLAR COSTS FOR 2000 - 2001
(does not include costs for Humber River Meteorological Stations or Sediment Program)

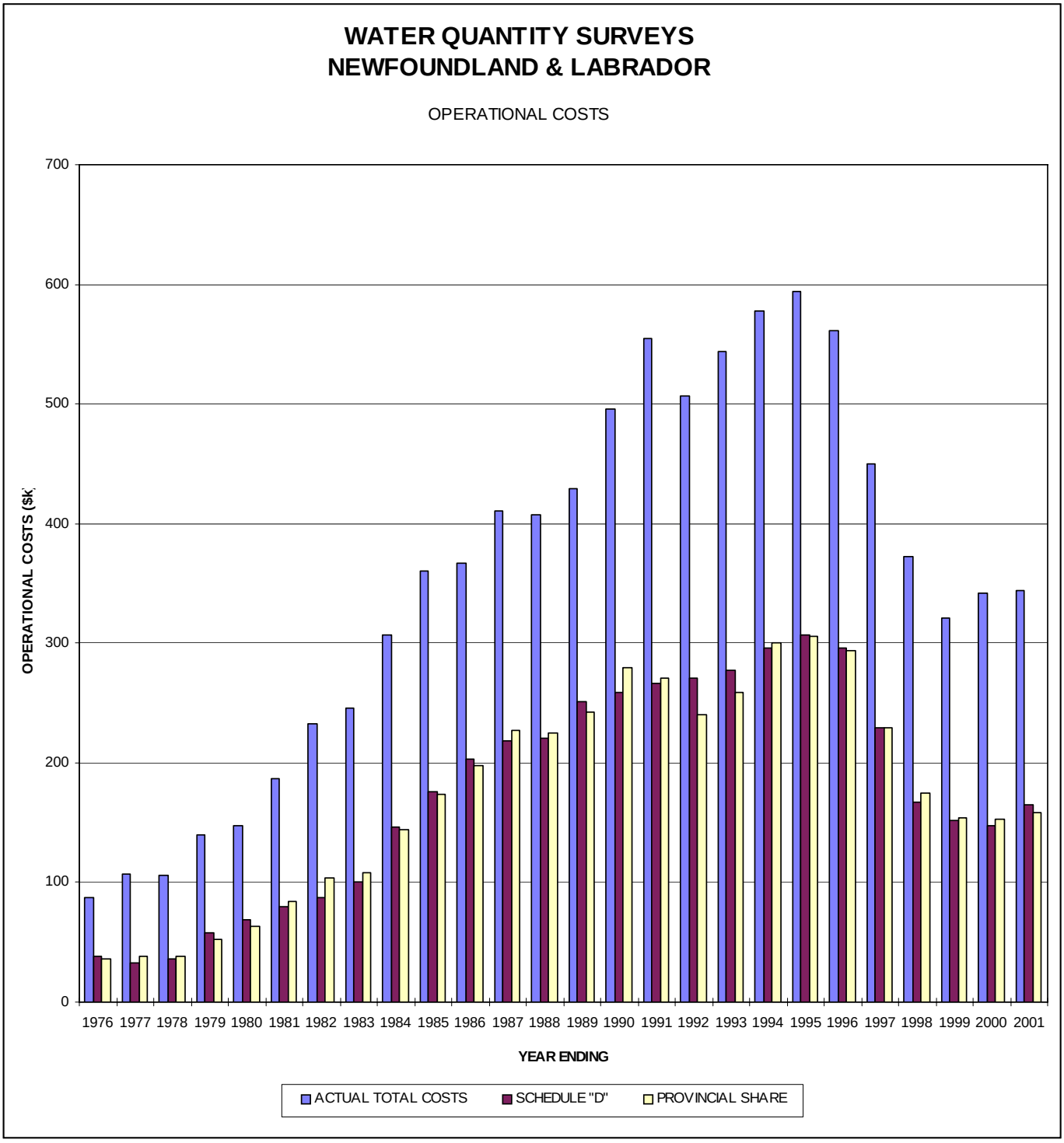
Salary & Operations		Construction		Total			Amount Payment	Received Minus
Sch. D	Actual Cost	Sch. D	Actual Cost	Sch. D	Actual Cost	Difference	Received	Actual
$165,270.71	$158,560.57	0	0	$165,270.71	$158,560.57	$6,710.14	$165,270.71	$6,710.14

SUMMARY OF ANNUAL COSTS AND PAYMENTS
1975-76 TO 1999-2000

	SCHEDULE "D" PAYMENTS BY PROVINCE				ACTUAL PROVINCIAL SHARE				+CREDIT
YEAR	HYDROMET	SEDIMENT	CONSTR	TOTAL	HYDROMET	SEDIMENT	CONSTR	TOTAL	-DEBIT
1975-76	37,800	-	3,600	41,400	36,238	-	2,177	38,415	2,985
1976-77	32,340	-	12,000	44,340	37,840	-	1,573	39,413	4,927
1977-78	35,520	-	24,480	60,000	38,700	-	13,963	52,663	7,337
1978-79	56,775	1,400	11,825	70,000	51,371	679	26,000	78,050	-8,050
1979-80	68,338	933	25,729	95,000	62,256	896	22,476	85,628	9,372
1980-81	78,639	1,475	6,000	86,114	83,518	1,064	7,703	92,285	-6,171
1981-82	83,523	3,750	14,000	101,273	100,726	3,114	16,560	120,400	-19,127
1982-83	96,542	3,744	55,000	155,286	102,735	5,886	47,224	155,845	-559
1983-84	141,457	4,470	38,000	183,927	136,917	6,906	37,864	181,687	2,240
1984-85	168,244	7,350	52,000	227,594	168,247	5,295	48,662	222,204	5,390
1985-86	195,563	7,650	36,787	240,000	191,580	6,324	39,203	237,107	2,893
1986-87	211,706	6,975	34,641	253,322	222,843	4,413	35,136	262,392	-9,070
1987-88	213,634	6,975	42,000	262,609	220,934	3,597	47,957	272,488	-9,879
1988-89	245,221	6,300	15,000	266,521	237,249	4,683	16,148	258,080	8,441
1989-90	253,392	5,173	30,000	288,567	274,004	5,571	21,264	300,839	-12,272
1990-91	260,691	5,925	-	266,616	266,058	4,809	2,532	273,399	-6,783
1991-92	264,591	6,450	-	271,041	234,222	5,649	-	239,871	31,170
1992-93	273,482	3,825	-	277,307	254,430	4,713	-	259,143	18,164
1993-94	270,983	3,700	21,000	295,683	276,163	3,505	20,496	300,164	-4,481
1994-95	295,500	3,200	-	298,700	288,835	3,220	-	292,055	6,645
1995-96	294,040	1,375	-	295,415	292,860	1,180	-	293,910	1,505
1996-97	229,643	0	-	229,643	229,643	0	-	229,643	0
1997-98	167,169	0	-	167,169	175,042	0	-	175,042	-7,873
1998-99	151,439	0	-	151,439	154,159	0	-	154,159	-2,720
1998-99	Adjustment**			-24,677					-24,677
1999-2000	147,934	0	-	147,934	152,829	0	-	152,829	-4,895
2000-2001	165271			165,271	158,561			158,561	6,710
								Net total	-8,778

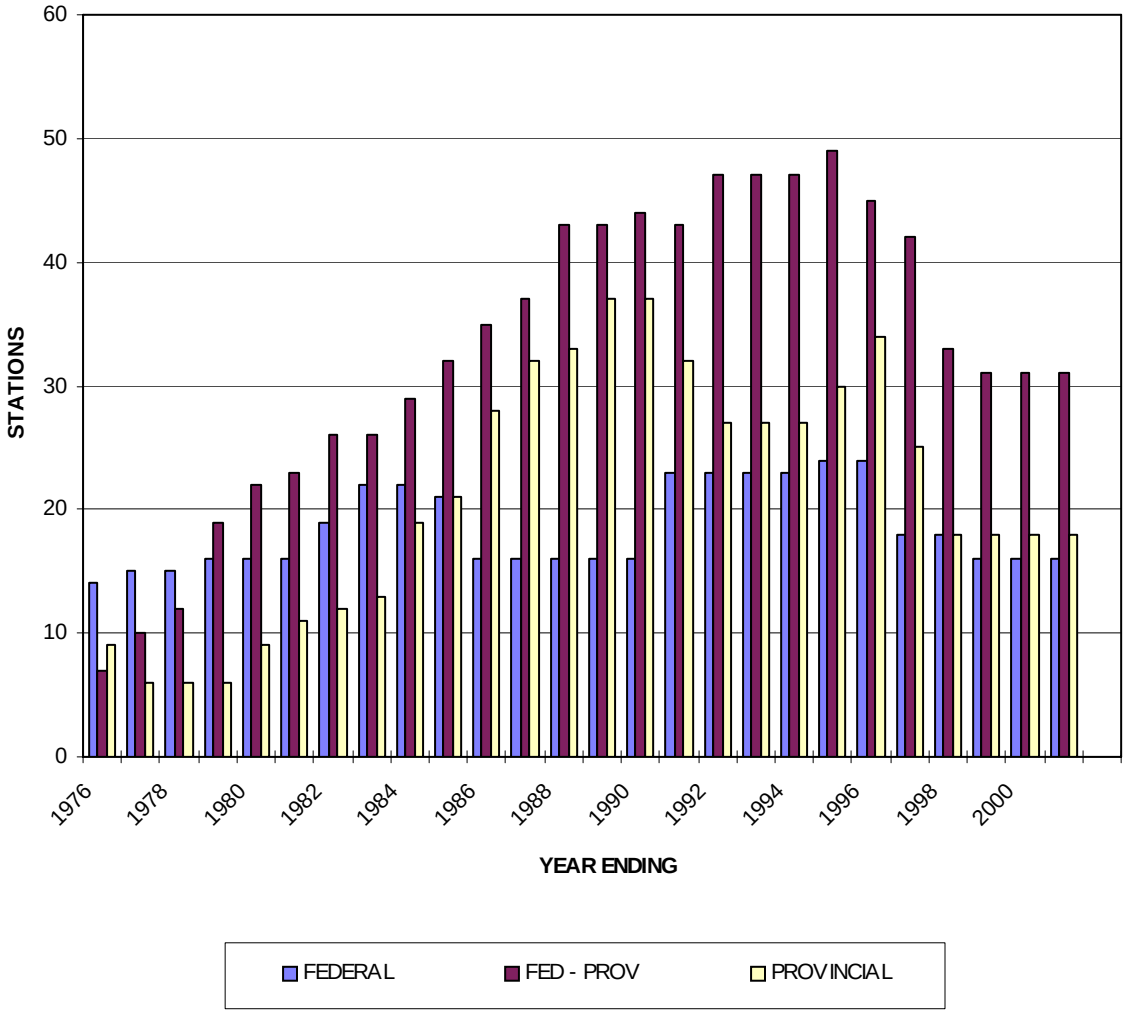
NOTES. A positive net total indicates funds owed to the province.

**Credit surplus of 24,677 in account toward cost of Modernization


WATER QUANTITY SURVEYS
NEWFOUNDLAND & LABRADOR
OPERATIONAL COSTS
OPERATIONAL COSTS ($K)
700
600
500
400
300
200
100
0
1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001
YEAR ENDING
ACTUAL TOTAL COSTS
SCHEDULE "D"
PROVINCIAL SHARE

WATER QUANTITY SURVEYS
NEWFOUNDLAND and LABRADOR

NUMBER OF STATIONS



APPENDIX I

SCHEDULE A

WATER QUANTITY SURVEY STATIONS

SCHEDULE "A" RESPONSIBILITY CLASSIFICATION NEWFOUNDLAND 2000-2001

FEDERAL 1 FEDERAL DEPARTMENTAL PROGRAMS

STA. NO.	STATION NAME	ESTAB.	D.A.	RECORD	REMARKS
02ZB001	Isle aux Morts River below Highway Bridge	1962	205	Q R C	DCP LG TYP LRTAP *A B E*
02YS006	Northwest River at Terra Nova National Park	1994	663	Q R C	DCP LG *A*
02ZK001	Rocky River near Colinet	1948	285	Q R C	DCP LGTYP MET WQ *A B E*
02YS003	Southwest Brook at Terra Nova National Park	1967	36.7	Q R C	DCP LG *A B E(CARRIER)*
02YL001	Upper Humber River near Reidville	1928	2110	Q R C	DCP LG TYP *A B E*

FEDERAL 2 INTERPROVINCIAL WATERS

STA. NO.	STATION NAME	ESTAB.	D.A.	RECORD	REMARKS
02XA003	Little Mecatina River above lac Fourmont	1979	4540	Q R C	DCP LG RMT MET WQ *A*

FEDERAL 4 NATIONAL WATER QUANTITY INVENTORY

STA. NO.	STATION NAME	ESTAB.	D.A.	RECORD	REMARKS
03QC002	Alexis River near Port Hope Simpson	1978	2310	Q R C	DCP LG RMT MET WQ *A*
02ZF001	Bay du Nord River at Big Falls	1950	1170	Q R C	DCP LG *A B E*
03QC001	Eagle River above Falls	1966	10900	Q R C	DCP LG RMT WQ TYP
02YQ001	Gander River at Big Chute	1949	4450	Q R C	DCP LG TYP *A B E*
02YJ001	Harrys River below Highway Bridge	1968	640	Q R C	DCP WQ LRTAP *A B C E*
02YL003	Humber River at Humber Village Bridge	1982	7860	Q R C	DCP LG REG *A C*
02YG001	Main River at Paradise Pool	1986	627	Q R C	DCP LG RMT *A E*
02YD002	Northeast Brook near Roddickton	1980	200	Q R C	DCP LG*A B*
02YC001	Torrent River at Bristol's Pool	1959	624	Q R C	DCP LG WQ *A B E*
03NF001	Ugjoktok River below Harp Lake	1979	7570	Q R C	DCP *LG* RMT WQ *A*

[16 F stations]

.FEDERAL-PROVINCIAL 3 REGIONAL WATER QUANTITY INVENTORY

STA. NO.	STATION NAME	ESTAB.	D.A.	RECORD	REMARKS
02YA002	Bartletts River near St. Anthony	1986	33.6	Q R C	DCP LG *A B*
02ZH002	Come-by-Chance River near Goobies	1961	43.3	Q R C	DCP LG *A B*
02ZE004	Conne River at Outlet of Conne Pond	1988	99.5	Q R C	DCP LG MET *A*
02YO011	Exploits River below Noel Pauls Brook	1985	6300	Q R C	DCPLG REG *A E*
02ZG001	Garnish River near Garnish	1958	205	Q R C	DCP LG LRTAP *A B*
02ZC002	Grandy Brook below Top Pond Brook	1982	230	Q R C	DCP LG RMT LRTAP *A E*
02YO008	Great Rattling Brook above Tote River Confluence	1984	773	Q R C	DCP LG *A E*
02YE001	Greavett Brook above Portland Creek Pond	1983	95.7	Q R C	DCP LG *A E*
02ZA002	Highlands River at TCH	1982	72.0	Q R C	DCP LG *A B E*
02YR003	Indian Bay Brook near Northeast Arm	1981	554	Q R C	DCP LG *A B E*
02YK002	Lewasseechjeech Brook at Little Grand Lake	1952	470	Q R C	DCP LG RMT *A E*
02YN002	Lloyds River below King George IV Lake	1980	469	Q R C	DCP LG RMT *A*
02YR001	Middle Brook near Gambo	1959	267	Q R C	DCP LG *A B E*
02ZK002	Northeast River near Placentia	1979	89.6	Q R C	LG *A B*
02YO006	Peters River near Botwood	1981	177	Q R C	DCPOGGER *A B*
02ZH001	Pipers Hole River at Mothers Brook	1952	764	Q R C	DCP LG WQ LRTAP *A B*
02ZG004	Rattle Brook near Boat Harbour	1981	42.7	Q R C	DCP LG *A B*
02YL005	Rattler Brook near McIvers	1985	17.0	Q R C	DCP LG *A B*
02YQ005	Salmon River near Glenwood	1987	80.8	Q R C	DCP LG *A E*
02ZG003	Salmonier River near Lamaline	1980	115	Q R C	DCP *LG A E*
02ZM009	Seal Cove Brook near Cappahayden	1979	53.6	Q R C	DCP LG *A B*
02YK005	Sheffield Brook near TCH	1972	391	Q R C	DCP LG *A B E*
02ZJ003	Shoal Harbour River near Clarenceville	1985	106	Q R C	DCP LG *A B*
02ZM016	South River near Holywood	1983	17.3	Q R C	DCP LG *A B*
02ZJ001	Southern Bay River near Southern Bay	1976	67.4	Q R C	DCP *LG A*
02YO012	Southwest Brook at Lewisporte	1989	47.7	Q R C	DCP *LG A*
02YM003	South West Brook near Baie Verte	1980	93.2	Q R C	DCP LG *A B*
0J02YS005	Terra Nova River at Glovertown	1985	2000	Q R C	DCP LG *A E*
02YL008	Upper Humber River above Black Brook	1988	471	Q R C	DCP LG RMT MET *A E*
02ZM018	Virginia River at Pleasantville	1984	10.7	Q R C	*LG A*
02ZM008	Waterford River at Kilbride	1974	52.7	Q R C	LG *A*

[31 F/P Stations]

PROVINCIAL 1 PROVINCIAL DEPARTMENTAL PROGRAM

STA. NO.	STATION NAME	ESTAB.	D.A.	RECORD	REMARKS
02ZL005	Big Brook at Lead Cove	1985	11.2	Q R C	LG *A B*
03OE010	Big Pond Brook below Big Pond	1993	71.4	Q R C	LG RMT *A*
02YK008	Boot Brook at Trans-Canada Highway	1985	20.4	Q R C	DCP LG *A B*
02YF002	Cat Arm Reservoir near Spillway	1994		H R C	DCP LG RMT *A*
02YL011	Copper Pond Brook near Corner Brook Lake	1994	12.9	Q R C	DCP LG *A*
02YL009	Corner Brook Lake at lake Outlet	1990		H R C	DCP LG REG MET
02YL007	Deer Lake at Deer Lake	1987		H R C	DCP LG *C*
02YK010	Grand Lake East of Grand Lake Brook	1988		H R C	DCP LG RMT MET *A*
02YM004	Indian Brook Diversion above Birchy Lake	1990		Q R C	DCP LG MET *A E*
02ZM020	Leary Brook at Prince Philip Drive	1985	17.8	Q R C	LG *A*
02ZK003	Little Barachois River near Placentia	1983	37.2	Q R C	DCP LG *A B*
02ZK004	Little Salmonier River near North Harbour	1983	104	Q R C	DCP LG *A B*
02ZM006	Northeast Pond River at Northeast Pond	1953	3.63	Q R C	DCP LG *A B*
02ZM022	Raymond Brk at Outlet of Bay Bulls Big Pond	1988		Q R C	LG REG *A B*
02ZJ002	Salmon Cove River near Champneys	1983	73.6	Q R C	DCP LG *A B*
02ZL004	Shearstown Brook at Shearstown	1983	28.9	Q R C	DCP LG *A B*
02YL004	South Brook at Pasadena	1983	58.5	Q R C	DCP *LG A* C *E*
02ZN002	St. Shotts River near Trepassey	1985	15.5	Q R C	DCP LG *A*
02YN004	Star Brook above Star Lake	2000	276	QRC	DCP LG RMT *A E*

[18 P stations] [19 since Oct 2000]

OTHER (Agreement)

STA. NO.	STATION NAME	ESTAB.	D.A.	RECORD	REMARKS
03OC007	Atikonak Lake West side	1998		HRC	DCP LG RMT MET *A* LHP
03OC005	Atikonak River above Atikonak Lake	l972	3680	QRC	DCP LG RMT WQ *A* LHP
03OC003	Atikonak River above Panchia Lake	1972	15,100	QRC	DCP LG RMT WQ *A* LHP
03OD007	East Metchin River below highway bridge	1998	1750	QRC	DCP LG RMT WQ *A* LHP
03OC004	Kepimits River below Kepimits Lake	1972	7070	QRC	DCP LG RMT WQ *A* LHP
03OE003	Minipi River below Minipi Lake	1979	2330	QRC	DCP LG RMT WQ *A* LHP
03PB002	Naskaupi River below Naskaupi Lake	1978	4480	QRC	DCP LG RMT WQ *A* LHP
03OE011	Pinus River	1998	772	QRC	DCP LG RMT WQ *A* LHP
02VC003	Romaine River below Lac Lavoie	1998		QRC	DCP LG RMT WQ *A* LHP

[9 O(A) stations]

OTHER

STA. NO.	STATION NAME	ESTAB.	D.A.	RECORD	REMARKS
03OE001	Churchill River above Upper Muskrat Falls	1948	92500	QRC	DCP LG REG RMT WQ *A* N&LH
02ZD002	Grey River near Grey River	1969	1340	Q R C	DCP LG RMT LRTAP MET *A E* N&LH
03OA006	Julienne Lake below Wabush Lake	1999		HRC	DCP LG RMT *A* IOCC
03OA005	Wabush Lake at Lake Outlet	1999		QRC	DCP LG RMT *A* IOCC
02ZC003	White Bear River above Big Indian Brook	1996		QRS	DCP LG REG RMT *A* N&LH

[5 O stations]

CONTRIBUTED STATIONS

STA. NO.	STATION NAME	ESTAB.	D.A.	AGENCY	REMARKS
03OA001	Ashuanipi River at Menihek Rapids	1952	19000	IOCC	REG RMT
03OC006	Atikonak River at Gabbro Lake	1973	21400	CFLCO	REG73 RMT
03OD006	Atikonak River at Ossakmanuan Lake Control Structure	1977		CFLCO	REG64 RMT
03OD005	Churchill River at Churchill Falls Powerhouse	1972	69200	CFLCO	REG71 RMT
02YL002	Corner Brook at Watsons Brook Powerhouse	1959	127	DLPCL	REG
02YO001	Exploits River at Grand Falls	1914	8390	AB-CONSL	REG
02YK006	Hinds Brook at Hinds Brook Powerhouse	1981	651	N&LH	REG81
02YK001	Humber River at Grand Lake Outlet	1898	5020	DLPCL	REG
02ZM003	Mobile River at Mobile First Pond	1962	112	NLPCL	REG
02ZM001	Petty Harbour River at Second Pond	1962	134	NLPCL	REG
02ZM002	Pierres Brook at Gull Pond	1962	117	NLPCL	REG
02YO003	Rattling Brook at Rattling Brook Powerhouse	1962	378	NLPCL	REG
02ZE003	Salmon River at Bay D'Espoir Powerhouse	1967	5910	N&LH	REG67
02YO004	Sandy Brook at Sandy Brook Powerhouse	1964	508	NLPCL	REG

[14 contrib. Stations]

EXPLANATION OF SYMBOLS & ABBREVIATIONS

TYPE OF RECORD

H _ water level data

Q - flow data

TYPE OF GAUGE

M - manual gauge

R - automatic recording gauge

OPERATION SCHEDULE

C - continuous record

M - miscellaneous record

S - seasonal record

REMARKS

DCP - data collection platform

LRTAP - samples collected for acid precipitation monitoring

MET - data available from meteorological sensors

REG - regulated flow REG78 - regulated flow since 1978

RMT - remote station accessed by aircraft

TMK - telephone interrogated telemark

TYP - typical stream; data used to produce statement on runoff conditions

WQ - samples collected for water quality national overview network

LG - data recorded by digital data Logger

A - building of any type on the site; California shelter incl

B - well

C - power and/or telephone

E - cableway

N&LH - Newfoundland and Labrador Hydro

LHP - Labrador Hydro Project

NLPCL - Newfoundland light and power company limited

DLPCL - Deer lake power company limited

AB-CONSL - Abitibi - Consolidated

HUMBER RIVER DATA COLLECTION NETWORK

Real Time Instrumentation To Be Operated and Maintained By Water Survey of Canada In Accordance With Memorandum of Understanding.

Station		Response Time
1.	Burgeo Road near Buchans Access	48 Hrs.*
2.	Grand Lake at Southwest End	48 Hrs.
3.	Grand Lake on Glover Island	48 Hrs.*
4.	Upper Humber River above Black Brook	48 Hrs.
5.	Corner Brook Lake at Lake Outlet	48 Hrs.*
6.	Sandy Lake at Howley Road	48 Hrs.*
7.	Indian Brook Diversion to Birchy Lake	48 Hrs.
8.	Lewassechjeech Brook at Little Grand Lake	48 Hrs.
9.	Sheffield Brook near T.C.H.	48 Hrs.
10.	Humber River at Humber Village Bridge	48 Hrs.
11.	Upper Humber River near Reidville	48 Hrs.
12.	Deer Lake near Generating Station	48 Hrs.
13.	Aides Lake	48 Hrs*
14.	Hinds Lake	48 Hrs*

* precipitation guage

Station 8-12 are not equipped with meteorological sensors but are included in this list of "Response Time Repair" due to the significance of the data in supporting the "Humber River Basin Data Collection Network".

APPENDIX II

SCHEDULE D

SUMMARY OF ANNUAL PAYMENT

SCHEDULE D

This schedule provides a summary of the annual payments. The details for operation and construction are available and have been jointly reviewed by the officers of each party.

ANNUAL PAYMENT FOR 2000-2001 TO BE PAID TO THE RECEIVER GENERAL FOR CANADA BY THE PROVINCE OF NEWFOUNDLAND

	Operation	**Construction**	**Total**
a) Streamflow and Water level installation: **Island**	$162,694.50		$162,694.50
b) Streamflow and Water level installations: **Labrador**	$2,576.21		$2,576.21
c) Decommissioning			$0.00
d) Humber met Stations	$5,231.33		$5,231.33
e) Churchill Falls Labrador Corp.	$115,000.00		$115,000.00
f) Reduction from Commercial Activity	-$33,161.22		-$33,161.22
	Total Annual Payment		$252,340.8

_____ _____

M .G. Goebel
Director, Water Resources Management Division
Department of Environment and Labour

W. S Appleby
Director
Atmospheric Environment Branch

Administrator for Province

Administrator for Canada

APPENDIX III

MINUTES OF COORDINATING COMMITTEE MEETING

CANADA NEWFOUNDLAND
COST SHARING AGREEMENT

March 23, 2000
St. John's Newfoundland

AGENDA

OPENING REMARKS: Martin Goebel and John Merrick

REVIEW OF SCHEDULE "A"

1. In the remarks column , change 'logger' to LG and add identifiers for LHP and NFLH IOC, etc., to identify stations' contract links.
2. The presentation copy of schedule has 6 stations in 'other' category with strikethrough for information on changes from last year. These have been closed and will not appear on the final version.
3. Data for 1999 water year will be completed early in 2000.

REVIEW OF SCHEDULE "D"

1. Ref; spreadsheet 2000-2001.
2. Bill Brimley explained the details of the sheet. Salaries increase due to EG contract and signing bonus. Estimates are based on finance information as of end January and prorated to the end of the year . New federal budget rules require that we invoice quarterly as the funds to operate the network must come form the invoiced costs . Also we should re-commence tracking the annual differences between estimates and actual expenditures. The mechanics of this annual reconciliation are to be sorted out.
3. Martin Goebel suggested we start with the provincial budget allocation and work to that since that will be the controlling factor. The provincial allocation for 2000-01 is 41K short of estimated schedule D costs. In spirit of national administrators meetings we can consider some aspects of in-kind value made by the province in reducing this difference. Other steps will have to be taken to reduce costs. Haseen Khan suggested Web site costs, reports, etc., and adding an item f) to schedule D document such as 'provincial in-kind contributions…' with a schedule E to describe the in-kind work. Province will work up some values for in-kind contributions and forward them to Bill Brimley. **(Action H. Khan)**
4. Cal Baker to send letter to Haseen Khan by September re the installation of Star Lake for submission for provincial TB. Station to be operated under full cost recovery. This may offset some cost aspects of the network. **(Action C. Baker)**
5. John Merrick will contact Dave Harvey and Bob Hale re potential for in-kind web support and desire to recognize value of NF web work. **(Action J. Merrick)**
6. The province has 40K for climate program so the total for all MSC related activities is 172K.

CONTRACTS:

Labrador Hydro Project: - Churchill Falls

- All 9 sites are in place with a contract for $115k for each of five years….if project continues. For all project stations LHP provides all transport, logistics, etc. If the contract is terminated and a final detailed accounting will be conducted to satisfy commitments of both parties.

These 9 stations were added to Schedule A , classified as "Other Agreement" [O(A)]

Voisey's Bay:

- All stations were discontinued with the shutdown of operations. All equipment removed - see below

Newfoundland and Labrador Hydro:

- There is potential activity in this area ;

Call from Bob Barnes requesting a proposal for a water level program on Victoria lake. Proposal has been prepared by Cal.

- contracts are on going for Churchill river at Muskrat Falls, Grey river and White Bear river.

Iron Ore Company:

- Two sites included in Schedule A; Julienne Lake and Wabush Lake.
- Stations were installed at the request of Jacques Whitford Environmnetal Ltd. for IOC in response to environmental regulations requiring the impoundment of mine tailings in Wabush lake from the iron ore operation in Labrador City.

These were classified as "Other" stations [(O)]

Star Lake

- In response to the loss of the hydrometric station at Star Lake, due to hydro development, a new hydrometric station is proposed on the tributary flowing into the North end of the Star Lake reservoir with climate station near dam site. H&S implications with rapids and flow strength may require a cableway installation. A preliminary reconnaissance has been carried out with a final site inspection scheduled for design purposes. **(Action C. Baker)**

Abitibi Consolidated

- MSC was contacted to set up a monitoring station at Miller Town dam, and Red Indian Lake. The dam is a 'No phone' scenario, logger alarm and data access were required through MSAT. Cal put effort into MSAT research and made a system work. Now cell service is likely available. A full met station will be required as well. An early spring installation will be possible if proposal accepted. Bill suggested that before the MSAT is abandoned for the cellular phone the reliability of the cell phone be tested during bad weather when these things usually fail and are needed most.**(Action C. Baker)**

Terra Nova National Park: .

- Parks Canada owns all of the equipment etc. If we run it, it will be at station cost.

OPERATIONAL SAFETY AND HEALTH

Cableways

- Concerns were raised on the status of regional cableways by information on the shut down of Trans-Alta cableways by Alberta labour. All NF cableways APPEAR TO meet the standards criticized by Alberta labour. However, there may also be a problem with fiber core cables. Last year a destructive test was done on a cable removed from an NB site. All was OK with the cores, even though it had been in a salt corrosive environment. A problem identified was that the type of cable used was not supposed to be affixed in the manner in which these have been done (curve limits on terminations, etc) so, we are looking at replacing these fiber core cables for this reason.
- We will survey and prioritize cable replacements according to criteria to be developed. Also there is a need to consider when bank operated cable measuring systems will be available to get technician off the cable, eliminating the need to replace some fiber core cables. These are coming. The national monitoring committee is suggesting that we consider having the cableway plans reverse engineered to be certain that they meet current standards. **(B.Brimley and C. Baker)**
- An Alternative Technologies Working Group has been established at national level to look at ways of getting the tech out of the cablecar and the water.

- Lewaseechjeech brook fiber core cable was replaced with a 7/8" independent wire rope core cable
- Helicopter landing pads were constructed at Lewaseechjeech brook and White Bear river
- All staff received training on streamgauging cableways construction and inspection. Training was given by C.R Wagner, USGS (ret)

- A brief description was given by Cal on working alone wrt cable work. Mention of Telelink call-in services used in the region by technicians traveling and working alone. Swiftwater safety course planned for all staff to be held in NF. Remote arctic survival courses required for all flying staff.
- Bill will ask Mike delaRonde to put together a THA package and he send to Martin. **(Action B. Brimley)**

MERCURY

- A seasonal station at Badger has a manometer operated for the community needs to be removed. New equipment and some development are needed to support local community. **(Action H. Khan and B. Brimley)**

DECOMMISSIONING

- Stations which have been removed and mothballed continue to have safety hazards to public and vandalism. The feds are going through a process to close and rehabilitate sites. Virginia River at Cartwright ,located on a walking trail, was cleaned and decommissioned. SW Gander and NW Gander is decommissioned. Waterford river at Mount Pearl was decommissioned due to vandalism. Other discontinued stations need to be prioritized including an assessment of potential Hg impact.
- Hg cleanups; this is likely to be a very long term and expensive clean-up program. Will need to assess and work at each station where Hg was ever used. Some federal $ coming for federal stations. Proposed federal clean-up criteria are 40ppm urban 250 ppm rural clean-up unless Provincial standards are higher than Federal standards. Cal, Bill and Haseen will survey and prioritize active and closed sites wrt national sampling survey protocol: overflow kit usage, Hg never used, etc.

- Planning; for all of above. **(Action C. Baker, B. Brimley & H. Khan)**
- Cost/paying. It was recognized that due to the NF budget that there would be no Provincial money available to start the Hg clean-up program, so it is anticipated that federal sites will be cleaned up first.

MODERNIZATION

- The moderization of the NF network has been completed in accordance with previously arranged funding arrangements. Due to fed funding arrangements in 1992-94 Environment Canada funded all NF modernization and as a result owns all equipment.
- ADCP - Acoustic Doppler Current Profiler. Used for larger streams. Trials will be held in NB in 2000. Region has invested in one to be used initially in a training mode. This is not new technology but vastly improved and becoming cheaper which makes it potentially cost effective. The equipment is now smaller and can be used with a tether on pontoons or in a small boat to do bridge or moving boat measurements. There is potential to put this in a remote controlled vessel thus getting the tech out/off of the water. It was explained that this technology is not usable at all sites but is promised to reduce the time and risk in most medium to large streams .

STAFFING

- A brief introduction of the new staff member Dave Sinnott was made outlining his geomatics technology and extensive field experience.

Y2K

- The Y2K issue was a non-event. A review of intensity of effort at the regional and national level of organization wrt inventory of all equipment, software, chips , etc. versions of software, versions and generations of chips, etc. was given.

AGREEMENT

- Direct and Indirect cost. Beginning with the FY 2001 -02 all direct and indirect costs incurred by the federal government in fulfilling the agreement will be included. To offset this the provincial government will table in-kind support to the agreement that may be used to offset the increased cost. **(Action H.Khan)**

ANNUAL REPORTS

- Agreement was reached that a compilation of the three years up to Mar 31 2000 will be suffice if details of minutes, schedules and construction are all included.**(Action B. Brimley)**

ACCOUNTING

- Quarterly invoicing: It was agreed that the federal government will bill on a quarterly basis in advance of the quarter with the exception of the first invoice which will come as soon as possible after the new year. Cost differences from the estimate must be rectified but the province does not wish to have costs transferred over to a new FY. Bill was not sure how this could be achieved with a signed Schedule D. Options will have to be explored as to how this can be achieved within the Schedule D. **(Action: H.Khan and B. Brimley)**

WATER QUALITY

- Remote site sampling - water quality samples are being collected at each "remote site" visit and will continue to be collected. There is a small window of opportunity to collect samples from priority sites which happen to be en route to or from hydrometric sites.
- Instrumentation - discussion of availability of newer Hydrolab sensors which can take advantage of data platforms to record data on pH, specific conductance, and turbidity(?) at selected sites. The range of reliable parameters is increasing. Strong possibility that Hydrolab will be installed on Upper Humber in conjunction with Model Forest. Discussed decommissioning Boot Brook site and moving it to a site on Main River. (Subsequently talked with Joe Pomeroy. He is also exploring the possibility of an AWQM on the Lomond River with Parks and NFDOEL as partners.)
- Ashkui - Calvin mentioned that he sees those "early open water sites" on the north bank on the outside of meanders. Also downstream of lakes on the Ugjoktok and Minipi or associated with boggy areas.
- From the provincial side they now have a data set with data from 1986 - 1999. The transfer of data will now be on an annual basis. The Annual Reports are up to date and a draft Interpretive Report on the Exploits River watershed is under review. There is money in the provincial budget for THM analyses. The Province will tender those analyses and the call for tenders will go out shortly. The Province and municipalities are processing the invoices for 1999/2000. **(Action H. Khan)**
- Haseen asked for a status report on the tap and waste water sample analyses. **(Action T. Pollock)**
- H. Khan reported that he has obtained information from all of the Provinces on the status of Water Quality information at the National Level. The survey includes: no. of stations, start date, period of record, resources (fed., prov., other), media analysed, technology being used and who & what are the data users. A very useful document.

- Paul Barnable, Prov Environment and Labour, Corner Brook, contacted Cal regarding a proposed water quality monitoring station on the Upper Humber River. A hydrolab / data logger with GOES transmitter is proposed. To provide a logger for the project a suggestion was made to close the Boot brook station and re-deploy the instrumentation. Haseen to consult with Anil Beersing. (Action H. Khan)

CLIMATE NETWORK - Ken Rollings . John Merrick left the meeting early without the opportunity to speak to Ken. Phone and email contact will be made.

OTHER DISCUSSION TOPICS

- Voisey's. All stations have been shut down and equipment removed. All equipment has been turned back to Inco after sorting out serial number conflicts due to Y2K and loaners, spares, etc. Their shelters etc., are still there. No monitoring of any kind going on at all; air samplers etc., are all shut down. Voisey's work is all outside the agreement. All data is integrated into the archives. No data is now considered proprietary after one year lapse.
- HYDAT info: all 99 data must be in to National by end June and new CD out by end Sept. new national web site t wrt hydat data banks is being developed.

Info on NewLeaf: incorporates Compumod and as well as captures data from DCP's and modems. The data will be auto ingested to server. Planned links to the web require development for on-line real time QC. Quebec Region has ben working on a auto QA/QC routine for the St. Lawrence R. but it has not been applied to smaller streams and rivers where the response is

more varied

APPENDIX IV

OTHER CORRESPONDENCE