Environment Canada Environnement Canada

Newfoundland Labrador

CANADA – NEWFOUNDLAND AND LABRADOR

MEMORANDUM OF AGREEMENT
FOR
WATER QUANTITY SURVEYS

REPORT FOR FISCAL YEAR
2013-2014

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LETTER OF TRANSMITTAL

TO: Bill Appleby
Administrator for Canada

Haseen Khan
Administrator for the Department of Environment and Conservation,
Newfoundland and Labrador

We hereby submit an annual report for the fiscal year 2013-2014 covering activities under the Memorandum of Agreement for Water Quantity Surveys for Newfoundland and Labrador.

Government of Canada

René Savoie
Environment and Climate Change Canada

Government of Newfoundland and Labrador

Paula V Dawe
Dept. of Municipal Affairs and Environment, Newfoundland and Labrador

Members
Coordinating Committee

EXECUTIVE SUMMARY

In 1975, Canada and its provincial partners signed Memoranda of Agreement for Water Quantity Surveys. The purpose of the Agreement is to provide a mechanism to harmonize the hydrometric data collection, processing and distribution, as well as a procedure to cost-share the activities of the program. The evolution of the program has generated the need to renew the Agreement. Discussions on a new Bilateral Agreement have taken place in 2013-2014. The new Agreement will ensure the delivery of an efficient and effective hydrometric monitoring service.

During this reporting period, there was an increase of 2 stations to the hydrometric network; the new stations are all classified as provincial stations

In addition to the regular hydrometric activities, several small construction/upgrade projects have taken place during fiscal year 2013-2014.

Currently 114 stations, over 93% of the network, are equipped with satellite telemetry and 3 stations have modem telemetry using standard phone lines which means that 96.5% of the network is reporting in real-time. Only 4 stations have no telemetry.

The actual share of the province ($806.7K) was 3.1% lower than the original estimate ($832.7K). Financial details are given in section 5 of this report.

INTRODUCTION

This report covers the activities under the Canada/Newfoundland and Labrador Memorandum of Agreement for Water Quantity Surveys for the fiscal year 2013-2014.

The operation of an integrated network of hydrometric stations in Newfoundland and Labrador is cost-shared between Water Survey Division, Meteorological Service of Canada, Environment Canada (DOE), and Newfoundland and Labrador, Department of Environment and Conservation under a Memorandum of Agreement (MOA).

The core of this report has been divided in 5 main sections:

The *Hydrologic Conditions* section provides a brief description of the hydrologic conditions that were encountered during 2013-2014.

The *Coordinators Meeting* section highlights the discussions undertaken during the year.

The *Network Characteristics* section includes a brief summary of the changes from the previous year. Also available is a breakdown of the responsibility classification for each category as well as a description of the other operational activities such as sediment, real-time, etc.

The *Operations* section includes a brief description of the operational activities for the year. This section lists the details of partner shares and invoices issued, as agreed to in Schedule D Estimates (Appendix B).

The report also includes a section on *Construction and Projects* which contains a brief description of the special projects.

In addition, the following Appendices have been included:

Appendix A SCHEDULE C STATION LISTING 2013-2014
Appendix B SIGNED SCHEDULE D 2013-2014

1.0 HYDROLOGIC CONDITIONS

Streamflow and Water Level Conditions

Below are preliminary flow tables for five major rivers in Newfoundland and Labrador. The final information can be found online for all 114 monitored sites in Newfoundland and Labrador at: www.wateroffice.ec.gc.ca

Rocky River 02ZK001 (Eastern NL)

Year	MEAN FLOW	FOR THE		HISTORICAL EXTREMES **			
2013/2014	(M/3S)	MONTH					
		MAXIMUM	MINIMUM	MONTHLY		DAILY	
		(DAY)	(DAY)	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM
				(YEAR)	(YEAR)	(YEAR)	(YEAR)
April	6.77	24.6	2.35	35.8	7.89	133	1.8
2013	DR	(6)	(30)	(1964)	(1979)	(2004)	(1959)
May	1.94	3.69	1.29	25.7	3.51	91.6	1.5
2013	DR	(17)	(10) R	(1985)	(1962)	(1985)	(1962)
June	5.61	26.1	1.46	18.5	2.04	87.1	0.65
2013		(9)	(8)	(1990)	(1957)	(1988)	(1951)
July	4.03	16.9	1.27	13.8	0.81	93.9	0.42
2013		(1)	(17)	(1981)	(1949)	(1988)	(1949)
August	11.4	36.9	3.41	30.6	0.548	199	0.2
2013	E	(6)	(3)	(1970)	(1949)	(2007)	(1950)
September	18.3	41.4	6.39	19.6	0.628	216	0.24
2013	E	(16)	(23)	(2004)	(1961)	(2004)	(1961)
October	14.1	51.8	3.46	27.2	3.68	124	0.69
2013		(18)	(17)	(1970)	(1949)	(1953)	(1961)
November	13.8	34.7	6.86	25.8	3.95	125	1.9
2013		(2)	(20)	(1956)	(1948)	(1956)	(1948)
December	12.5	41	4.83	31.1	7.53	174	2.6
2013		(4)	(14)	(1953)	(1986)	(1953)	(1961)
January	35.5	88.8	13.3	28.7	4.77	146	1.8
2014	ER	(17)	(6)	(1952)	(1988)	(1951)	(2010)
February	9.52	39.3	4.07	36.9	2.26	294	1.2
2014		(15)	(13)	(1962)	(1975)	(1962)	(1961)
March	9.22	51.4	1.37	39.8	3.2	200	0.93
2014	D	(14)	(11)	(1994)	(1963)	(1994)	(1963)

Deficiency for the period or daily number. 25% are less than the lower quartile (below normal)
Excessive for the period or daily number. 25% are greater than the upper quartile (above normal)
Record for the period or daily number (Preliminary)

Gander River 02YQ001 (Central NL)

Year 2013/2014	MEAN FLOW (M/3S)	FOR THE MONTH		HISTORICAL EXTREMES **			
		MAXIMUM (DAY)	MINIMUM (DAY)	MONTHLY MAXIMUM (YEAR)	MONTHLY MINIMUM (YEAR)	DAILY MAXIMUM (YEAR)	DAILY MINIMUM (YEAR)
April	206	287	164	513	44.4	925	22.8
2013	D	(23)	(12)	(1987)	(1967)	(1993)	(1950)
May	136	217	91.2	451	90.3	761	50.4
2013	D	(1)	(17)	(1967)	(1958)	(2001)	(2006)
June	76	115	50.3	198	37.7	336	18.1
2013		(1)	(27)	(2009)	(1979)	(2010)	(1979)
July	79.5	138	48.8	148	13.9	206	9
2013	E	(3)	(25)	(2010)	(1975)	(2006)	(1975)
August	67.2	163	37.1	179	6.92	378	4.8
2013		(31)	(29)	(1980)	(1987)	(1980)	(1987)
September	286	550	141	196	4.16	527	2.8
2013	ER	(3) R	(25)	(1984)	(1961)	(2004)	(1961)
October	129	267	77.4	269	9.88	597	3.3
2013		(1)	(20)	(1981)	(1950)	(2003)	(1961)
November	149	346	110	242	37.2	398	14.8
2013		(30)	(11)	(1962)	(1961)	(2003)	(1961)
December	190	363	65.5	272	36.9	549	28.4
2013	E	(6)	(31)	(2004)	(1985)	(1977)	(1985)
January	165	364	51.7	352	36.3	1170	25.3
2014	E	(19)	(9)	(1983)	(1985)	(1983)	(1985)
February	116	175	69.1	288	18.6	688	14.8
2014		(1)	(28)	(1969)	(1961)	(1984)	(1961)
March	85.9	135	47.7	275	17.2	560	9.8
2014		(20)	(12)	(1988)	(1950)	(1992)	(1961)

Deficiency for the period or daily number. 25% are less than the lower quartile (below normal)

Excessive for the period or daily number. 25% are greater than the upper quartile (above normal)

Record for the period or daily number (Preliminary)

Upper Humber River 02YL001 (Western NL)

Year	MEAN FLOW	FOR THE		HISTORICAL EXTREMES **			
2013/2014	(M/3S)	MONTH					
		MAXIMUM	MINIMUM	MONTHLY		DAILY	
		(DAY)	(DAY)	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM
				(YEAR)	(YEAR)	(YEAR)	(YEAR)
April	156	780	30.2	288	19.2	749	9.2
2013	E	(28) R	(9)	(1934)	(1967)	(1987)	(1955)
May	300	734	89.5	383	127	879	35.8
2013	E	(16)	(23)	(1993)	(1983)	(1993)	(1983)
June	46.1	102	16.8	354	25.8	1010	8.5
2013	D	(1)	(25)	(1933)	(1979)	(1984)	(1951)
July	29	98.2	7.09	152	30.1	976	13.4
2013	D	(30)	(23)	(1931)	(2010)	(2003)	(2006)
August	42.5	82.2	19.2	103	3.91	447	1.6
2013		(1)	(30)	(1973)	(1940)	(1973)	(1940)
September	98.9	384	29.2	162	15.2	504	1.6
2013	E	(16)	(1)	(1944)	(1946)	(1955)	(1940)
October	62.6	141	26.8	167	24.7	530	8
2013		(29)	(17)	(1977)	(1948)	(1957)	(1954)
November	176	607	47.7	177	42.6	813	8.8
2013	E	(30)	(18)	(1962)	(1986)	(1935)	(1948)
December	61	347	27	156	11.4	736	6.8
2013		(1)	(31)	(1954)	(1986)	(1935)	(1986)
January	89.1	329	25.2	129	10.2	663	4
2014	E	(17)	(7)	(1950)	(1971)	(1983)	(1990)
February	28	45.4	15.6	106	5.91	348	3.7
2014		(1)	(28)	(1969)	(1975)	(1969)	(1993)
March	14.8	20.5	11.6	141	7.8	530	4
2014	D	(16)	(12)	(1979)	(1959)	(1936)	(1992)

Deficiency for the period or daily number. 25% are less than the lower quartile (below normal)

Excessive for the period or daily number. 25% are greater than the upper quartile (above normal)

Record for the period or daily number (Preliminary)

02ZB001 Isle Aux Morts River (South Western NL)

Year	MEAN FLOW	FOR THE		HISTORICAL EXTREMES **			
2013/2014	(M/3S)	MONTH					
		MAXIMUM	MINIMUM	MONTHLY		DAILY	
		(DAY)	(DAY)	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM
				(YEAR)	(YEAR)	(YEAR)	(YEAR)
April	27.3	137	3.02	46.3	3.62	325	0.696
2013		(26)	(5)	(1994)	(1967)	(2003)	(2004)
May	32	170	4.91	51.1	6.16	226	2.18
2013		(15)	(23)	(1994)	(1986)	(1972)	(2010)
June	6.81	34	1.11	34.7	2.58	259	0.79
2013		(30)	(24)	(1972)	(1976)	(1985)	(1976)
July	8.96	33.1	0.854	22.7	1.17	102	0.35
2013		(25)	(17)	(1981)	(1989)	(1993)	(1989)
August	7.8	39.7	0.687	17.9	1.39	124	0.34
2013		(10)	(29)	(2007)	(1978)	(1990)	(1978)
September	14.9	94.9	2.35	23.7	3.53	176	0.71
2013	E	(4)	(22)	(1998)	(1973)	(2005)	(1969)
October	8.06	30.4	2	31	5.65	178	1.13
2013	D	(28)	(16)	(1972)	(1963)	(1977)	(2001)
November	36.1	282	4.09	38.3	7.7	348	1.6
2013	E	(28)	(7)	(1967)	(2000)	(2006)	(1970)
December	9.84	60.1	2.32	43	3.13	434	0.83
2013		(4)	(31)	(1990)	(1994)	(1990)	(2007)
January	17.6	115	2.13	24	1.22	219	0.57
2014	E	(15)	(6)	(1986)	(1991)	(1986)	(1991)
February	5.68	19.9	1.81	31.1	0.923	243	0.41
2014		(17)	(13)	(1996)	(1975)	(1996)	(1991)
March	14.5	57	1.33	38.9	0.737	410	0.34
2014	E	(14)	(12)	(1979)	(2004)	(1996)	(1987)

Deficiency for the period or daily number. 25% are less than the lower quartile (below normal)

Excessive for the period or daily number. 25% are greater than the upper quartile (above normal)

Record for the period or daily number (Preliminary)

03QC001 Eagle River (Labrador)

Year	MEAN FLOW	FOR THE		HISTORICAL EXTREMES **			
2013/2014	(M/3S)	MONTH					
		MAXIMUM	MINIMUM	MONTHLY		DAILY	
		(DAY)	(DAY)	MAXIMUM	MINIMUM	MAXIMUM	MINIMUM
				(YEAR)	(YEAR)	(YEAR)	(YEAR)
April	67.4	260	41.5	311	8.33	2460	7.2
2013		(30)	(3)	(2010)	(1993)	(1983)	(1993)
May	1070	1540	342	1400	106	2690	11.8
2013	E	(17)	(1)	(1971)	(1967)	(1971)	(1975)
June	616	1030	296	1810	265	2990	127
2013		(1)	(30)	(1985)	(2005)	(1985)	(2005)
July	183	292	94.3	638	119	1330	71.4
2013	D	(1)	(31)	(1985)	(1976)	(1980)	(1976)
August	176	302	82.6	495	102	1320	64
2013		(21)	(9)	(1989)	(1988)	(1967)	(2008)
September	345	733	146	521	84.1	827	59
2013	E	(28)	(8)	(1976)	(1984)	(1976)	(1984)
October	329	588	181	515	100	705	78.4
2013	E	(5)	(31)	(1978)	(1973)	(1966)	(1973)
November	142	177	115	488	65.3	695	51
2013		(1)	(30)	(1995)	(2002)	(1980)	(1974)
December	94.4	114	77.3	218	36.3	410	27.5
2013		(1)	(31)	(1995)	(1974)	(2005)	(1974)
January	63.4	76.3	51.9	98.9	22.4	108	19
2014		(1)	(31)	(1969)	(1975)	(1969)	(1993)
February	43.3	51.2	36.2	86.2	14.9	90.6	11.8
2014		(1)	(28)	(1969)	(1993)	(1969)	(1993)
March	29.7	35.7	24.4	78.7	9.64	119	8.2
2014		(1)	(31)	(1969)	(1993)	(1979)	(1993)

Deficiency for the period or daily number. 25% are less than the lower quartile (below normal)
Excessive for the period or daily number. 25% are greater than the upper quartile (above normal)
Record for the period or daily number (Preliminary)

2.0 COORDINATORS MEETINGS

The coordinators met in person three times and frequent e-mail correspondence and conference calls took place in 2013-14. Discussions range from operating cost, capital plan, and bilateral agreement.

3.0 NETWORK CHARACTERISTICS

Water Survey of Canada operates 114 hydrometric stations in Newfoundland and Labrador. The station classifications are listed in the next Table. Two provincial stations were added to the network in 2013-2014.

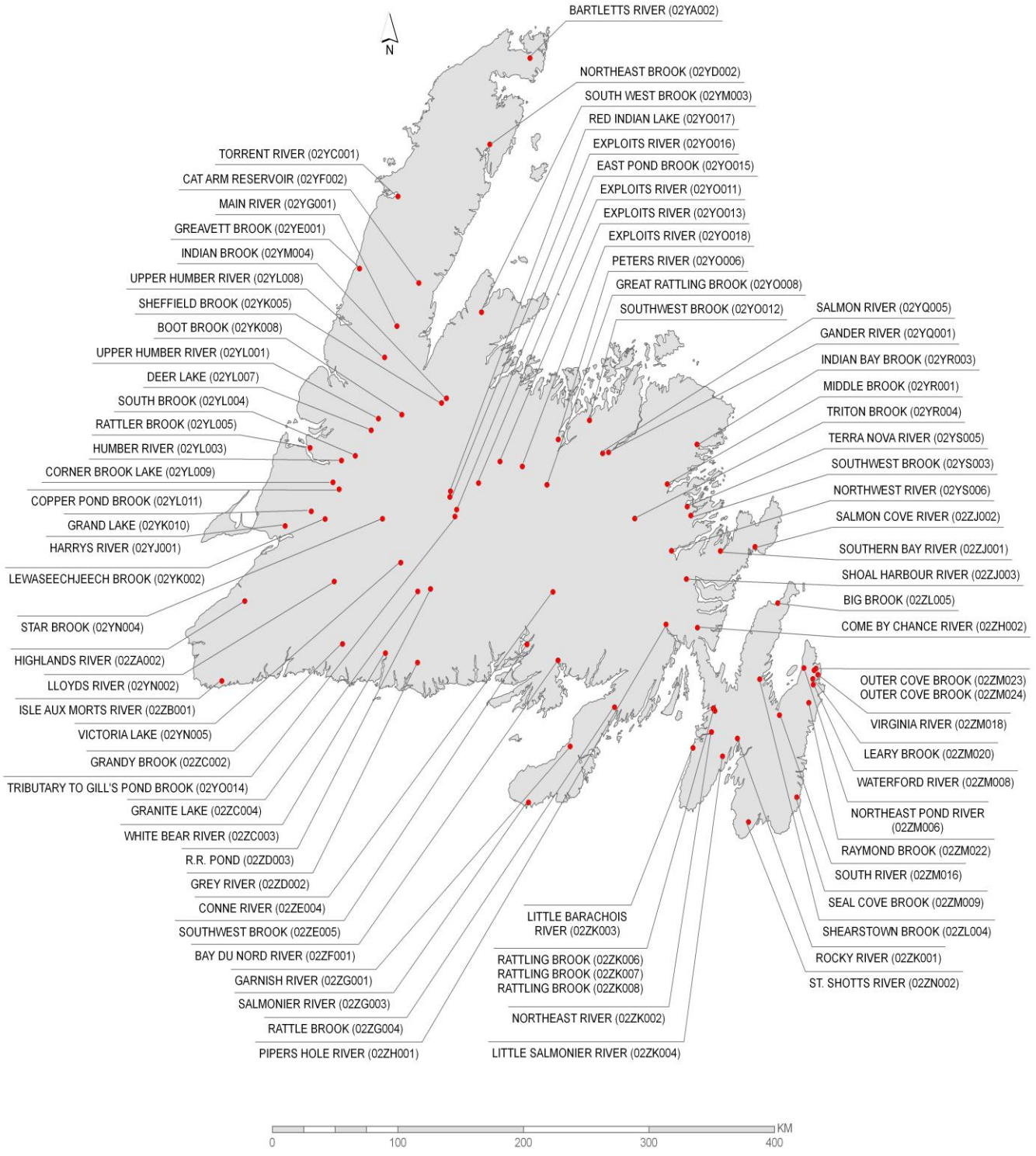
New Stations Established in 2013-2014

- **Gilbert River at Outlet of Gilbert Lake (03QC004)**
- **Houston Creek below Road Culvert (03OB008)**

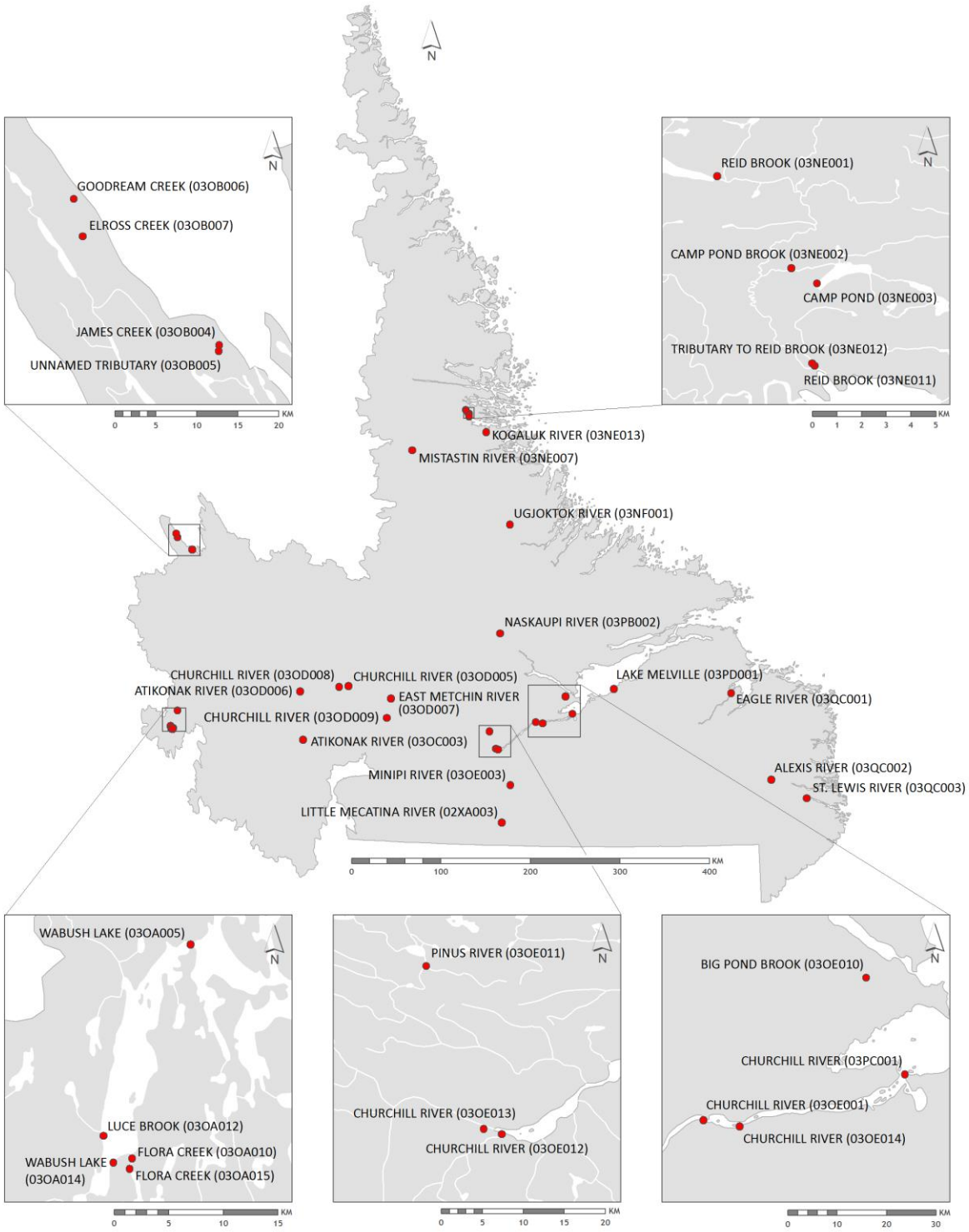
Water Survey of Canada also operates 5 precipitations stations and takes water samples at 7 different sites for water quality purpose on behalf of the Newfoundland and Labrador Department of Environment and Conversation. These sites are converted in station units in order to have their cost calculated under this agreement.

Under the Canada–Newfoundland and Labrador Memorandum of Agreement, 114 stations were operated in 2013-2014. The complete station list is available in Appendix A. The stations classifications are as follow:

CLASSIFICATION	ISLAND	LABRADOR	TOTAL
FEDERAL	11	5	**16**
FED-PROV	32	0	**32**
PROVINCIAL	36	30	**66**
TOTAL	**79**	**35**	**114**



Hydrometric network on the Island (may not be totally accurate, a few stations may have been removed or added since the map was made)



Hydrometric network in Labrador (may not be totally accurate, a few stations may have been removed or added since the map was made)

4.0 OPERATIONS

A true costing approach has been utilized to derive the station costs for this fiscal year in accordance with the agreement. The costs were apportioned based on the station classification and then totaled to determine each parties share. Employee benefit costs on salary and data management costs have been included and attributed to all parties as agreed on by the National Administrator's meeting in Quebec City, October 1999.

The Newfoundland and Labrador Department of Environment and Conservation was credited with the total amount of $48,392 for the contribution to the Partnership. The details of those contributions are listed in the next table.

The following table summarizes the estimated and the actual costs to operate the provincial share of the stream gauging network of 114 stations in Newfoundland and Labrador for 2013-2014. The cost of operating the precipitation stations and the grab samples stations is also capture in this table.

STREAMFLOW AND WATER LEVEL COSTS FOR NEWFOUNDLAND AND LABRADOR

	2013/14	2013/14
OPERATIONAL	**Planned**	**Actuals**
Salaries (Including benefits 20%)	$486,432	$414,342
Hydrometric Operations O&M	$372,253	$403,589
Real Property Credit	-$7,750	-$7,750
Real Time Web Cam	-$7,350	-$7,350
Weather Station	-$4,305	-$4,305
Basin Delineation	-$4,030	-$4,030
Igor Study Modeling	$-24,957	$-24957
Capital	$21,465	$37,118
Equipment purchased by the province *	$16,821	
TOTALS	**$849,510**	**$806,657**

* The equipment purchased by the province was not part of the signed schedule D but it accounted as a provincial contribution to the program.

The signed version of the Schedule D can be found in the Appendix B

SUMMARY OF TOTAL EXPENDITURES 2013-2014

CATEGORY	FEDERAL	NEWFOUNDLAND AND LABRADOR	TOTAL
Hydrometric operations (O&M)	$172,966	$355,197	$528,163
Capital (Hydroacoustic Equipment)	$15,907	$37,118	$53,025
Salaries + 20%	$177,575	$414,342	$591,917
TOTAL	**$366,448**	**$806,657**	**$1,173,105**

O&M EXPENDITURE DETAILS

ITEM	ACTUAL EXPENDITURES (FISCAL YEAR 13/14)
OG07 - Travel	$ 47,918
OG08 - Removal	$ 4,507
OG09 - Transportation & Postage	$ 8,019
OG11 - Telecommunications Services - Message/Data	$ 635
OG15 - Publishing, Printing, Exhibition Services	$ 42
OG19 - Employee Services provided without charge (including Training)	$ 2,424
OG22 - Other Services	$ 13,594
OG25 - Rentals	$ 201,118
OG28 - Repair Machinery/Equipment	$ 18,781
OG32 - Public Utility Services	$ 1,371
OG33 - Purchased Materials	$ 40,161
OG34 - Personal, Household & Miscellaneous	$ 18,575
OG35 - Parts, Consumable Tools & Small Equipment	$ 40,310
OG38 - Land & Structures	$ 6,129
OG47 - Other Expenditures	$ 4
TOTAL	**$ 403,589**

5.0 CONSTRUCTION & SPECIAL PROJECTS

All construction projects and hydrometric station equipment purchases (data loggers, transducers, GOES transmitter upgrades) for life cycle management (LCM) are authorized in advance by the Newfoundland and Labrador Department of Environment and Conservation on a case by case basis.

There was several small construction/upgrade projects have taken place during fiscal year 2013-2014 but nothing significant enough to report.

Appendix A SCHEDULE C 2013-2014 – STATION LIST

Station #	Station Name	Location	Class	Date
02ZF001	BAY DU NORD RIVER AT BIG FALLS	NFLD	Federal 4	1950
02YQ001	GANDER RIVER AT BIG CHUTE	NFLD	Federal 4	1949
02YJ001	HARRYS RIVER BELOW HIGHWAY BRIDGE	NFLD	Federal 4	1968
02YL003	HUMBER RIVER AT HUMBER VILLAGE BRIDGE	NFLD	Federal 4	1982
02ZB001	ISLE AUX MORTS RIVER BELOW HIGHWAY BRIDGE	NFLD	Federal 1	1962
02YG001	MAIN RIVER AT PARADISE POOL	NFLD	Federal 4	1986
02YD002	NORTHEAST BROOK NEAR RODDICKTON	NFLD	Federal 4	1959
02ZK001	ROCKY RIVER NEAR COLINET	NFLD	Federal 1	1948
02YS003	SOUTHWEST BROOK AT TERRA NOVA NATIONAL PARK	NFLD	Federal 1	1967
02YC001	TORRENT RIVER AT BRISTOL'S POOL	NFLD	Federal 4	1980
02YL001	UPPER HUMBER RIVER NEAR REIDVILLE	NFLD	Federal 1	1928
03QC002	ALEXIS RIVER NEAR PORT HOPE SIMPSON	LAB	Federal 4	1978
03OE001	CHURCHILL RIVER ABOVE UPPER MUSKRAT FALLS	LAB	Federal 4	1948
03QC001	EAGLE RIVER ABOVE FALLS	LAB	Federal 4	1966
02XA003	LITTLE MECATINA RIVER ABOVE LAC FOURMONT	LAB	Federal 2	1979
03NF001	UGJOKTOK RIVER BELOW HARP LAKE	LAB	Federal 4	1979
02YA002	BARTLETTS RIVER NEAR ST. ANTHONY	NFLD	Fed-Prov 3	1986
02ZH002	COME-BY-CHANCE RIVER NEAR GOOBIES	NFLD	Fed-Prov 3	1961
02ZE004	CONNE RIVER AT OUTLET OF CONNE POND	NFLD	Fed-Prov 3	1988
02YO011	EXPLOITS RIVER BELOW NOEL PAULS BROOK	NFLD	Fed-Prov 3	1985
02ZG001	GARNISH RIVER NEAR GARNISH	NFLD	Fed-Prov 3	1958
02ZC002	GRANDY BROOK BELOW TOP POND BROOK	NFLD	Fed-Prov 3	1982
02YO008	GREAT RATTLING BROOK ABOVE TOTE RIVER CONFLUENCE	NFLD	Fed-Prov 3	1984
02YE001	GREAVETT BROOK ABOVE PORTLAND CREEK POND	NFLD	Fed-Prov 3	1983
02ZA002	HIGHLANDS RIVER AT TRANS CANADA HIGHWAY	NFLD	Fed-Prov 3	1982
02YR003	INDIAN BAY BROOK NEAR NORTHEAST ARM	NFLD	Fed-Prov 3	1981
02YK002	LEWASSEECHJEECH BROOK AT LITTLE GRAND LAKE	NFLD	Fed-Prov 3	1952
02YN002	LLOYDS RIVER BELOW KING GEORGE IV LAKE	NFLD	Fed-Prov 3	1980
02YR001	MIDDLE BROOK NEAR GAMBO	NFLD	Fed-Prov 3	1959
02ZK002	NORTHEAST RIVER NEAR PLACENTIA	NFLD	Fed-Prov 3	1979
02YS006	NORTHWEST RIVER AT TERRA NOVA NATIONAL PARK	NFLD	Fed-Prov 3	1994
02YO006	PETERS RIVER NEAR BOTWOOD	NFLD	Fed-Prov 3	1981
02ZH001	PIPERS HOLE RIVER AT MOTHERS BROOK	NFLD	Fed-Prov 3	1952
02ZG004	RATTLE BROOK NEAR BOAT HARBOUR	NFLD	Fed-Prov 3	1981
02YL005	RATTLER BROOK NEAR MCIVERS	NFLD	Fed-Prov 3	1985
02YQ005	SALMON RIVER NEAR GLENWOOD	NFLD	Fed-Prov 3	1987

02ZG003	SALMONIER RIVER NEAR LAMALINE	NFLD	Fed-Prov 3	1980
02ZM009	SEAL COVE BROOK NEAR CAPPAHAYDEN	NFLD	Fed-Prov 3	1979
02YK005	SHEFFIELD BROOK NEAR TRANS CANADA HIGHWAY	NFLD	Fed-Prov 3	1972
02ZJ003	SHOAL HARBOUR RIVER NEAR CLARENVILLE	NFLD	Fed-Prov 3	1985
02ZM016	SOUTH RIVER NEAR HOLYWOOD	NFLD	Fed-Prov 3	1983
02ZJ001	SOUTHERN BAY RIVER NEAR SOUTHERN BAY	NFLD	Fed-Prov 3	1976
02YO012	SOUTHWEST BROOK AT LEWISPORTE	NFLD	Fed-Prov 3	1989
02YM003	SOUTH WEST BROOK NEAR BAIE VERTE	NFLD	Fed-Prov 3	1980
02YS005	TERRA NOVA RIVER AT GLOVERTOWN	NFLD	Fed-Prov 3	1985
02YL008	UPPER HUMBER RIVER ABOVE BLACK BROOK	NFLD	Fed-Prov 3	1988
02ZM018	VIRGINIA RIVER AT PLEASANTVILLE	NFLD	Fed-Prov 3	1984
02ZM008	WATERFORD RIVER AT KILBRIDE	NFLD	Fed-Prov 3	1974
02ZL005	BIG BROOK AT LEAD COVE	NFLD	Prov 1	1985
02YK008	BOOT BROOK AT TRANS-CANADA HIGHWAY	NFLD	Prov 1	1985
02YL011	COPPER POND BROOK NEAR CORNER BROOK LAKE	NFLD	Prov 1	1994
02YL009	CORNER BROOK LAKE AT LAKE OUTLET	NFLD	Prov 1	1990
02YL007	DEER LAKE AT DEER LAKE	NFLD	Prov 1	1987
02YO015	EAST POND BROOK BELOW EAST POND [Duck Pond]	NFLD	Prov 1	2006
02YO014	TRIBUTARY TO GILL'S BROOK [Duck Pond]	NFLD	Prov 1	2006
02YK010	GRAND LAKE EAST OF GRAND LAKE BROOK	NFLD	Prov 1	1988
02YO013	EXPLOIT RIVER NEAR BADGER	NFLD	Prov 1	2003
02YO016	EXPLOITS RIVER NEAR MILLERTOWN	NFLD	Prov 1	2006
02YO018	EXPLOITS RIVER at Charlie Edwards Point (above Goodyears Dam)	NFLD	Prov1	2009
02YO017	Red Indian Lake at Indian Point	NFLD	Prov1	2009
02ZC004	GRANITE LAKE AT EAST END	NFLD	Prov2	2001
02ZD002	GREY RIVER NEAR GREY RIVER	NFLD	Prov2	1969
02YM004	INDIAN BROOK DIVERSION ABOVE BIRCHY LAKE	NFLD	Prov 1	1990
02ZM020	LEARY BROOK AT PRINCE PHILIP DRIVE	NFLD	Prov 1	1985
02ZK003	LITTLE BARACHOIS RIVER NEAR PLACENTIA	NFLD	Prov 1	1983
02ZK004	LITTLE SALMONIER RIVER NEAR NORTH HARBOUR	NFLD	Prov 1	1983
02ZK007	RATTLING BROOK BIG POND	NFLD	Prov2	2006
02ZK006	RATTLING BROOK BELOW BRIDGE	NFLD	Prov2	2006
02ZK008	Rattling Brook below Plant Discharge	NFLD	Prov1	2009
02ZM006	NORTHEAST POND RIVER AT NORTHEAST POND	NFLD	Prov 1	1953
02ZM022	RAYMOND BROOK AT OUTLET OF BAY BULLS BIG POND	NFLD	Prov 1	1988
02ZJ002	SALMON COVE RIVER NEAR CHAMPNEYS	NFLD	Prov 1	1983
02ZL004	SHEARSTOWN BROOK AT SHEARSTOWN	NFLD	Prov 1	1983
02YL004	SOUTH BROOK AT PASADENA	NFLD	Prov 1	1983
02ZE005	SOUTHWEST BROOK BELOW SOUTHWEST POND	NFLD	Prov 1	2006
02ZN002	ST. SHOTTS RIVER NEAR TREPASSEY	NFLD	Prov 1	1985
02YN004	STAR BROOK ABOVE STAR LAKE	NFLD	Prov	2000

02YR004	TRITON BROOK ABOVE GAMBO POND	NFLD	Prov 1	2002
02YN005	VICTORIA LAKE AT NORTHEAST CONTROL STRUCTURE	NFLD	Prov2	2003
02ZD003	R.R. POND NEAR GRANITE LAKE	NFLD	Prov2	2003
02YF002	CAT ARM RESERVOIR NEAR SPILLWAY	NFLD	Prov2	1994
02ZC003	WHITE BEAR RIVER ABOVE BIG INDIAN BROOK	NFLD	Prov2	1996
02ZM023	Outer Cove Brook at Clovelly Golf Course	NFLD	Prov	2012
02ZM024	Outer Cove Brook Below Airport	NFLD	Prov	2012
03OC003	ATIKONAK RIVER ABOVE PANCHIA LAKE	LAB	Prov2	1972
03OE010	BIG POND BROOK BELOW BIG POND	LAB	Prov 1	1993
03NE003	CAMP POND AT SOUTHWEST END	LAB	Prov	2002
03NE002	CAMP POND BROOK BELOW CAMP POND	LAB	Prov	2002
03OD007	EAST METCHIN RIVER BELOW HIGHWAY BRIDGE	LAB	Prov	1998
03OA005	Wabush Lake at Lake Outlet	LAB	Prov	2006
03OA010	Flora Creek below Flora Lake	LAB	Prov	2006
03OA012	Luce Brook below Tinto Pond	LAB	Prov	2006
03OA014	Wabush Lake at Dolamite Rd	LAB	Prov	2006
03OE003	MINIPI RIVER BELOW MINIPI LAKE	LAB	Prov	1979
03PB002	NASKAUPI RIVER BELOW NASKAUPI LAKE	LAB	Prov	1978
03OE011	PINUS RIVER	LAB	Prov	1998
03NE011	REID BROOK (below Tributary) ABOVE RAPIDS	LAB	Prov	2003
03NE001	REID BROOK AT OUTLET OF REID POND	LAB	Prov	2002
03NE012	TRIBUTARY (to Reid Brok) ABOVE RAPIDS	LAB	Prov	2003
03OD008	CHURCHILL RIVER ABOVE CHURCHILL FALLS TAILRACE	LAB	Prov	2008
03OD009	CHURCHILL RIVER BELOW METCHIN RIVER	LAB	Prov	2008
03OE013	CHURCHILL RIVER ABOVE GRIZZLE RAPIDS	LAB	Prov	2008
03OE012	CHURCHILL RIVER BELOW GRIZZLE RAPIDS	LAB	Prov	2008
03OE014	CHURCHILL RIVER 6.15KMS BELOW MUSKRAT FALLS	LAB	Prov	2008
03PD001	Lake Melville East of Little River	LAB	Prov1	2010
03PC001	Churchill River at English Point (near Mud Lake)	LAB	Prov1	2010
03OB004	James Creek above Bridge (Shefferville)	LAB	Prov2	2010
03OB005	Unnamed Tributary below Settling Pond (Shefferville)	LAB	Prov2	2010
03OB006	Goodream Creek 2km Northwest of Timmins 6	LAB	Prov2	2011
03OB007	Elross Creek below Pinette Lake Inflow	LAB	Prov2	2011
03NE007	Mistastin River Below Mistastin Lake	LAB	Prov2	2012
03NE013	Kogaluk River below Cabot Lake	LAB	Prov2	2012
03OA015	Flora Creek Below Trans Labrador Highway	LAB	Prov2	2012
03QC003	St Lewis River above St Lewis Inlet	LAB	Prov2	2012
03QC004	Gilbert River at Outlet of Gilbert Lake	LAB	Prov2	2013
03OB008	Houston Creek below Road Culvert	LAB	Prov2	2013

PRECIP STATIONS				
	ADIES LAKE	NFLD	Prov	
	BURGEO ROAD	NFLD	Prov	
	GLOVER ISLAND	NFLD	Prov	
	HINDS LAKE	NFLD	Prov	
	HOWLEY ROAD	NFLD	Prov	
ASHKUI WATER QUALITY SAMPLING SITES, GRAB SAMPLES 3 TIMES PER YEAR BY WSC				
	CARTER BASIN	LAB	Prov	
	CAPE CARIBOU RIVER	LAB	Prov	
	Dominion Lake	LAB	Prov	
	Kenamu River	LAB	Prov	
	Seal Lake Narrows	LAB	Prov	
	Susan River	LAB	Prov	
	Wuchusk lake	LAB	Prov	

Appendix B SIGNED SCHEDULE D 2013-2014

NEWFOUNDLAND AND LABRADOR 2013-2014

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 the officers of each party.

ANNUAL PAYMENT FOR 2013-2014 TO BE PAID TO THE RECEIVER GENERAL FOR CANADA BY THE PROVINCE OF NEWFOUNDLAND and LABRADOR

	O&M	Salary	Capital	TOTAL
a) Streamflow and water level installations: Island	$130,988	$285,202	$19,565	$435,755
b) Streamflow and water level installations: Labrador	$231,282	$201,230	$2,392	$434,905
c) Humber Met Stations	$9,983	$0	$0	$9,983
d) Construction & Major Maintenance	$0	$0	$0	$0
g) Station Decommissionning	$0	$0	$0	$0
h) Hydrometric Workstation	$0	$0	$0	$0
e) Real Property Credit for Federal stations o	-$7,750	$0	$0	-$7,750
f) Real Time Web Cam	-$7,350	$0	$0	-$7,350
g) Weather Stations	-$4,305	$0	$0	-$4,305
h) Basin Delineation & Information	-$4,030	$0	$0	-$4,030
H) Igor Modelling Study	-$24,519	$0	$0	-$24,519
I) Special Projects*	$0	$0	$0	$0
TOTAL	$324,299	$486,432	$21,957	$832,689

OCT 01 2013
Date

M. G. Goebel
Assistant Deputy Minister
Environment Branch
Department of Environment and Conservation
Administrator for Province of Newfoundland & Labrador

Sep 27/13
Date

J. Parker
A/Director,
Meteorological Service of Canada
Operations - Atlantic
Atlantic Region
Administrator for Canada

* Special Projects that contribute to the ongoing integrity of the program will be credited upon agreement by both parties.