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**CANADA – NEWFOUNDLAND AND LABRADOR**

**MEMORANDUM OF AGREEMENT  
FOR  
WATER QUANTITY SURVEYS**

**REPORT FOR FISCAL YEAR  
2018-2019**

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## LETTER OF TRANSMITTAL

TO: Jean-François Cantin  
Administrator for Canada

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

We hereby submit an annual report for the fiscal year 2018-2019 covering activities under the Memorandum of Agreement for Water Quantity Surveys for Newfoundland and Labrador.

### Members Coordinating Committee

Government of Canada

Government of Newfoundland and  
Labrador

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René Savoie  
Environment and Climate Change  
Canada

*Paula V Dawe*

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Paula V Dawe  
Dept. of Environment and Conservation,  
Newfoundland and Labrador

## 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. There a draft of a new bilateral agreement that has been develop but no discussions regarding its implementation have taken place in 2018-2019. The new Agreement will ensure the delivery of an efficient and effective hydrometric monitoring service.

*During this reporting period, 5 precipitation station were closed, 1 provincial station closed, 4 provincial stations were added and 1 contributed site operated by the province was added. More details on these stations are given in section 4 of this report.*

In addition to the regular hydrometric activities, several construction/upgrade projects have taken place during fiscal year 2018-2019.

Currently 113 stations, over 99% of the network, are equipped with satellite telemetry and 1 station has modem telemetry using standard phone lines which means that 98% of the network is reporting in real-time. Only 1 station has no telemetry.

The actual share of the province (\$988.3K) was 1.1% lower than the original estimate plus the provincial contribution in equipment (\$999.7K). Financial details are given in section 5 of this report.

## 1. INTRODUCTION

This report covers the activities under the Canada/Newfoundland and Labrador Memorandum of Agreement for Water Quantity Surveys for the fiscal year 2018-2019.

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 Municipal Affairs and Environment 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 2018-2019.

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 2018-2019

Appendix B SIGNED SCHEDULE D 2018-2019

## 2.0 HYDROLOGIC CONDITIONS

### Streamflow and Water Level Conditions

Below are flow tables based on Apr-Dec 2018 approved data and Jan-Mar 2019 preliminary data for five major rivers in Newfoundland and Labrador. Historical Extremes updated to 2018 data. The final information can be found online for all monitored sites in Newfoundland and Labrador at: [www.wateroffice.ec.gc.ca](http://www.wateroffice.ec.gc.ca)

#### Rocky River 02ZK001 (Eastern NL) (Drainage Area 301 KM2)

Year 2018/2019	MEAN FLOW (M/3S)	FOR THE MONTH		HISTORICAL EXTREMES **			
		MAXIMUM	MINIMUM	MONTHLY		DAILY	
		(DAY)	(DAY)	MAXIMUM (YEAR)	MINIMUM (YEAR)	MAXIMUM (YEAR)	MINIMUM (YEAR)
April	10	3.34	44.7	35.8	7.89	133	1.8
2018	D	(26)	(9)	(1964)	(1979)	(2004)	(1959)
May	11.4	78.9	2.59	25.7	3.51	91.6	1.5
2018		(30)	(20)	(1985)	(1962)	(1985)	(1962)
June	11.3	33.9	2.59	18.5	2.04	87.1	0.65
2018	E	(1)	(18)	(1990)	(1957)	(1988)	(1951)
July	8.49	23.3	2.27	13.8	0.81	93.9	0.42
2018		(20)	(14)	(1981)	(1949)	(1988)	(1949)
August	4.28	18.2	1.2	30.6	0.548	199	0.2
2018		(20)	(15)	(1970)	(1949)	(2007)	(1950)
September	3.7	17.4	1.08	19.6	0.628	216	0.24
2018	D	(19)	(11)	(2004)	(1961)	(2004)	(1961)
October	12.8	29.8	2.45	27.2	3.68	124	0.69
2018		(17)	(9)	(1970)	(1949)	(1953)	(1961)
November	16.1	31.8	7.94	25.8	3.95	125	1.9
2018		(8)	(27)	(1956)	(1948)	(1956)	(1948)
December	11.5	34.6	5.13	31.1	7.53	174	2.6
2018		(23)	(30)	(1953)	(1986)	(1953)	(1961)
January	13.7	28.4	5.74	28.7	4.77	146	1.8
2019		(22)	(1)	(1952)	(1988)	(1951)	(2010)
February	8.7	36.6	2.52	36.9	2.26	294	1.2
2019		(7)	(27)	(1962)	(1975)	(1962)	(1961)
March	11	45.1	2.48	39.8	3.2	200	0.93
2019		(24)	(5)	(1994)	(1963)	(1994)	(1963)

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

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

**R**ecord for the period or daily number (Preliminary)

**Gander River 02YQ001 (Central NL)**  
**(Drainage Area 4400 KM2)**

Year 2018/2019	MEAN FLOW (M/3S)	FOR THE		HISTORICAL EXTREMES **			
		MONTH		MONTHLY		DAILY	
		MAXIMUM (DAY)	MINIMUM (DAY)	MAXIMUM (YEAR)	MINIMUM (YEAR)	MAXIMUM (YEAR)	MINIMUM (YEAR)
April	219	568	82.4	513	44.4	925	22.8
2018	D	(30)	(1)	(1987)	(1967)	(1993)	(1950)
May	255	637	90.3	451	90.3	761	50.4
2018		(1)	(24)	(1967)	(1958)	(2001)	(2006)
June	168	288	94.2	198	37.7	336	18.1
2018	E	(1)	(25)	(2009)	(1979)	(2010)	(1979)
July	142	199	81	148	13.9	206	9
2018	E	(2)	(31)	(2010)	(1975)	(2006)	(1975)
August	36.4	76	16.8	179	6.92	378	4.8
2018		(1)	(31)	(1980)	(1987)	(1980)	(1987)
September	12.5	16.5	10.5	196	4.16	527	2.8
2018	D	(1)	(14)	(1984)	(1961)	(2004)	(1961)
October	98.6	321	11.4	269	9.88	597	3.3
2018		(25)	(11)	(1981)	(1950)	(2003)	(1961)
November	216	314	139	242	37.2	398	14.8
2018	E	(1)	(28)	(1962)	(1961)	(2003)	(1961)
December	121	186	70.9	272	36.9	549	28.4
2018		(3)	(22)	(2004)	(1985)	(1977)	(1985)
January	119	278	63.7	352	36.3	1170	25.3
2019		(28)	(20)	(1983)	(1985)	(1983)	(1985)
February	89	212	43.1	288	18.6	688	14.8
2019		(1)	(28)	(1969)	(1961)	(1984)	(1961)
March	53.4	126	28	275	17.2	560	9.8
2019	D	(29)	(15)	(1988)	(1950)	(1992)	(1961)

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

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

**R**ecord for the period or daily number (Preliminary)

Upper Humber River 02YL001 (Western NL)  
 (Drainage Area 2110 KM2)

Year 2018/2019	MEAN FLOW (M/3S)	FOR THE		HISTORICAL EXTREMES **			
		MONTH		MONTHLY		DAILY	
		MAXIMUM (DAY)	MINIMUM (DAY)	MAXIMUM (YEAR)	MINIMUM (YEAR)	MAXIMUM (YEAR)	MINIMUM (YEAR)
April	70.6	545	14.5	288	19.2	749	9.2
2018	D	(30)	(16)	(1934)	(1967)	(1987)	(1955)
May	274	602	106	383	127	879	35.8
2018	E	(1)	(28)	(1993)	(1983)	(1993)	(1983)
June	159	258	66.5	354	25.8	1010	8.5
2018		(21)	(29)	(1933)	(1979)	(1984)	(1951)
July	37	111	10.8	140	9.3	555	3.9
2018		(2)	(26)	(1939)	(1987)	(1933)	(1986)
August	53	198	17.5	103	3.91	447	1.6
2018		(18)	(29)	(1973)	(1940)	(1973)	(1940)
September	71.4	223	19.1	162	15.2	504	1.6
2018		(30)	(5)	(1944)	(1946)	(1955)	(1940)
October	159	436	28.4	167	24.7	530	8
2018	E	(22)	(14)	(1977)	(1948)	(1957)	(1954)
November	131	392	36.2	177	42.6	813	8.8
2018	E	(5)	(24)	(1962)	(1986)	(1935)	(1948)
December	30.6	91.2	10.3	156	11.4	736	6.8
2018		(26)	(21)	(1954)	(1986)	(1935)	(1986)
January	54.3	184	20.7	129	10.2	663	4
2019	E	(27)	(20)	(1950)	(1971)	(1983)	(1990)
February	28.8	69.9	18.1	106	5.91	348	3.7
2019		(1)	(28)	(1969)	(1975)	(1969)	(1993)
March	28.1	57.7	15.7	141	7.8	530	4
2019		(26)	(15)	(1979)	(1959)	(1936)	(1992)

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

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

**R**ecord for the period or daily number (Preliminary)



**02ZB001 Isle Aux Morts River (South Western NL)**  
**(Drainage Area 205 KM2)**

Year 2018/2019	MEAN FLOW (M/3S)	FOR THE		HISTORICAL EXTREMES **			
		MONTH		MONTHLY		DAILY	
		MAXIMUM (DAY)	MINIMUM (DAY)	MAXIMUM (YEAR)	MINIMUM (YEAR)	MAXIMUM (YEAR)	MINIMUM (YEAR)
April	18.7	98.5	3.97	46.3	3.62	325	0.696
2018	D	(29)	(12)	(1994)	(1967)	(2003)	(2004)
May	26.8	46.9	10.5	51.1	6.16	226	2.18
2018		(1)	(10)	(1994)	(1986)	(1972)	(2010)
June	16.1	57.9	4.65	34.7	2.58	259	0.79
2018	E	(29)	(17)	(1972)	(1976)	(1985)	(1976)
July	6.18	20.3	1.24	22.7	1.17	102	0.35
2018		(1)	(17)	(1981)	(1989)	(1993)	(1989)
August	5.9	22.3	1.26	17.9	1.39	124	0.34
2018		(8)	(30)	(2007)	(1978)	(1990)	(1978)
September	9.65	44.2	0.946	23.7	3.53	176	0.71
2018		(22)	(3)	(1998)	(1973)	(2005)	(1969)
October	28.6	126	5.04	31	5.65	178	1.13
2018	E	(25)	(9)	(1972)	(1963)	(1977)	(2001)
November	11.3	41.4	3.13	38.3	7.7	348	1.6
2018	D	(7)	(27)	(1967)	(2000)	(2006)	(1970)
December	7.95	71.3	2.08	43	3.13	434	0.83
2018		(23)	(17)	(1990)	(1994)	(1990)	(2007)
January	7.42	41.6	1.27	24	1.22	219	0.57
2019		(22)	(31)	(1986)	(1991)	(1986)	(1991)
February	5.46	20.3	1.33	31.1	0.923	243	0.41
2019		(17)	(7)	(1996)	(1975)	(1996)	(1991)
March	9.16	38.9	1.33	38.9	0.737	410	0.34
2019		(23)	(10)	(1979)	(2004)	(1996)	(1987)

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**R**ecord for the period or daily number (Preliminary)

**03QC001 Eagle River (Labrador)**  
**(Drainage Area 10900 KM2)**

Year 2018/2019	MEAN FLOW (M/3S)	FOR THE MONTH		HISTORICAL EXTREMES **			
		MAXIMUM (DAY)	MINIMUM (DAY)	MONTHLY		DAILY	
				MAXIMUM (YEAR)	MINIMUM (YEAR)	MAXIMUM (YEAR)	MINIMUM (YEAR)
<b>April</b>	28.4	150	15.7	311	8.33	2460	7.2
<b>2018</b>	D	(30)	(23)	(2010)	(1993)	(1983)	(1993)
<b>May</b>	136	796	14	1400	106	2690	11.8
<b>2018</b>	D	(31)	(19)	(1971)	(1967)	(1971)	(1975)
<b>June</b>	1180	1720	782	1810	265	2990	127
<b>2018</b>	E	(5)	(30)	(1985)	(2005)	(1985)	(2005)
<b>July</b>	530	901	257	638	119	1330	71.4
<b>2018</b>	E	(29)	(22)	(1985)	(1976)	(1980)	(1976)
<b>August</b>	485	752	241	495	102	1320	64
<b>2018</b>	E	(1)	(27)	(1989)	(1988)	(1967)	(2008)
<b>September</b>	224	402	132	521	84.1	827	59
<b>2018</b>		(2)	(23)	(1976)	(1984)	(1976)	(1984)
<b>October</b>	180	219	145	515	100	705	78.4
<b>2018</b>		(31)	(16)	(1978)	(1973)	(1966)	(1973)
<b>November</b>	131	136	126	488	65.3	695	51
<b>2018</b>	D	(1)	(30)	(1995)	(2002)	(1980)	(1974)
<b>December</b>	112	126	97.9	218	36.3	410	27.5
<b>2018</b>		(1)	(31)	(1995)	(1974)	(2005)	(1974)
<b>January</b>	72.7	80.8	65.1	98.9	22.4	108	19
<b>2019</b>		(1)	(31)	(1969)	(1975)	(1969)	(1993)
<b>February</b>	55.6	64.5	47.6	86.2	14.9	90.6	11.8
<b>2019</b>	E	(1)	(28)	(1969)	(1993)	(1969)	(1993)
<b>March</b>	23.7	27.5	21.2	78.7	9.64	119	8.2
<b>2019</b>	D	(1)	(31)	(1969)	(1993)	(1979)	(1993)

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**R**ecord for the period or daily number (Preliminary)

## COORDINATORS MEETINGS

The coordinators met in person once and frequent e-mail correspondence and conference calls took place in 2018-2019. Discussions range from operating cost, capital plan, and bilateral agreement.

## 3.0 NETWORK CHARACTERISTICS

Water Survey of Canada operates 113 hydrometric stations in Newfoundland and Labrador. The station classifications are listed in the next Table.

In 2018-2019 One provincial station was decommissioned:

- 03OE015 Churchill River at Mid Pool

In 2018-2019 All provincial precipitation stations were decommissioned

- Adies Lake
- Glover Island
- Howley Road
- Burgeo Road
- Hinds Lake

In 2018-2019 4 provincial stations were added:

- 03OE019 Churchill River Below Outlet of Traverspine River
- 03OE018 Churchill River at End of Mud Lake Road
- 03PD003 Churchill River Outlet at Rabbit Island
- 03OE016 Churchill River at Happy Valley

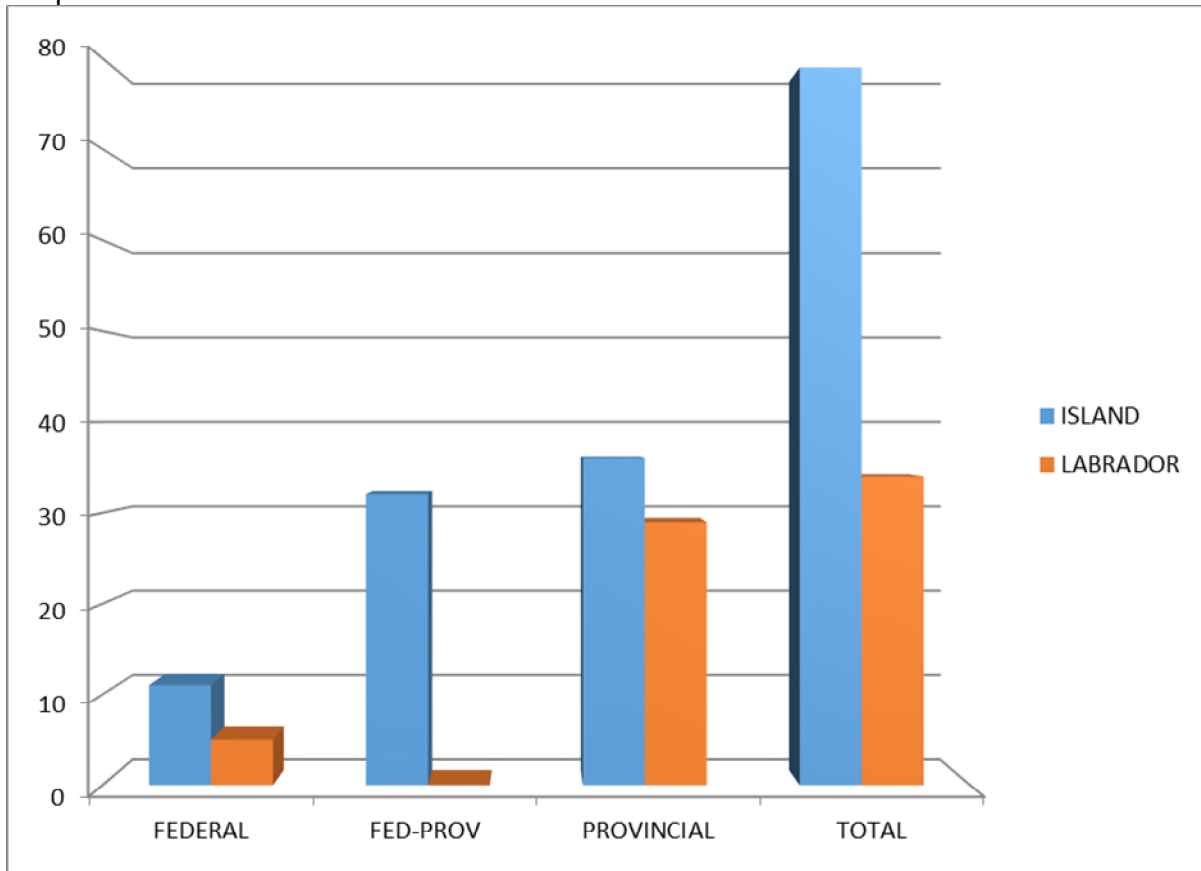
Water Survey of Canada also takes water samples at 7 different sites for water quality purpose on behalf of the Newfoundland and Labrador Department of Environment and Conversation. These sites are converted in station units in order to have their cost calculated under this agreement.

Under the Canada–Newfoundland and Labrador Memorandum of Agreement, 113 stations were operated in 2018-2019. The complete station list is available in Appendix A. The stations classifications are as follow:

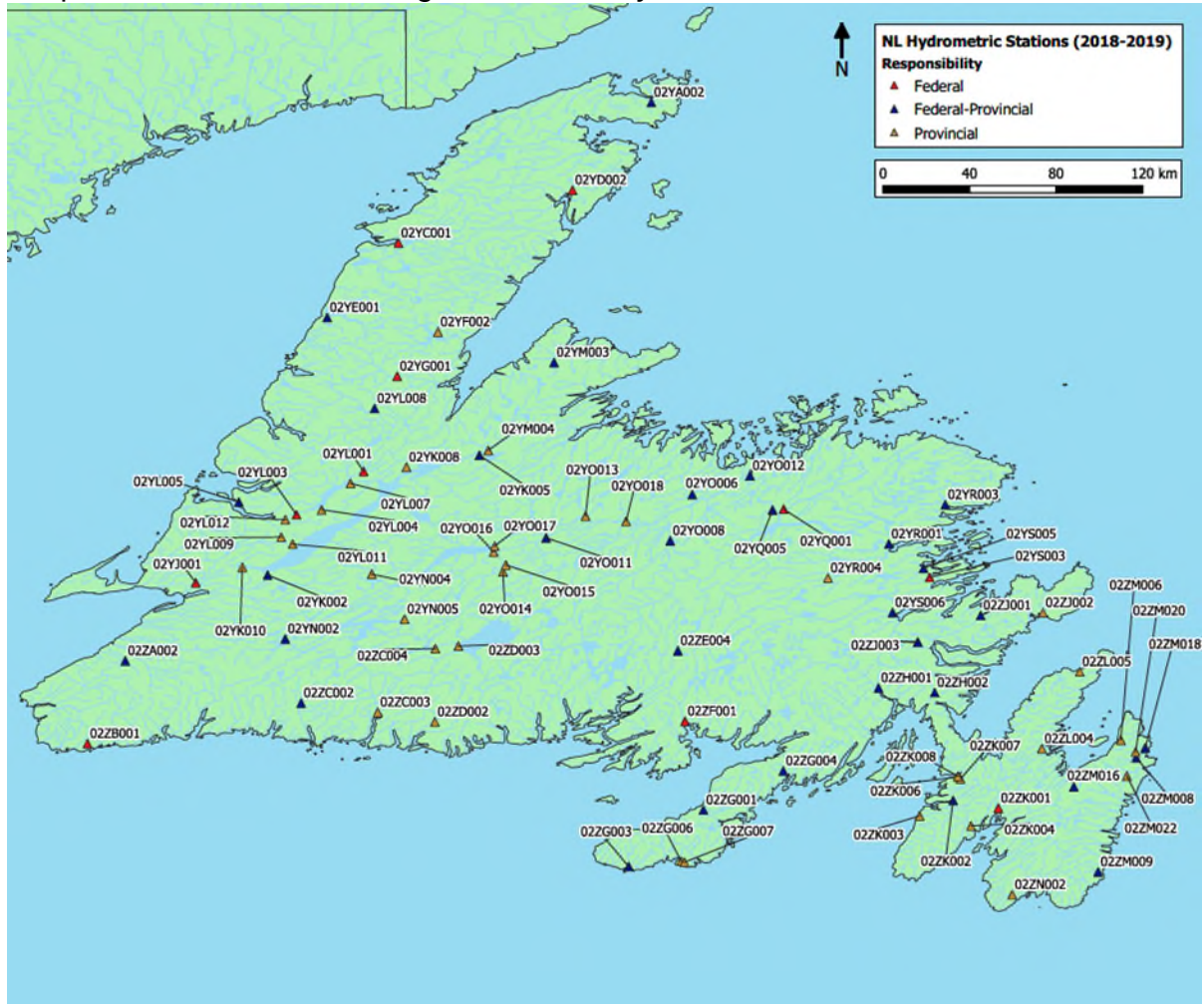
Table 3.1: *Station classification based on Newfoundland and Labrador*

NEWFOUNDLAND AND LABRADOR			
CLASSIFICATION	ISLAND	LABRADOR	TOTAL
FEDERAL	11	5	16
FED-PROV	32	0	32
PROVINCIAL	36	29	65
TOTAL	79	34	113

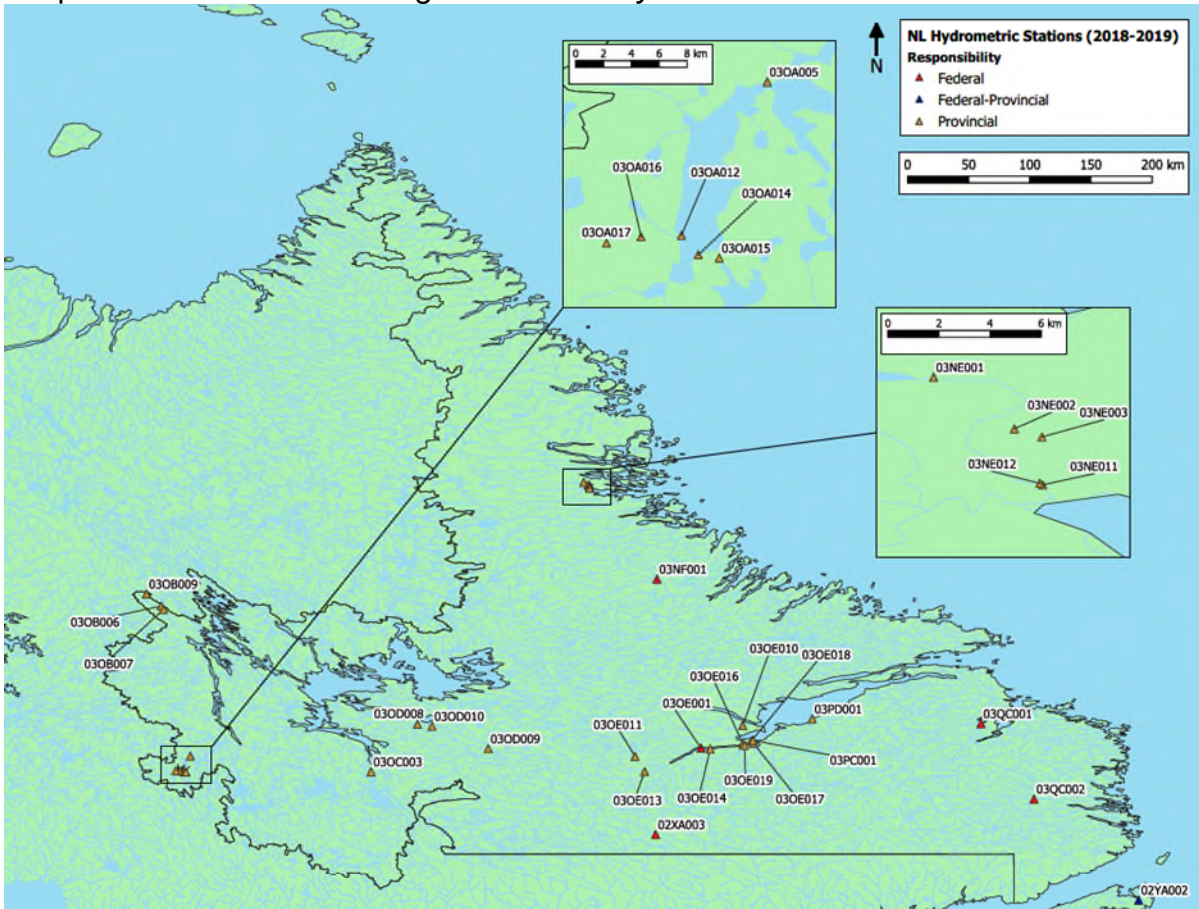
Graph 3.1: *Distribution of station classification for Newfoundland and Labrador*



Graph 3.2: Location and designation of the hydrometric network in Newfoundland



Graph 3.3: Location and designation of the hydrometric network in Labrador



#### 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 Municipal Affairs and Environment was credited with the total amount of \$21,255 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 in Newfoundland and Labrador for 2018-2019.

#### STREAMFLOW AND WATER LEVEL COSTS FOR NEWFOUNDLAND AND LABRADOR

	2018/19	2018/19
OPERATIONAL	Planned	Actuals
Salaries (Including benefits 20%)	\$608,752	\$ 629,352
Hydrometric Operations O&M	\$366,161	\$343,762
Capital	\$27,484	\$36,451
Real Property Credit	-\$9,600	-\$9,600
Real Time Web Cam	-\$7,350	-\$7,350
Weather Station	-\$4,305	-\$4,305
Equipment purchased by the province *	\$18,594	
<b>TOTALS</b>	<b>\$999,736</b>	<b>\$988,310</b>

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

#### SUMMARY OF TOTAL EXPENDITURES 2018-2019

CATEGORY	FEDERAL	NEWFOUNDLAND AND LABRADOR	TOTAL
Hydrometric operations (O&M)	\$147,327	\$343,762	\$491,089
Capital (Hydroacoustic Equipment)	\$15,622	\$36,451	\$52,073
Capital (Vehicles)	\$46,473	\$0	\$46,473
Salaries + 20%	\$271,436	\$ 629,352	\$900,788
<b>TOTAL</b>	<b>\$480,858</b>	<b>\$1,009,565</b>	<b>\$1,490,423</b>

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

### **O&M Expenditures Details**

<b>ITEM</b>	<b>ACTUAL EXPENDITURES (FISCAL YEAR 18/19)</b>
025 - TRAVEL-PUBLIC SERVANTS	\$ 60,256
082 - SPECIAL FEES AND SERVICES	\$ 84
021 - POSTAGE, FREIGHT, EXPRESS, AND CARTAGE	\$ 3,728
044 - TRAINING AND EDUCATIONAL SERVICES	\$ 210
117 - MISCELLANEOUS GOODS AND PRODUCTS	\$ 4,599
026 - TRAVEL-NON-PUBLIC SERVANTS	\$ 1,688
325 - MISCELLANEOUS EXPENDITURES	\$ 127
123 - ACQUISITION OF OFFICE EQUIPMENT	\$ 1,482
121 - ACQUISITION OF MACHINERY AND MACHINERY PARTS	\$ 944
115 - PERSONAL GOODS	\$ 4,023
070 - UTILITY SERVICES	\$ 1,649
040 - BUSINESS SERVICES	\$ 2,436
043 - SCIENTIFIC AND RESEARCH SERVICES	\$ 6,895
065 - REPAIR OF MACHINERY AND EQUIPMENT	\$ 35,201
112 - MINERAL PRODUCTS	\$ 41,593
046 - PROTECTION SERVICES	\$ 833
124 - ACQUISITION OF EQUIPMENT	\$ 21,575
022 - TELECOMMUNICATION SERVICES	\$ 2,594
063 - REPAIR OF BUILDINGS	\$ 66
056 - RENTAL OF AIRCRAFT AND SHIPS	\$ 140,850
122 - ACQUISITION OF INFORMATICS EQUIPMENT	\$ 6,998
116 - METALS AND METAL PRODUCTS	\$ 128
126 - ACQUISITION OF OTHER VEHICLES AND PARTS	\$ 5,803
<b>TOTAL</b>	\$ 343,762



## **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 Municipal Affairs and Environment on a case by case basis. Annual maintenance was conducted to ensure minimal data loss and maintain data quality.

The week of September 17, 2018, National headquarter held a training session in Newfoundland with the local St John's office and the Provincial partners. From the session, the province selected several sites to further collect CVGD2013 datum conversion for the 2018-2019 year. The sites selected for CVGD2013 datum conversion where:

- Waterford River at Kilbride (02ZM008)- undertaken as part of training
- Virginia River at Pleasantville (02ZM018)- undertaken as part of training
- Raymond Brook at Outlet of Bay Bulls Big Pond (02ZM022)- undertaken as part of training
- Great Rattling Brook above Tote River Confluence (02YO008)- undertaken by WSC
- Exploits River below Noel Pauls Brook (02YO011)- undertaken by WSC
- Exploits River near Millertown (02YO016)- undertaken by WSC
- Churchill River English Point (03PC001)- Surveyor hired to undertake
- Rabbit Island at the Outlet of the Churchill River (03PD002)- Surveyor hired to undertake

The field data was collected and surveyed to the local datum and the field data was post processed to obtain the correct conversion.

## Appendix A

### SCHEDULE C 2018-2019 – STATION LIST

#### FEDERAL

02ZF001	BAY DU NORD RIVER AT BIG FALLS
02YQ001	GANDER RIVER AT BIG CHUTE
02YJ001	HARRYS RIVER BELOW HIGHWAY BRIDGE
02YL003	HUMBER RIVER AT HUMBER VILLAGE BRIDGE
02ZB001	ISLE AUX MORTS RIVER BELOW HIGHWAY BRIDGE
02YG001	MAIN RIVER AT PARADISE POOL
02YD002	NORTHEAST BROOK NEAR RODDICKTON
02ZK001	ROCKY RIVER NEAR COLINET
02YS003	SOUTHWEST BROOK AT TERRA NOVA NATIONAL PARK
02YL001	UPPER HUMBER RIVER NEAR REIDVILLE
02YC001	TORRENT RIVER AT BRISTOL'S POOL
03QC002	ALEXIS RIVER NEAR PORT HOPE SIMPSON
03OE001	CHURCHILL RIVER ABOVE UPPER MUSKRAT FALLS
03QC001	EAGLE RIVER ABOVE FALLS
02XA003	LITTLE MECATINA RIVER ABOVE LAC FOURMONT
03NF001	UGJOKTOK RIVER BELOW HARP LAKE

#### FEDERAL - PROVINCIAL

02YA002	BARTLETTS RIVER NEAR ST. ANTHONY
02ZH002	COME-BY-CHANCE RIVER NEAR GOOBIES
02ZE004	CONNE RIVER AT OUTLET OF CONNE POND
02YO011	EXPLOITS RIVER BELOW NOEL PAULS BROOK
02ZG001	GARNISH RIVER NEAR GARNISH
02ZC002	GRANDY BROOK BELOW TOP POND BROOK
02YO008	GREAT RATTILING BROOK ABOVE TOTE RIVER CONFLUENCE
02YE001	GREAVETT BROOK ABOVE PORTLAND CREEK POND
02ZA002	HIGHLANDS RIVER AT TRANS CANADA HIGHWAY
02YR003	INDIAN BAY BROOK NEAR NORTHEAST ARM
02YK002	LEWASSECHJEECH BROOK AT LITTLE GRAND LAKE
02YN002	LLOYDS RIVER BELOW KING GEORGE IV LAKE
02YR001	MIDDLE BROOK NEAR GAMBO
02ZK002	NORTHEAST RIVER NEAR PLACENTIA
02YO006	PETERS RIVER NEAR BOTWOOD
02ZH001	PIPERS HOLE RIVER AT MOTHERS BROOK
02ZG004	RATTLE BROOK NEAR BOAT HARBOUR
02YL005	RATTLER BROOK NEAR MCIVERS
02YQ005	SALMON RIVER NEAR GLENWOOD

02ZG003	SALMONIER RIVER NEAR LAMALINE
02ZM009	SEAL COVE BROOK NEAR CAPPAHAYDEN
02YK005	SHEFFIELD BROOK NEAR TRANS CANADA HIGHWAY
02ZJ003	SHOAL HARBOUR RIVER NEAR CLARENVILLE
02ZM016	SOUTH RIVER NEAR HOLYWOOD
02ZJ001	SOUTHERN BAY RIVER NEAR SOUTHERN BAY
02YO012	SOUTHWEST BROOK AT LEWISPORTE
02YM003	SOUTH WEST BROOK NEAR BAIE VERTE
02YS005	TERRA NOVA RIVER AT GLOVERTOWN
02YL008	UPPER HUMBER RIVER ABOVE BLACK BROOK
02ZM018	VIRGINIA RIVER AT PLEASANTVILLE
02YS006	NORTHWEST RIVER AT TERRA NOVA NATIONAL PARK
02ZM008	WATERFORD RIVER AT KILBRIDE

**PROVINCIAL**

02ZL005	BIG BROOK AT LEAD COVE
02YK008	BOOT BROOK AT TRANS-CANADA HIGHWAY
02YL009	CORNER BROOK LAKE AT LAKE OUTLET
02YL007	DEER LAKE NEAR GENERATING STATION
02YO015	EAST POND BROOK BELOW EAST POND
02YO014	TRIBUTARY TO GILL'S POND BROOK
02YK010	GRAND LAKE EAST OF GRAND LAKE BROOK
02YO013	EXPLOITS RIVER AT BADGER
02YO016	EXPLOITS RIVER NEAR MILLERTOWN
02YO018	EXPLOITS RIVER at Charlie Edwards Point
02YO017	Red Indian Lake at Indian Point
02ZC004	GRANITE LAKE AT EAST END
02ZD002	GREY RIVER NEAR GREY RIVER
02YM004	INDIAN BROOK DIVERSION ABOVE BIRCHY LAKE
02ZM020	LEARYS BROOK AT PRINCE PHILIP DRIVE
02ZK003	LITTLE BARACHOIS RIVER NEAR PLACENTIA
02ZK004	LITTLE SALMONIER RIVER NEAR NORTH HARBOUR
02ZK007	RATTLING BROOK BIG POND
02ZK006	RATTLING BROOK BELOW BRIDGE
02ZK008	Rattling Brook below Plant Discharge
02ZM006	NORTHEAST POND RIVER AT NORTHEAST POND
02ZM022	RAYMOND BROOK AT OUTLET OF BAY BULLS BIG POND
02ZJ002	SALMON COVE RIVER NEAR CHAMPNEYS
02ZL004	SHEARSTOWN BROOK AT SHEARSTOWN
02YL004	SOUTH BROOK AT PASADENA
02YL012	Steady Book above Confluence of Humber river

02ZN002	ST. SHOTTS RIVER NEAR TREPASSEY
02YN004	STAR BROOK ABOVE STAR LAKE
02YR004	TRITON BROOK ABOVE GAMBO POND
02YN005	VICTORIA LAKE AT NORTHEAST CONTROL STRUCTURE
02ZD003	R.R. POND NEAR GRANITE LAKE
02YF002	CAT ARM RESERVOIR NEAR SPILLWAY
02ZC003	WHITE BEAR RIVER ABOVE BIG INDIAN BROOK
02ZG006	OUTFLOW OF GREBES NEST POND
02YO019	Badger Brook Below Foot Bridge
02ZG007	OUTFLOW OF UNNAMED POND SOUTH OF LONG POND
03OC003	ATIKONAK RIVER ABOVE PANCHIA LAKE
03NE003	CAMP POND AT SOUTHWEST END
03NE002	CAMP POND BROOK BELOW CAMP POND
03OA012	Luce Brook below Tinto Pond
03OA014	Wabush Lake at Dolomite Rd
03OA005	Wabush Lake at Lake Outlet
03OE011	PINUS RIVER
03NE011	REID BROOK Below Tributary
03NE001	REID BROOK AT OUTLET OF REID POND
03NE012	TRIBUTARY to Reid Brook
03OE013	CHURCHILL RIVER ABOVE GRIZZLE RAPIDS
03OE014	CHURCHILL RIVER 6.15KMS BELOW MUSKRAT FALLS
03PD001	Lake Melville East of Little River
03PC001	Churchill River at English Point
03OB006	Goodream Creek 2KM Northwest of Timmins 6
03OB007	Eloss Creek below Pinette Lake Inflow
03OA015	Flora Creek below Trans Labrador Highway
03OE015	Churchill River at Mid Pool
03OB009	Joan Brook below outlet of Joan Lake
03OA016	Dumbell stream above Dumbell Lake
03OD008	Churchill River Above Churchill Falls Tailrace
03OD009	Churchill River below Metchin River
03OD010	Churchill River Below Churchill Falls Tailrace
03OE017	Mud Lake at outlet tributary at Mud Lake
03OA017	Pumphouse Stream above Drum Lake
03OE019	Churchill River Below Outlet of Traverspine River
03OE018	Churchill River at End of Mud Lake Road
03PD002	Churchill River Outlet at Rabbit Island
03OE016	Churchill River at Happy Valley

**Appendix B SIGNED SCHEDULE D 2018-2019**

**NEWFOUNDLAND AND LABRADOR 2018-2019**



**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 2018-2019 TO BE PAID TO THE RECEIVER GENERAL FOR CANADA BY THE PROVINCE OF NEWFOUNDLAND AND LABRADOR**

NEWFOUNDLAND and LABRADOR SHARE	O&M	Salary	Capital	Total
a) Streamflow and Water Level Installations - Island	\$97,808	\$373,868	\$17,796	\$489,471
b) Streamflow and Water Level Installations - Labrador	\$268,353	\$234,683	\$9,689	\$512,725
c) Construction & Major Maintenance (LCM)	\$0	\$0	\$0	\$0
d) Station Decommissioning	\$0	\$0	\$0	\$0
e) Hydrometric Workstation	\$0	\$0	\$0	\$0
f) Real Property Credit for Federal stations on Provincial Crown Land	(\$9,600)	\$0	\$0	-\$9,600
g) Real Time Webcam	(\$7,350)	\$0	\$0	-\$7,350
h) Weather Stations	(\$4,385)	\$0	\$0	-\$4,385
i) Basin Delineation & Information	\$0	\$0	\$0	\$0
j) Special Projects*	\$0	\$0	\$0	\$0
<b>TOTAL</b>	<b>\$344,907</b>	<b>\$608,762</b>	<b>\$27,484</b>	<b>\$981,142</b>

 Haseen Khan, P.Eng. Director Water Resources Management Division Department of Environment and Climate Change Administrator for Province of Newfoundland and Labrador	 Alain Pietroniro Executive Director National Hydrological Service Meteorological Service of Canada Environment and Climate Change Canada
Date <b>OCT 23 2018</b>	Date <b>Oct 31/18</b>

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