WATER QUANTITY SURVEYS

COST SHARING AGREEMENT

CANADA - NEWFOUNDLAND

ANNUAL REPORT 1994-95

Dr. W. Ullah
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 1994-95.

Members of the Co-ordinating Committee

H. Khan
Member for Newfoundland
St. John's, Newfoundland

C. J. Power
Member for Canada
Bedford, Nova Scotia

CONTENTS

INTRODUCTION

The year ending March 31, 1995 was the twentieth 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 Water Resources Management Engineer, 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 1994-95 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 1994-95 annual payment.

WATER QUANTITY SURVEYS

PROVINCE OF NEWFOUNDLAND

OPERATIONAL COSTS FOR HYDROMETRIC SURVEYS

ISLAND 1994-95

	Estimated	Actual
Personnel - Basic Pay - 01, 02, 03 (Salaries of hydrometric technical staff including overtime)	278,500	273,900
Transportation and Communications		
Travel - 07	23,000	23,800
Transportation and Postage - 09	2,000	2,280
Telecommunications - 10, 11	700	1,100
Professional and Special Services		
Professional Services - 18	500	500
Other Services - 22	4,500	4,500
Rentals - 25	56,000	57,000
Purchased Repair and Upkeep		
Equipment Purchased and Repairs - 28	3,500	3,500
Building and Structures Repairs - 29	3,500	1,800
Utilities, Materials and Supplies		
Public Utility Services - 32	1,500	1,300
Purchased Materials, Supplies, Misc. Goods - 33, 34	29,500	28,000
Parts and Consumable Tools - 35	5,500	4,900
Other Costs - Data Processing	14,380	15,600
- Depreciation of Vehicles (5)	17,393	17,000
- Depreciation of Field Equipment and Instruments	9,037	10,000
TOTAL	**449,510**	**445,180**

WATER QUANTITY SURVEYS

PROVINCE OF NEWFOUNDLAND

OPERATIONAL COSTS FOR HYDROMETRIC SURVEYS

LABRADOR 1994-95

	Estimated	Actual
Personnel - Basic Pay - 01, 02, 03 (Salaries of hydrometric technical staff including overtime)	68,500	69,600
Transportation and Communications		
Travel - 07	15,500	12,700
Transportation and Postage - 09	2,000	2,000
Telecommunications - 10, 11	-	
Professional and Special Services		
Professional Services - 18	-	
Other Purchased Services - 22	1,500	1,200
Rentals - 25	55,000	56,900
Purchased Repair and Upkeep		
Equipment Purchased and Repairs - 28	500	-
Building and Structures Repairs - 29	-	-
Utilities, Materials and Supplies		
Public Utility Services - 32	-	-
Purchased Materials, Supplies, Misc. Goods - 33, 34	2,000	1,100
Parts and Consumable Tools - 35	1,000	600
Other Costs - Data Processing Costs	2,840	2,500
- Depreciation of Field Equipment and Instruments	2,706	2,700
TOTAL	**151,546**	**149,300**

WATER QUANTITY SURVEYS

PROVINCE OF NEWFOUNDLAND

1994-95 OPERATIONAL COSTS FOR SEDIMENT SURVEYS

Personnel - Basic Pay - 01, 02, 03	
Transportation and Communication	
Travel - 07	250
Transportation and Postage - 09	100
Telecommunications - 10, 11	
Professional and Special Services	
Professional Services - 18	-
Other Purchased Services - 22	100
Rentals - 25	-
Purchased Repair and Upkeep	
Equipment Purchased and Repairs - 28	200
Building and Structure Repairs - 29	-
Utilities, Materials and Supplies	
Public Utility Services - 32	300
Purchased Materials, Supplies, Misc. Goods - 33, 34	-
Parts and Consumable Tools - 35	100
Other Costs - Sample Analysis	4,450
- Depreciation of Field Equipment and Instruments	900
TOTAL	**$6,400**

WATER QUANTITY SURVEYS

CALCULATION OF ANNUAL COSTS AND PAYMENTS - 1994-95

HYDROMETRIC SURVEYS - ISLAND

Station Classification	Stations	Station Units
F1	7 *	6.5
F4	11	11.0
FP3	44	44.0
P1	26 **	23.4
TOTALS	88	84.4

Average Cost/Island Station Unit = $445,180 / 84.4 = 5,275

Provincial Share
= (50% of 44.0 x $5,275) + (100% of 23.4 x $5,275)
=($116,050 + 123,435) = **$239,485**

* includes 0.5 year operation of Parks Station

** includes 2 new Corner Brook Lake stations and 0.5 year for Cat Arm River water level station.

HYDROMETRIC SURVEYS - LABRADOR

Station Classification	Stations	Station Units
F2	2	2.0
F4	4	4.0
FP3	5	5.0
P1	4	1.7
TOTALS	15	12.7

Average Cost/Labrador Station Unit = $149,300 / 12.7 = $11,750

Provincial Share
= (50% of 5.0 x $11,750) + (100% of 1.7 x $11,750)
= (29,375 + 19,975) = **$49,350**

HYDROMETRIC SURVEYS - ISLAND AND LABRADOR

Total Provincial Share of Operational Cost for Hydrometric Surveys on the Island and in Labrador
= 239,485 + 49,350 = **$288,835**

Provincial Payment Received for Operational Costs for Hydrometric Surveys per Schedule "D" **$295,500**

SEDIMENT SURVEYS

Average Cost/Station = $6,400/14 miscellaneous sediment station units
= $6,400 / 14 = $460.00

Provincial Share of Operational Costs for Sediment Surveys
(50% x 14 x $460) = $3,220

Provincial Payment Received for Operational Costs for
Sediment Surveys per Schedule "D" $ 3,200

DATA COLLECTION PLATFORMS

In 1992-93 the Province made the eighth of ten imputed rental payments through the mechanism of a credit to the balance of payments: (Annual Report 1993-94; page 52). In 1993-94, the Province made a double rental payment, resulting in a balance owing to Environment Canada of $0.00 on the total of ten imputed rental payments.

Annual Imputed Rental for Recovery of Costs
from Purchase of 14 DCPs $ 0

Provincial Payment Received for DCPs per Schedule "D" * $ 0

METEOROLOGICAL STATIONS

Operational Services Relating to Humber River
Meteorological Stations $4,261

Provincial Payment Received for Meteorological Stations $ 8,200

CONSTRUCTION PROJECTS

2 meteorological stations @ 2,000 = $ 4,000
Badger Station@ 5,000 = $ 5,000 = $9,000

Provincial Payment Received for Construction Projects $ 0

TOTALS

Total Provincial Share for Streamflow
Operations, Sediment and Met Stations
($288,835 + 3,220 + 0 + 4,261 + 9,000) = **$305,316**

Total Provincial Payment Received for Streamflow
Operations, Sediment and Met Stations per Schedule "D"
($295,500 + 3,200 + 0 + 8,200 + 0) = **$306,900**

TABLE 1
WATER QUANTITY SURVEYS
GAUGING STATION DATA FOR 1994-95

No. of Stations: incl Contrib			Changes during 1994-95		Stn. Designation April 1, 1994			
April 1, 1993	April 1, 1994	Change	Added	Discontinued	Fed	F/P	Prov.	Contrib.
111 (2)	117	6	6	0	24	49	30	14

* Bracket Sediment Stations

TABLE 2
WATER QUANTITY SURVEYS
COMPARATIVE GAUGING STATION DATA April 1, 1975 - April 1, 1994

Federal Stations			F/P Stations			Provincial Stations			Total Stations		
Apr 1, 1975	Apr 1,1994	Change	Apr 1, 1975	Apr 1, 1994	Change	Apr 1, 1975	Apr 1, 1994	Change	Apr 1, 1975	Apr 1, 1994	Change
14	24	10	7	49	42	9	30	21	30	103	73

TABLE 3
WATER QUANTITY SURVEYS
DETAILED GAUGING STATION DATA 1994-95

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
7	2	0	15	24	0	0	49	49	30	0	30	14	117

TABLE 4
WATER QUANTITY SURVEYS
SUMMARY OF SCHEDULES D - 1994-95

Streamflow & Water Level		Sediment		Total
Operation	Construction	Operation	Construction	
295,500	0	3,200	0	298,700

TABLE 5
WATER QUANTITY SURVEYS
COMPARISON - SCHEDULED & ACTUAL DOLLAR COSTS FOR 1994-95
(does not include any costs for Humber River Meteorological Stations)

Salary & Operations		Construction		Total			Amount Payment	Received Minus
Sch. D/F	Actual Cost	Sch. D/F	Actual Cost	Sch. D/F	Actual Cost	Difference	Received	Actual
298,700	292,055	0	0	298,700	292,055	6.645	298,700	6,645

SUMMARY OF ANNUAL COSTS AND PAYMENTS

1975-76 TO 1994-95

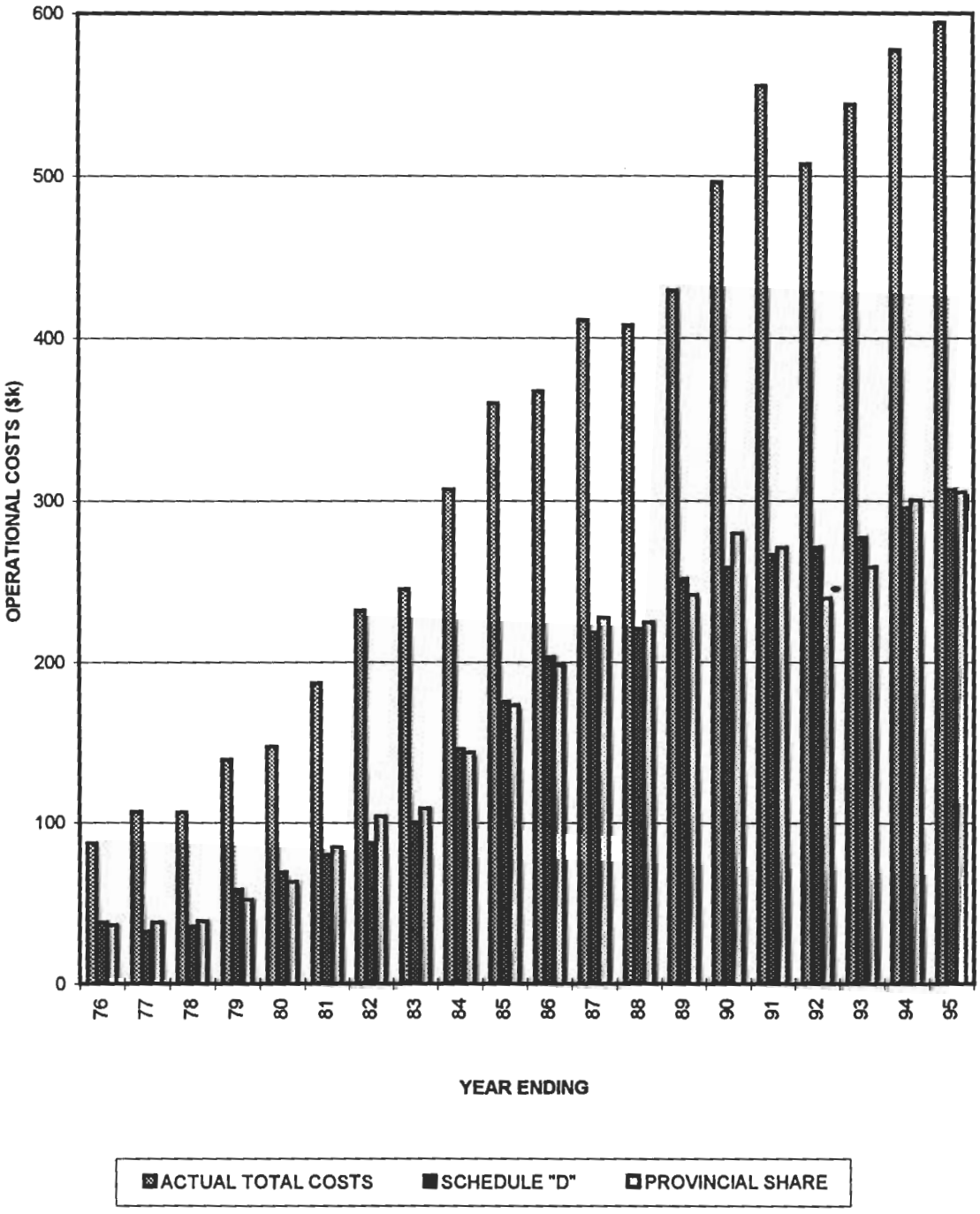
NEWFOUNDLAND

	SCHEDULE "D" PAYMENTS BY PROVINCE				ACTUAL PROVINCIAL SHARE				
YEAR	HYDROMET	SEDIMENT	CONSTR	TOTAL	HYDROMET	SEDIMENT	CONSTR	TOTAL	+CREDIT - 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
								Net	+23,172

NOTE:
* Not including $11,678 payment for imputed rental of 14 DCPs
** Not including $11,678 DCP payment plus cost of operation of Humber River met sites.
*** Not including $23,356 DCP payment plus cost of operation of Humber River Met Stations

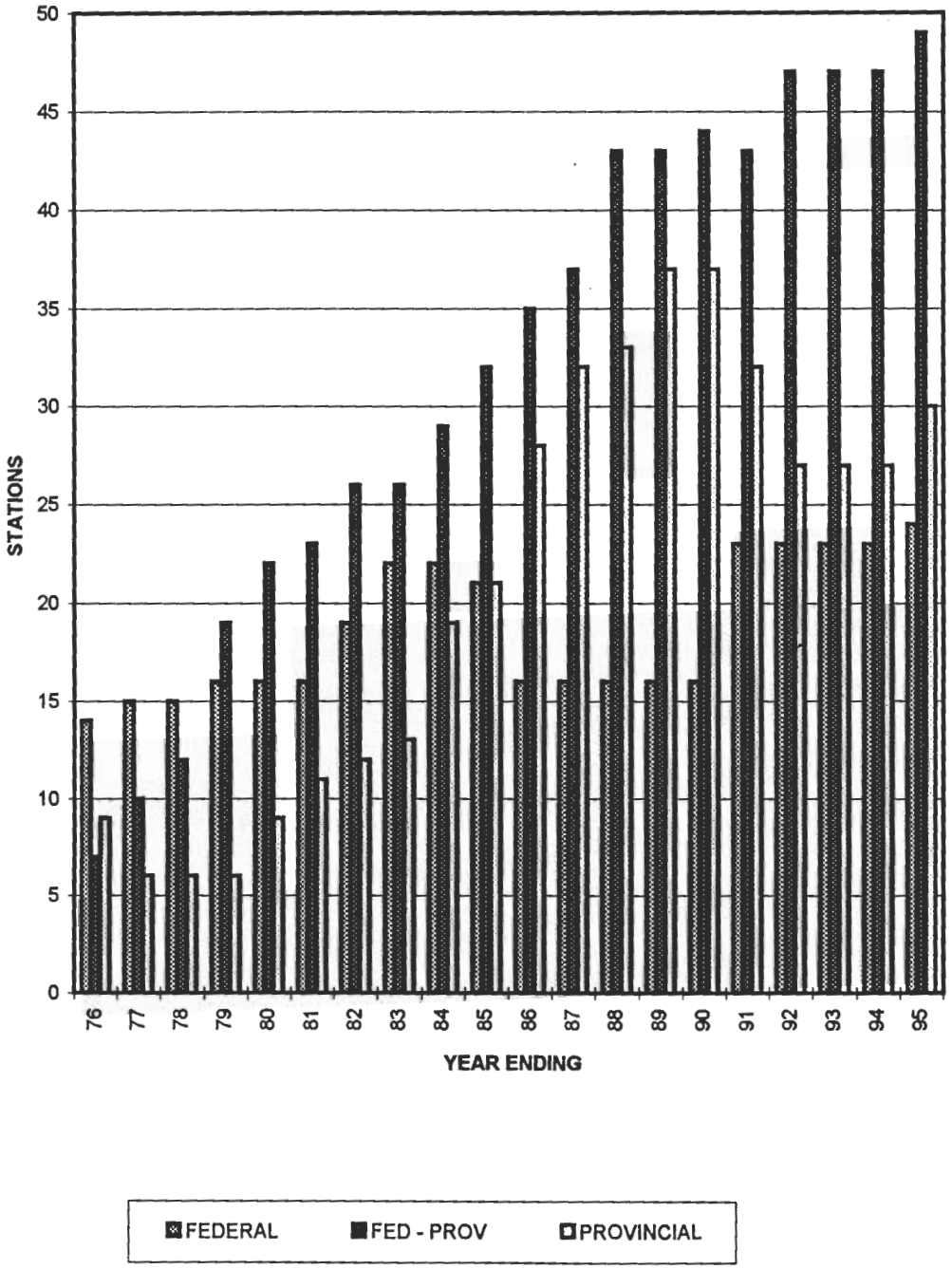
WATER QUANTITY SURVEYS
NEWFOUNDLAND

OPERATIONAL COSTS



WATER QUANTITY SURVEYS
NEWFOUNDLAND

NUMBER OF STATIONS



APPENDIX I

SCHEDULE A

WATER QUANTITY SURVEY STATIONS

SCHEDULE "A" RESPONSIBILITY CLASSIFICATION NEWFOUNDLAND 1994-95

FEDERAL 1 FEDERAL DEPARTMENTAL PROGRAMS

STA. NO.	STATION NAME	ESTAB.	D.A.	RECORDS	REMARKS
02YH001	Bottom Creek near Rocky Harbour	1985	33.4	Q R C	SEDM
02ZB001	Isle aux Morts River below Highway Bridge	1962	205	Q R C	DCP TYP LRTAP
02ZM006	Northeast Pond River at Northeast Pond	1953	3.63	Q R C	
02YS006	Northwest River at Terra Nova National Park *	1994	663	Q R S	DCP LOGGER
02ZK001	Rocky River near Colinet	1948	285	Q R C	DCP TYP WQ SEDM MET
02YS003	Southwest Brook at Terra Nova National Park	1967	36.7	Q R C	
02YL001	Upper Humber River near Reidville	1928	2110	Q R C	DCP TYP SEDM

* In 1994-95 operated only half year, therefore designation of QRS

FEDERAL 2 INTERPROVINCIAL WATERS

STA. NO.	STATION NAME	ESTAB.	D.A.	RECORDS	REMARKS
02XA003	Little Mecatina River above lac Fourmont	1979	4540	Q R C	DCP RMT MET
02XA004	Rivière Joir near Provincial Boundary	1980	2060	Q R C	RMT

FEDERAL 4 NATIONAL WATER QUANTITY

STA. NO.	STATION NAME	ESTAB.	D.A.	RECORDS	REMARKS
02ZF001	Bay du Nord River at Big Falls	1950	1170	Q R C	DCP
03OE001	Churchill River above Upper Muskrat Falls	1948	92500	Q R C	DCP RMT REG71 WQ
03QC001	Eagle River above Falls	1966	10900	Q R C	DCP RMT WQ TYP
02YO005	Exploits River below Stony Brook	1969	8640	Q R C	REG WQ
02YQ001	Gander River at Big Chute	1949	4400	Q R C	DCP TYP
02ZG001	Garnish River near Garnish	1958	205	Q R C	LRTAP
02ZD002	Grey River near Grey River	1969	1340	Q R C	DCP RMT LRTAP MET
02YJ001	Harrys River below Highway Bridge	1968	640	Q R C	DCP SEDM WQ LRTAP
02YL003	Humber River at Humber Village Bridge	1982	7860	Q R C	DCP REG
02YG001	Main River at Paradise Pool	1986	627	Q R C	DCP RMT
03PB002	Naskaupi River below Naskaupi Lake	1978	4480	Q R C	RMT
02YD002	Northeast Brook near Roddickton	1980	200	Q R C	
02YS005	Terra Nova River at Glovertown	1985	2000	Q R C	DCP SEDM
02YC001	Torrent River at Bristol's Pool	1959	624	Q R C	WQ
03NF001	Ugjoktok River below Harp Lake	1979	7570	Q R C	RMT

FEDERAL-PROVINCIAL 3 REGIONAL WATER QUANTITY

STA. NO.	STATION NAME	ESTAB.	D.A.	RECORDS	REMARKS
03QC002	Alexis River near Port Hope Simpson	1978	2310	Q R C	DCP RMT MET
02YA002	Bartletts River near St. Anthony	1986	33.6	Q R C	
03OE010	Big Pond Brook below Big Pond	1993	71.4	QRC	RMT LOGGER
02YJ002	Blanche Brook near Stephenville	1978	120	Q R C	REG
02ZH002	Come-by-Chance River near Goobies	1961	43.3	Q R C	
02ZE004	Conne River at Outlet of Conne Pond	1988	99.5	Q R C	DCP
02YO011	Exploits River below Noel Pauls Brook	1985	6300	Q R C	DCP REG
02ZC002	Grandy Brook below Top Pond Brook	1982	230	Q R C	DCP RMT LRTAP
02YO008	Great Rattling Brook above Tote River Confluence	1984	823	Q R C	DCP
02YE001	Greavett Brook above Portland Creek Pond	1983	95.7	Q R C	
02ZA002	Highlands River at TCH	1982	72.0	Q R C	SEDM
02YR003	Indian Bay Brook near Northeast Arm	1981	554	Q R C	
02YM001	Indian Brook at Indian Falls	1954	974	Q R C	WQ LRTAP REG SEDM
02YO010	Junction Brook near Badger	1985	61.6	Q R C	
03NG001	Kanairiktok River below Snegamook Lake	1979	8930	QRC	DCP RMT
02YK002	Lewasseechjeech Brook at Little Grand Lake	1952	470	Q R C	DCP RMT
02ZA001	Little Barachois Brook near St. George's	1978	343	Q R C	
02ZA003	Little Codroy River near Doyles	1982	139	Q R C	
02YN002	Lloyds River below King George IV Lake	1980	469	Q R C	RMT
02YG002	Middle Arm Brook below Flatwater Pond	1987	224	Q R C	
02YR001	Middle Brook near Gambo	1959	267	Q R C	
030E003	Minipi River below Minipi Lake	1979	2330	QRC	RMT
02ZK002	Northeast River near Placentia	1979	89.6	Q R C	
02ZN001	Northwest Brook at Northwest Pond	1966	53.3	Q R C	RMT
02YQ004	Northwest Gander River near Gander Lake	1983	2150	Q R C	RMT
02YO006	Peters River near Botwood	1981	177	Q R C	SEDM
03OE009	Peters River below Lindal Lake	1993		QRC	RMT LOGGER
02YJ003	Pinchgut Brook at Outlet of Pinchgut Lake	1986	119	Q R C	
02ZH001	Pipers Hole River at Mothers Brook	1952	764	Q R C	WQ LRTAP
02YR002	Ragged Harbour River near Musgrave Harbour	1977	399	Q R C	
02ZG004	Rattler Brook near Boat Harbour	1981	42.7	Q R C	SEDM
02YL005	Rattler Brook near McIvers	1985	17.0	Q R C	SEDM
02YQ005	Salmon River near Glenwood	1987	80.8	Q R C	
02ZG003	Salmonier River near Lamaline	1980	115	Q R C	
02ZM009	Seal Cove Brook near Cappahayden	1979	53.6	Q R C	
02YK005	Sheffield Brook near TCH	1972	391	Q R C	DCP SEDM
02ZJ003	Shoal Harbour River near Clarenceville	1985	106	Q R C	SEDM
02ZM016	South River near Holywood	1983	17.3	Q R C	
02ZJ001	Southern Bay River near Southern Bay	1976	67.4	Q R C	
02YO012	Southwest Brook at Lewisporte	1989	47.7	Q R C	
02YM003	South West Brook near Baie Verte	1980	93.2	Q R C	
02YQ006	Southwest Gander River below Larson Falls	1987	531	Q R C	RMT
02ZL003	Spout Cove Brook near Spout Cove	1979	10.8	Q R C	
02YN003	Star Brook below Star Lake	1987	427	Q R C	RMT DCP MET
02YA001	Ste. Geneviève River near Forresters Point	1969	306	Q R C	
02ZG002	Tides Brook below Freshwater Pond	1977	166	Q R C	DCP
02YL008	Upper Humber River above Black Brook	1988	471	Q R C	RMT DCP MET
02ZM018	Virginia River at Pleasantville	1984	10.7	Q R	
02ZM008	Waterford River at Kilbride	1974	52.7	Q R C	SEDM

PROVINCIAL 1 PROVINCIAL DEPARTMENTAL PROGRAM

STA. NO.	STATION NAME	ESTAB.	D.A.	RECORDS	REMARKS
02ZL005	Big Brook at Lead Cove	1985	11.2	Q R C	
02YK008	Boot Brook at Trans-Canada Highway	1985	20.4	Q R C	
02YF002	Cat Arm Reservoir near Spillway *	1994		H R S	RMT DCP LOGGER
03OE007	Churchill River at Foot of Lower Muskrat Falls	1980		H R C	REG71 RMT DCP
03OE008	Churchill River at Grizzle Rapids	1988		H R C	REG71 RMT
03OE005	Churchill River between Upper & Lower Muskrat Falls	1978		H R C	REG71 RMT
02YL011	Copper Pond Brook near Corner Brook Lake	1994	12.9	QRC	LOGGER
02YL009	Corner Brook Lake at lake Outlet	1990		H R C	REG DCP MET
02YL007	Deer Lake at Deer Lake	1987		H R C	TMK
02YK007	Glide Brook below Glide Lake	1984	112	Q R C	
02YK010	Grand Lake East of Grand Lake Brook	1988		H R C	DCP RMT MET
02YM004	Indian Brook Diversion above Birchy Lake	1990		Q R C	DCP MET
02ZM020	Leary Brook at Prince Philip Drive	1985	17.8	Q R C	
02ZM017	Leary Brook at St. John's	1983	15.3	Q R C	LOGGER
02YO007	Leech Brook near Grand Falls	1984	88.3	Q R C	
02ZK003	Little Barachois River near Placentia	1983	37.2	Q R C	
02ZG005	Little Barasway Brook near Molliers	1987	28.2	Q R C	
02ZK004	Little Salmonier River near North Harbour	1983	104	Q R C	
02XD002	North Brook near Red Bay	1984	35.5	Q R S	RMT
02ZM022	Raymond Brook at Outlet of Bay Bulls Big Pond	1988		Q R C	REG
02ZJ002	Salmon Cove River near Champneys	1983	73.6	Q R C	
02ZL004	Shearstown Brook at Shearstown	1983	28.9	Q R C	
02YP001	Shoal Arm Brook near Badger Bay	1982	63.8	Q R C	RMT
02YL004	South Brook at Pasadena	1983	58.5	Q R C	SEDM
02ZM021	South Brook at Pearl Town Road	1986	9.21	Q R C	
02ZN002	St. Shotts River near Trepassey	1985	15.5	Q R C	DCP
02ZK005	Trout Brook near Bellevue	1986	50.3	Q R C	
02ZM019	Virginia River at Cartwright Place	1985	5.55	Q R C	
02ZM010	Waterford River at Mount Pearl	1981	16.6	Q R C	
02YL010	West Pond Brook near Corner Brook lake	1994	13.1	Q R C	LOGGER

* In 1994-95 only operated half year therefore designation of HRS

CONTRIBUTED STATIONS

STA. NO.	STATION NAME	ESTAB.	D.A.	AGENCY	REMARKS
03OA001	Ashuanipi River at Menihek Rapids	1952	19000	IOCCL	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-PR	REG
02YK006	Hinds Brook at Hinds Brook Powerhouse	1981	651	N&LHY	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&LHY	REG67
02YO004	Sandy Brook at Sandy Brook Powerhouse	1964	508	NLPCL	REG

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

SED - sediment data currently being collected

SEDM - miscellaneous sediment samples obtained

TMK - telephone interrogated telemark

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

WQ - samples collected for water quality national overview network

LOGGER - data recorded by digital data logger

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.

Stations 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 payment. The details of the calculations for operation and construction are available and have been jointly reviewed by officers of each party.

ANNUAL PAYMENT FOR 1994-95 TO BE PAID THE THE RECEIVER GENERAL FOR CANADA BY THE PROVINCE OF NEWFOUNDLAND.

		Operation	Construction	Total
A)	Streamflow and water level installations	$295,500.		$295,500.
B)	Sediment installations	3,200.		3,200.
C)	Data collection platform installations			
D)	Humber River meteorological stations	8,200.		8,200.
	ANNUAL PAYMENT			$ 306,900.

D.G. Jeans
Assistant Deputy Minister
Department of Environment and Lands

C. F. MacNeil
Director
Atmospheric Environment Branch

APPENDIX III

MINUTES OF COORDINATING COMMITTEE MEETING

CANADA - NEWFOUNDLAND
AGREEMENT ON WATER QUANTITY SURVEYS
ANNUAL CO-ORDINATORS MEETING
ST. JOHN'S, NEWFOUNDLAND
1:30 P.M., MARCH 29, 1995

AGENDA

1. INTRODUCTORY REMARKS
   - -Environment Canada Atmospheric Environment Branch Program Review
   - -Provincial Environment

2. REVIEW OF BALANCE OF PAYMENTS

3. REVIEW OF 1994-95
   - - Highlights

4. REVIEW OF SCHEDULE "A" FOR 1995-96
   - - Hydrometric
   - - Sediment

5. CONSTRUCTION AND MAJOR MAINTENANCE IN 1995-96

6. OPERATIONAL COST ESTIMATES

7. OTHER

CO-ORDINATING COMMITTEE

CANADA-NEWFOUNDLAND COST SHARING AGREEMENT

WATER QUANTITY SURVEYS

29 March 1995

MINUTES

The co-ordinating committee for the Newfoundland Cost Sharing Agreement on Water Quantity Surveys, met on March 29, 1995 at the Provincial Department Of Environment, Water Resources Division, office on the 4th Floor, West Block, Confederation Building, in St. John's, Newfoundland. In attendance were the following:

C. Power	AEB	Environmental Monitoring	Bedford
S. Porter	AEB	Scientific Services	St. John's
D. Ambler	ECB		Dartmouth
C. Baker	AEB	Environmental Monitoring	St. John's
W. Ullah	Provincial Water Resources Division		St. John's
H. Khan	Provincial Water Resources Division		St. John's

The agenda was approved with the following topics added:

A Hydrometric Stations supported by Power Corporations
A Modernization
A Future scenarios beyond 1995-96

1. **Introductory remarks**

- Environment Canada, AEB, Program Review.

C. Power gave an overview of the impact of the recent Federal Government Budget on the program of AEB. In Environment Canada, AEB was one of the hardest hit branches with an approximate 40% budget reduction over the next 3 years. This means that there will be impacts on the Hydrometric Program in the Atlantic Region starting on April 1, 1995. Every effort will be made to work co-operatively with our provincial partners to maximize the network within resources to meet the needs of both levels of government.

During the year 1995-96 there will be a 15% reduction of Federal dollars contributed to the Hydrometric Program in Newfoundland. To meet this reduction and have minimum impact on program delivery it was decided to target O&M, at least for the first round of fiscal restraint.

It was agreed upon, during a pre cost- sharing meeting, by W. Ullah, H. Khan and C. Baker, to reduce the resources put into servicing remote hydrometric stations due to the high cost of helicopter rentals. The major portion of the O&M savings came from the Labrador network with the remainder coming from the Island portion. There was no reduction of stations for 1995-96.

Alternate means of visiting stations by ATV and snowmobile will realize savings along with some trips completely dropped. It is, however, noted that any drop in servicing could result in reduced quality and there is a limit to using these measures in order to meet reduced budgets. Program reductions are inevitable during the next couple of years.

The Provincial Government agreed to take over the full operation of 4 stations in Labrador and these were reclassified from F/P to P. There was, however, no increase in provincial funding to the program for 1995-96. All savings came from reductions in O&M.

- Provincial Government, Environment, Water Resources.

W. Ullah gave a situation review of the budget realities and projected implications of reduced funding in his Department. He stated that for the year 1995-96 the Department was in relatively good shape and was able to meet its goals in funding the Hydrometric Program. Some concerns were expressed about the proposed Water Annex Program and how it could potentially impact on the network, it was hoped that these effects would be minimal.

W. Ullah suggested that the information he received on reductions, negotiated with the other Atlantic Provinces, indicated that a high percentage of target reductions has already been met, therefore, it was reasonable to slow the reduction process in Newfoundland. C. Power pointed out that even though the numbers of station may somewhat indicate this, the salary component of the program was not reduced, hence, necessitating a downsizing of Federal input in all provinces in order to meet the required budget cuts for 1995-96. W. Ullah was pleased with the effort in reducing O&M cost in order to maintain the present network during the coming year.

2. **Review of balance of payments**

The latest balance of payments as per Schedule D was for 1992-93, this showed an accumulated Provincial overpayment of $21,008 over the duration of the Agreement. This amount is projected to be lower when the final figures for 1993-94, and 1994-95 are tallied. It was stated by C. Power that he would like to see this amount reduced to zero within two years. Should there still be a balance in favour of the Province the Federal Government will explore ways to eliminate this deficit. It was suggested by C. Power, in light of relatively small differences in the estimated figures and the actual expenditures in a given year, that the estimated figures be accepted as the basis of annual payments in the cost sharing Agreement. This would lead to much less accounting and paper work that presently appears to be academic. There was a general acceptance of this approach.

3. **Review of 1994-95**

Highlights

C. Baker presented a list of activities that were conducted outside normal operations during the past year:

Northwest River At Terra Nova National Park - Hydrometric Station established at the request of Parks Canada

Cat Arm River At Cat Arm Reservoir: - Water Level Station established, requested by Newfoundland And Labrador Hydro through the Provincial Department of Environment.

Leech Brook - Cableway reconstructed due to vandalism in 1994

Garnish River - Gauge shelter rebuilt after being destroyed by ice during March 1994. The cableway was also destroyed but will not be rebuilt. Future high water measurements will be taken by boat.

Glover Island (Met station) - Sacramento gauge installed to verify data from the Fisher & Porter precipitation gauge.

Reconnaissance Surveys - Reconnaissance surveys were carried out in the Humber Basin for the proposed installation of two meteorological stations under agreement with Deer Lake Power and Provincial Environment. A reconnaissance was carried out for the location of a Tidal Water Level Station at Placentia in response to flooding and the need for real time water level data. The instrumentation is expected to be installed during 1995. A further reconnaissance will be conducted for a meteorological station in response to flooding at the town of Rushoon on the Burin peninsula.

Temperature Probes - A total of 16 water temperature sensors are now installed at WSC hydrometric stations at the request of Federal Fisheries. Data are transmitted via satellite and accessed through Provincial Environment by Fisheries.

Bank Stabilization - Negotiations with the Provincial Department of Transportation resulted in extending their bank stabilization work at Harrys River, downstream of the hydrometric station to remedy a severe erosion problem around the stilling well. In the area of the WSC station on Blanch Brook, Stephenville, bank stabilization was carried out by lining the river bank with gabion mats. This will extend the life of the present site which was starting to be in danger due to erosion.

Cableway Safety - In response to a Cableway Safety Course given by USGS in Guelph, Ont. a safety check was conducted a all WSC cableways. Deficiencies were noted and a program planned to address concerns over the next 2 or 3 years.

COMPUMOD - A COMPUMOD system is in operation at the Corner Brook WSC office. This computer system is designed to process digital data from data loggers which are replacing analogue charts, in the program to modernize the hydrometric network.

The WSC office at Atlantic Place is slated to move to Pleasantville during the next few months. We will be co-locating with the Scientific Services Division of AEB. The proposed location is building 223. - the old UIC building.

4. **Review of schedule "A" for 1995-96**

Hydrometric and Sediment Stations

There were no additions or deletions to schedule A as tabled in 1994. There will be new stations added to the Schedule as construction proceeds during 1995. This will consist of three meteorological stations and one Tidal water level station, classified as provincial.

Four hydrometric stations, in Labrador, previously classified as F/P were reclassified as P in response to offsetting the Federal reduction as dictated by the recent Federal budget.

5. **Construction and major maintenance in 1995-96**

It was estimated that a total of $12K would be required to complete the construction of three meteorological stations. Major maintenance will be kept to a minimum and only engaged in response to safety concerns. One project identified is a cableway replacement at Rocky River due to severe rusting and an upgrade of cable anchors.

6. **Operational Cost Estimates for 1995-96**

The operational cost estimates for 1995-96 were reviewed and accepted

7. **Other**

Hydrometric Stations Supported by Power corporations

It was agreed that Power corporations were not contributing their fair share of the operational cost of stations that primarily exist for supplying data for watershed management by the power company. W. Ullah indicated that his department will contact the respective corporations and advise them of contribution increases necessary to continue station operation.

Modernization

Modernization of the network is proceeding, however, not at an aggressive rate. A minimum of four stations will be upgraded with data loggers during 1995-96. A cost benefit analysis is presently being assessed by Ottawa to determine the pay-back on modernizing hydrometric stations. Their findings and

recommendations will determine how quickly national money will be channelled into the modernization exercise.

Future scenarios beyond 1995-96

It was requested by W. Ullah that future scenarios be discussed with regard to downsizing the hydrometric network in Newfoundland. He suggested that meetings be held this summer to review different options and map out a plan in order to optimize the program along with exploring ways to generate revenue. This approach was accepted as the logical process to pursue in order to deal effectively with the next three years of Federal reductions.

The meeting adjourned at 3:45PM

WATER QUANTITY SURVEYS
PROVINCE OF NEWFOUNDLAND

HYDROMETRIC SURVEYS (ISLAND)
1995-96

BUDGET ITEM	1994-95 EST.	1995-96 EST. SCHEDULE D
- TECHNICAL STAFF SALARY AND OVERTIME	278,500	292,209
- TRAVEL	23,000	23,000
- TRANSPORTATION & POSTAGE	2,000	2,000
- TELECOMMUNICATIONS	700	3,000
- PROFESSIONAL SERVICES (READERS)	500	500
- OTHER SERVICES	4,500	4,000
- RENTALS	56,000	45,500
- REPAIRS TO EQUIPMENT	3,500	4,500
- REPAIRS TO STRUCTURS	3,500	3,500
- UTILITIES	1,500	500
- MATERIALS AND SUPPLIES (INCL. GAS)	29,500	30,000
- PARTS AND CONSUMABLE TOOLS	5,500	5,500
- DATA PROCESSING COST	14,380	14,000
- VEHICLE DEPRECIATION	17,393	15,265
- FIELD EQUIPMENT AND INSTRUMENT DEPRICATION	9,037	9,500
TOTAL	**449,510**	**452,974**

WATER QUANTITY SURVEYS
PROVINCE OF NEWFOUNDLAND

HYDROMETRIC SURVEYS (LABRADOR)
1995-96

BUDGET ITEM	1994-95 EST.	1995-96 EST. SCHEDULE D
- TECHNICAL STAFF SALARY AND OVERTIME	68,500	57,000
- TRAVEL	15,500	7,500
- TRANSPORTATION & POSTAGE	2,000	2,000
- TELECOMMUNICATIONS		-
- PROFESSIONAL SERVICES (READERS)	-	-
- OTHER SERVICES	1,500	1,000
- RENTALS	55,000	31,500
- REPAIRS TO EQUIPMENT	500	500
- REPAIRS TO STRUCTURS	-	-
- UTILITIES	-	-
- MATERIALS AND SUPPLIES	2,000	2,000
- PARTS AND CONSUMABLE TOOLS	1,000	500
- DATA PROCESSING COST	2,840	3,000
- VEHICLE DEPRECIATION	-	-
- FIELD EQUIPMENT AND INSTRUMENT DEPRICATION	2,706	3,000
TOTAL	**151,546**	**108,000**

WATER QUANTITY SURVEYS
PROVINCE OF NEWFOUNDLAND

SEDIMENT SURVEYS
1995-96

BUDGET ITEM	94-95 EST.	94-96 EST. SCHEDULE D
- SALARY AND OVERTIME	-	-
- TRAVEL	250	250
- TRANSPORTATION AND POSTAGE	100	100
- PROFESSIONAL SERVICES(SAMPLERS)	-	-
- OTHER SERVICES	100	100
- REPAIRS TO EQUIPMENT	200	200
- MATERIALS & SUPPLIES (INC. GAS)	300	300
- PARTS AND CONSUMABLES	100	100
- SAMPLE ANALYSIS	4,400	1,200
- FIELD EQUIPMENT DEPRICATION	928	500
TOTAL	**6,418**	**2,750**

FED/PROV. MISCELLANEOUS STATIONS = 14

PROVINCIAL SHARE: .5 X 2,750 = $ 1,375

WATER QUANTITY SURVEYS
PROVINCE OF NEWFOUNDLAND

TOTAL ESTIMATED OPERATIONAL COST
1995-96

PROVINCIAL

-	HYDROMETRIC (ISLAND)	$ 241,315
-	HYDROMETRIC (LABRADOR)	$ 52,725
-	SEDIMENT	$ 1,375
-	HUMBER BASIN MET. STATIONS (3 STATIONS X 0.2 UNIT COST FOR HYDROMETRIC STATION + 0.5 X 2 X 0.2 FOR NEW STATIONS)	$ 4,232
-	CONSTRUCTION PROJECTS 3 MET STATIONS @ ($ 4,000)	$ 12,000
	TOTAL 1995-96	**$ 311,647**
TOTAL 1994-95 (SCHEDULE <D>)		$ 306,847

WATER QUANTITY SURVEYS
PROVINCE OF NEWFOUNDLAND

1995-96 ESTIMATED PROVINCIAL COST

HYDROMETRIC NETWORK
ISLAND

-	7	FEDERAL 1 STATIONS	6	7.0 UNITS
-	11	FEDERAL 4 STATIONS	6	11.0 UNITS
-	44	FED/PROV 3 STATIONS	6	44.0 UNITS
-	26	PROVINCIAL 1 STATIONS	6	23.6 UNITS

TOTAL 88 STATIONS **TOTAL UNITS** 85.6

- AVERAGE COST / STATION = $ 452,974 / 85.6 = **$ 5292**

- $ 5292 X • (44 X 0.5) + 23.6 œ

PROVINCIAL SHARE **$ 241,315**