Environment and
Climate Change Canada

Environnement et
Changement climatique Canada

CANADA – NEWFOUNDLAND AND LABRADOR

MEMORANDUM OF AGREEMENT FOR WATER QUANTITY SURVEYS

REPORT FOR FISCAL YEAR 2022-2023

TABLE OF CONTENTS

LETTER OF TRANSMITTAL

TO: Colin Angus
Administrator for Canada

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

We hereby submit an annual report for the fiscal year 2022-2023 covering activities under the Memorandum of Agreement for Water Quantity Surveys for Newfoundland and Labrador.

Members
Coordinating Committee

Government of Canada

DeVries, Timothy

Digitally signed by: DeVries, Timothy
DN: CN = DeVries, Timothy C = CA O = GC OU = EC-EC
Date: 2025.07.31 09:16:54 -04'00'

Tim DeVries
Environment Canada and Climate Change

Government of Newfoundland and Labrador

Paula Dawe

Digitally signed by Paula Dawe
Date: 2025.08.05 14:25:58 -02'30'

Paula V Dawe
Dept. of Environment and Climate Change, 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.

During this reporting period, Water Survey of Canada operated 105 hydrometric stations in partnership with Newfoundland and Labrador. The operation of 4 stations was temporarily discontinued for the year. The station classification can be seen in section 4.

In addition to the regular hydrometric activities, several construction projects have taken place during fiscal year 2022-2023 as described in section 6.

Currently all stations with the exception of 1 are equipped with satellite telemetry, which means that 99% of the network is reporting in real-time.

The actual share of the province for operational expenditures **($1,021,690)** was 0.4% higher than the original calculated estimate **($1,017,431)**. Financial details are given in section 5 of this report.

A summary of cumulative annual costs from the year 1975-76 to the year 2022-2023 is located in Appendix C.

1. INTRODUCTION

This report covers the activities under the Canada/Newfoundland and Labrador Memorandum of Agreement for Water Quantity Surveys for the fiscal year 2022-2023.

The operation of an integrated network of hydrometric stations in Newfoundland and Labrador is cost-shared between National Hydrological Services (NHS) - Meteorological Service of Canada -Environment and Climate Change Canada, and Newfoundland and Labrador, Department of Environment and Climate Change 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 any regionally significant hydrologic conditions that were encountered during 2022-2023.

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

The *Network Characteristics* section includes a brief summary of the network including any changes from the previous year.

The *Operations* section outlines financial details including 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.

2.0 HYDROLOGIC CONDITIONS

Regional Highlights
What remained of the spring freshet at the beginning of the 2022-23 fiscal year was very typical for the entire region. Summer period low water flows were on the low side of normal on the island of Newfoundland during the summer months.

Conditions during the winter of 2022-23 saw low to moderate snowpack in Newfoundland, with Labrador experiencing typical snowpack amounts.

In September of 2022, Hurricane Fiona and Hurricane Earl caused impacts to different areas within the province. Fiona made landfall in the Port aux Basques region, where homes were destroyed, and people were displaced. There were no major network issues, and water levels did rise, but not to annual peak or historic levels. With Hurricane Earl, significant rainfall came to the Northeast Avalon Peninsula, which resulting in regional flooding.

Figure 2.1: Gander River at Big Chute (Station ID: 02YQ001) after January rain on snow event (Photo credit: NHS Operations).

3.0 COORDINATORS MEETINGS

The coordinators met in person and virtually several times throughout the course of the year. Discussions ranged from operating costs, to new station planning, and review of capital plan items.

One major topic of discussion during the 22-23 year that included all of Atlantic Canada, included continued planning for a sustainable staffing model for the region. This resulted in the introduction of 2 new supervisory positions in Atlantic Canada.

4.0 NETWORK CHARACTERISTICS

Water Survey of Canada operates 105 hydrometric stations in Newfoundland and Labrador.

In 2022-23, four stations were mothballed:

- 02ZC002 Grandy Brook below Top Pond Brook (FP)
- 02YQ005 Salmon River near Glenwood (FP)
- 02ZM016 South River near Holywood (FP)
- 02ZK004 Little Salmonier River near North Harbour (P)

Currently all stations with the exception of 1 are equipped with satellite telemetry, which means that 99% of the network is reporting in real-time.

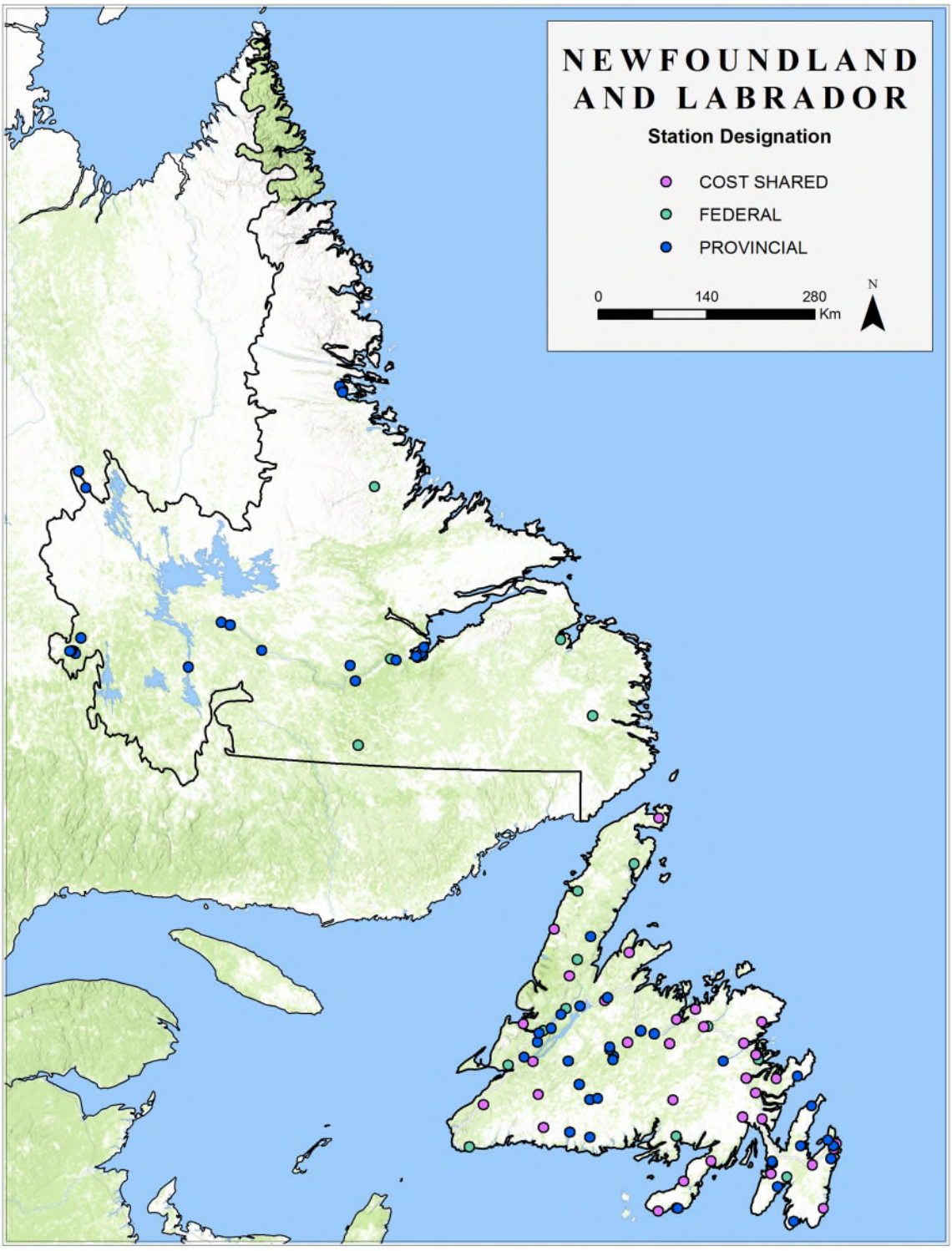
The stations classification, including distribution between Newfoundland and Labrador, is as outlined in Table 3.1. Further, Figure 3.1 illustrates the locations and designations of these stations.

Table 3.1: Station classification within Newfoundland and Labrador

CLASSIFICATION	ISLAND	LABRADOR	TOTAL
FEDERAL	11	5	**16**
FED-PROV	29	0	**29**
PROVINCIAL	34	26	**60**
TOTAL	**74**	**31**	**105**

Note that NHS also takes water samples at several sites for water quality purposes on behalf of the Newfoundland and Labrador Department of Environment and Climate Change. These sites are converted into station units in order to have their cost calculated under this agreement.

Figure 3.1: Location and designations of hydrometric network in Newfoundland and Labrador



5.0 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.

The Newfoundland and Labrador Department of Environment and Climate Change was credited with the total amount of $68,811 for their contribution to the Partnership.

Table 5.1 summarizes the estimated and the actual costs to operate the provincial share of the stream gauging network in Newfoundland and Labrador for 2021-2022, and includes the provincial contribution items. Table 5.2 summarizes all network costs, including construction components and the Federal share. Finally, Table 5.3 details the Operations and Maintenance expenditures attributable to the Province.

The signed version of the Schedule D for fiscal year 2022-23 can be found in the Appendix B.

Table 5.1: Hydrometric network operation costs attributable to the Province of Newfoundland and Labrador. (Does not include construction activities)

	2022/23	**2022/23**
OPERATIONAL	**Planned Schedule D**	**Actuals**
Salaries (Including benefits 27%)	$ 644,520	$ 656,223
Operations and Maintenance	$ 359,357	$ 381,227
Capital	$82,365	$ 53,051
Real Property Credit	-$9,600	-$9,600
Real Time Web Cam	-$7,350	-$7,350
Weather Station	-$4,305	-$4,305
Shipping costs paid by N.L.	-$4,800	-$4,800
Height Modernization	-$22,000	-$22,000
Third Party Agreement management	-$7,254	-$7,254
Equipment purchased by the province	-$13,502	-$13,502
TOTALS	**$1,017,431**	**$1,021,690**

Table 5.2: Summary of total network expenditures

CATEGORY	FEDERAL	NEWFOUNDLAND AND LABRADOR	TOTAL
Hydrometric operations (O&M)	$ 146,381	$ 381,227	$ 527,608
Expense/Credit for Special Projects completed by N.L.	$68,811	-$ 68,811	$ 0
Capital	$ 24,117	$ 53,051	$ 77,168
Salaries + Employee Benefits Pension	$ 332,724	$ 656,223	$ 988,947
Construction & Major Maintenance	$ 244,561	$ 27,462	$ 272,023
TOTAL	**$816,594**	**$1,049,152**	**$1,865,746**

Table 5.3: Provincial Operations and Maintenance expenditure details

ITEM	EXPENDITURE (Fiscal Year 22/23)
020 - TRAVEL	33,647
022 - POSTAGE,FREIGHT,EXPR	263
023 - TELECOMMUNICATIONS	3,984
040 - TRAINING	3,376
041 - PROF.& SPECIAL SRVS	17,114
042 - OTHER BUSINESS SERV	805
051 - OTHER RENTALS	232,822
062 - REPAIR & MAINT-EQUIP	22,592
070 - ENERGY -TRANSPORTATI	18,283
071 - PUBLIC UTILITIES	1,244
072 - MATERIALS & SUPPLIES	46,398
121 - MISCELLANEOUS EXPEND	699
TOTAL	**$ 381,227**

6.0 CONSTRUCTION & SPECIAL PROJECTS

The coordinators meet near the beginning of the fiscal year to review planned construction projects.

Infrastructure projects completed in Newfoundland and Labrador in 2022-23 were focused on legacy issues. There were two inactive cableways removed along with an inactive creosote stilling well. Environmental studies were completed at these decommissioning/remediation sites, along with another site in preparation for future stilling well decommissioning and associated remediation.

Details of these projects can be found in a report titled “Hydrometric Infrastructure and Construction in Atlantic Canada Project Summary Report 2022 – 2023” which is attached to this report in Appendix D.

The work of the Newfoundland and Labrador Strategic Planning Working Group was initiated and largely completed during fiscal year 2021-22. The work or the team is fully detailed within the jointly prepared report entitled “Hydrometric Program Strategic Planning Working Group Report”. This was a strategic review and long-term plan for the hydrometric program in Newfoundland and Labrador, with particular focus on potential solutions to operational challenges and fiscal constraints. This project was completed in May 2022.

The province also undertook GNSS surveys for CVGD2013 datum conversion at the following sites in 2022-23:

Station #	Station Name
02YA002	BARTLETTS RIVER NEAR ST. ANTHONY
02YC001	TORRENT RIVER AT BRISTOL'S POOL
02YD002	NORTHEAST BROOK NEAR RODDICKTON
02YJ001	HARRYS RIVER BELOW HIGHWAY BRIDGE
02YM003	SOUTHWEST BROOK NEAR BAIE VERTE
02YO006	PETERS RIVER NEAR BOTWOOD
02YO012	SOUTHWEST BROOK AT LEWISPORTE
02YQ005	SALMON RIVER NEAR GLENWOOD
02YR001	MIDDLE BROOK NEAR GAMBO
02YR003	INDIAN BAY BROOK NEAR NORTHWEST ARM
02ZA002	HIGHLANDS RIVER AT TCH
02ZB001	ISLE AUX MORTS RIVER BELOW HIGHWAY BRIDGE
02ZE004	CONNE RIVER AT OUTLET OF CONNE RIVER POND
02ZH001	PIPERS HOLE RIVER AT MOTHERS BROOK
02ZH002	COME BY CHANCE RIVER NEAR GOOBIES
02ZJ001	SOUTHERN BAY RIVER NEAR SOUTHERN BAY
02ZJ002	SALMON COVE RIVER NEAR CHAMPNEYS
02ZJ003	SHOAL HARBOUR RIVER NEAR CLARENVILLE
02YS006	NORTHWEST RIVER AT TERRA NOVA NATIONAL PARK
02YS005	TERRA NOVA RIVER AT GLOVERTOWN
02YS003	SOUTHWEST BROOK AT TERRA NOVA NATIONAL PARK

Appendix A

SCHEDULE "C" NEWFOUNDLAND AND LABRADOR 2022-2023

H -water level data
Q - flow data
M - manual gauge
R - automatic recording gauge

C - continuous record
M - miscellaneous record
S - seasonal record

Status	Station No	Station Name	Class	Stn units	fed	prov	com	Operator
	FEDERAL							
ACTIVE	02ZF001	BAY DU NORD RIVER AT BIG FALLS	Federal 4	1.2	1.2	0	0	WSC
ACTIVE	02YQ001	GANDER RIVER AT BIG CHUTE	Federal 4	1	1	0	0	WSC
ACTIVE	02YJ001	HARRYS RIVER BELOW HIGHWAY BRIDGE	Federal 4	1	1	0	0	WSC
ACTIVE	02YL003	HUMBER RIVER AT HUMBER VILLAGE BRIDGE	Federal 4	1	1	0	0	WSC
ACTIVE	02ZB001	ISLE AUX MORTS RIVER BELOW HIGHWAY BRIDGE	Federal 1	1	1	0	0	WSC
ACTIVE	02YG001	MAIN RIVER AT PARADISE POOL	Federal 4	1.2	1.2	0	0	WSC
ACTIVE	02YD002	NORTHEAST BROOK NEAR RODDICKTON	Federal 4	1	1	0	0	WSC
ACTIVE	02ZK001	ROCKY RIVER NEAR COLINET	Federal 1	1	1	0	0	WSC
ACTIVE	02YS003	SOUTHWEST BROOK AT TERRA NOVA NATIONAL PARK	Federal 1	1	1	0	0	WSC
ACTIVE	02YL001	UPPER HUMBER RIVER NEAR REIDVILLE	Federal 1	1	1	0	0	WSC
ACTIVE	02YC001	TORRENT RIVER AT BRISTOL'S POOL	Federal 4	1	1	0	0	WSC
ACTIVE	03QC002	ALEXIS RIVER NEAR PORT HOPE SIMPSON	Federal 4	1.2	1.2	0	0	WSC
ACTIVE	03OE001	CHURCHILL RIVER ABOVE UPPER MUSKRAT FALLS	Federal 4	0.6	0.6	0	0	WSC
ACTIVE	03QC001	EAGLE RIVER ABOVE FALLS	Federal 4	1.2	1.2	0	0	WSC
ACTIVE	02XA003	LITTLE MECATINA RIVER ABOVE LAC FOURMONT	Federal 2	1.2	1.2	0	0	WSC
ACTIVE	03NF001	UGJOKTOK RIVER BELOW HARP LAKE	Federal 4	1.2	1.2	0	0	WSC
	Total Federal Newfoundland			11.4	11.4	0.0	0.0	11.0
	Total Federal Labrador			5.4	5.4	0.0	0.0	5.0
	Total Federal Newfoundland & Labrador			16.8	16.8	0.0	0.0	16.0

	FEDERAL – PROVINCIAL							
ACTIVE	02YA002	BARTLETTS RIVER NEAR ST. ANTHONY	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02ZH002	COME-BY-CHANCE RIVER NEAR GOOBIES	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02ZE004	CONNE RIVER AT OUTLET OF CONNE POND	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02YO011	EXPLOITS RIVER BELOW NOEL PAULS BROOK	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02ZG001	GARNISH RIVER NEAR GARNISH	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02YO008	GREAT RATTLING BROOK ABOVE TOTE RIVER CONFLUENCE	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02YE001	GREAVETT BROOK ABOVE PORTLAND CREEK POND	Fed-Prov 3	1.20	0.60	0.60	0	WSC
ACTIVE	02ZA002	HIGHLANDS RIVER AT TRANS CANADA HIGHWAY	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02YR003	INDIAN BAY BROOK NEAR NORTHWEST ARM	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02YK002	LEWASSEECHJEECH BROOK AT LITTLE GRAND LAKE	Fed-Prov 3	1.20	0.60	0.60	0	WSC
ACTIVE	02YN002	LLOYDS RIVER BELOW KING GEORGE IV LAKE	Fed-Prov 3	1.20	0.60	0.60	0	WSC
ACTIVE	02YR001	MIDDLE BROOK NEAR GAMBO	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02ZK002	NORTHEAST RIVER NEAR PLACENTIA	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02YO006	PETERS RIVER NEAR BOTWOOD	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02ZH001	PIPERS HOLE RIVER AT MOTHERS BROOK	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02ZG004	RATTLE BROOK NEAR BOAT HARBOUR	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02YL005	RATTLER BROOK NEAR MCIVERS	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02ZG003	SALMONIER RIVER NEAR LAMALINE	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02ZM009	SEAL COVE BROOK NEAR CAPPAHAYDEN	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02YK005	SHEFFIELD BROOK NEAR TRANS CANADA HIGHWAY	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02ZJ003	SHOAL HARBOUR RIVER NEAR CLARENVILLE	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02ZJ001	SOUTHERN BAY RIVER NEAR SOUTHERN BAY	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02YO012	SOUTHWEST BROOK AT LEWISPORTE	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02YM003	SOUTH WEST BROOK NEAR BAIE VERTE	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02YS005	TERRA NOVA RIVER AT GLOVERTOWN	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02YL008	UPPER HUMBER RIVER ABOVE BLACK BROOK	Fed-Prov 3	1.20	0.60	0.60	0	WSC
ACTIVE	02ZM018	VIRGINIA RIVER AT PLEASANTVILLE	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02YS006	NORTHWEST RIVER AT TERRA NOVA NATIONAL PARK	Fed-Prov 3	1.00	0.50	0.50	0	WSC
ACTIVE	02ZM008	WATERFORD RIVER AT KILBRIDE	Fed-Prov 3	1.00	0.50	0.50	0	WSC
	Total Federal – Provincial Newfoundland			29.8	14.9	14.9	0.0	29.0
	Total Federal – Provincial Labrador			0.0	0.0	0.0	0.0	0.0
	Total Federal – Provincial Newfoundland & Labrador			29.8	14.9	14.9	0.0	29.0

PROVINCIAL

ACTIVE	02ZL005	BIG BROOK AT LEAD COVE	Prov 1	1	0	1	0	WSC
ACTIVE	02YK008	BOOT BROOK AT TRANS-CANADA HIGHWAY	Prov 1	1	0	1	0	WSC
ACTIVE	02YL009	CORNER BROOK LAKE AT LAKE OUTLET	Prov 1	0.4	0	0.4	0	WSC
ACTIVE	02YL007	DEER LAKE NEAR GENERATING STATION	Prov 1	0.4	0	0.4	0	WSC
ACTIVE	02YO015	EAST POND BROOK BELOW EAST POND	Prov 2	1	0	1	0	WSC
ACTIVE	02YO014	TRIBUTARY TO GILL'S POND BROOK	Prov 2	1	0	1	0	WSC
ACTIVE	02YK010	GRAND LAKE EAST OF GRAND LAKE BROOK	Prov 1	0.6	0	0.6	0	WSC
ACTIVE	02YO013	EXPLOITS RIVER AT BADGER	Prov 1	1	0	1	0	WSC
ACTIVE	02YO016	EXPLOITS RIVER NEAR MILLERTOWN	Prov 1	1	0	1	0	WSC
ACTIVE	02YO018	EXPLOITS RIVER at Charlie Edwards Point	Prov1	1	0	1	0	WSC
ACTIVE	02YO017	Red Indian Lake at Indian Point	Prov1	0.4	0	0.4	0	WSC
ACTIVE	02ZC004	GRANITE LAKE AT EAST END	Prov2	0.6	0	0.6	0	WSC
ACTIVE	02ZD002	GREY RIVER NEAR GREY RIVER	Prov2	1.2	0	1.2	0	WSC
ACTIVE	02YM004	INDIAN BROOK DIVERSION ABOVE BIRCHY LAKE	Prov 1	1	0	1	0	WSC
ACTIVE	02ZM020	LEARY'S BROOK AT PRINCE PHILIP DRIVE	Prov 1	1	0	1	0	WSC
ACTIVE	02ZK007	RATTLING BROOK BIG POND	Prov2	0.4	0	0.4	0	WSC
ACTIVE	02ZK006	RATTLING BROOK BELOW BRIDGE	Prov2	1	0	1	0	WSC
ACTIVE	02ZK008	Rattling Brook below Plant Discharge	Prov1	1	0	1	0	WSC
ACTIVE	02ZM006	NORTHEAST POND RIVER AT NORTHEAST POND	Prov 1	1	0	1	0	WSC
ACTIVE	02ZM022	RAYMOND BROOK AT OUTLET OF BAY BULLS BIG POND	Prov 1	1	0	1	0	WSC
ACTIVE	02ZJ002	SALMON COVE RIVER NEAR CHAMPNEYS	Prov 1	1	0	1	0	WSC
ACTIVE	02ZL004	SHEARSTOWN BROOK AT SHEARSTOWN	Prov 1	1	0	1	0	WSC
ACTIVE	02YL004	SOUTH BROOK AT PASADENA	Prov 1	1	0	1	0	WSC
ACTIVE	02YL012	Steady Book above Confluence of Humber river	Prov 1	1	0	1	0	WSC
ACTIVE	02ZN002	ST. SHOTTS RIVER NEAR TREPASSEY	Prov 1	1	0	1	0	WSC
ACTIVE	02YN004	STAR BROOK ABOVE STAR LAKE	Prov 2	1.2	0	1.2	0	WSC
ACTIVE	02YR004	TRITON BROOK ABOVE GAMBO POND	Prov 1	1	0	1	0	WSC
ACTIVE	02YN005	VICTORIA LAKE AT NORTHEAST CONTROL STRUCTURE	Prov2	0.6	0	0.6	0	WSC
ACTIVE	02ZD003	R.R. POND NEAR GRANITE LAKE	Prov2	0.6	0	0.6	0	WSC
ACTIVE	02YF002	CAT ARM RESERVOIR NEAR SPILLWAY	Prov2	0.4	0	0.4	0	WSC
ACTIVE	02ZC003	WHITE BEAR RIVER ABOVE BIG INDIAN BROOK	Prov2	0.9	0	0.9	0	WSC
ACTIVE	02ZG006	OUTFLOW OF GREBES NEST POND	Prov2	1.0	0	1.0	0	WSC
ACTIVE	02YO019	Badger Brook Below Foot Bridge	Prov 1	0.4	0	0.4	0	WSC
ACTIVE	02ZG007	OUTFLOW OF UNNAMED POND SOUTH OF LONG POND	Prov2	1.0	0	1.0	0	WSC
ACTIVE	03OC003	ATIKONAK RIVER ABOVE PANCHIA LAKE	Prov2	1.2	0	1.2	0	WSC
ACTIVE	03NE003	CAMP POND AT SOUTHWEST END	Prov 2	0.6	0	0.6	0	WSC
ACTIVE	03NE002	CAMP POND BROOK BELOW CAMP POND	Prov 2	1.2	0	1.2	0	WSC
ACTIVE	03OA012	Luce Brook below Tinto Pond	Prov 2	1.2	0	1.2	0	WSC
ACTIVE	03OA014	Wabush Lake at Dolamite Rd	Prov 2	0.4	0	0.4	0	WSC
ACTIVE	03OA005	Wabush Lake at Lake Outlet	Prov 2	1.2	0	1.2	0	WSC
ACTIVE	03OE011	PINUS RIVER	Prov 1	1.2	0	1.2	0	WSC
ACTIVE	03NE011	REID BROOK Below Tributary	Prov 2	1.2	0	1.2	0	WSC
ACTIVE	03NE001	REID BROOK AT OUTLET OF REID POND	Prov 2	1.2	0	1.2	0	WSC
ACTIVE	03NE012	TRIBUTARY to Reid Brook	Prov 2	1.2	0	1.2	0	WSC
ACTIVE	03OE013	CHURCHILL RIVER ABOVE GRIZZLE RAPIDS	Prov 1	0.6	0	0.6	0	WSC
ACTIVE	03OE014	CHURCHILL RIVER 6.15KMS BELOW MUSKRAT FALLS	Prov 1	1.2	0	1.2	0	WSC
ACTIVE	03PC001	Churchill River at English Point	Prov1	0.6	0	0.6	0	WSC
ACTIVE	03OB007	Elross Creek below Pinette Lake Inflow	Prov2	1.2	0	1.2	0	WSC
ACTIVE	03OA015	Flora Creek below Trans Labrador Highway	Prov 1	1.2	0	1.2	0	WSC
ACTIVE	03OB009	Joan Brook below outlet of Joan Lake	Prov 1	1.2	0	1.2	0	WSC
ACTIVE	03OA016	Dumbell stream above Dumbell Lake	Prov 2	1	0	1	0	WSC
ACTIVE	03OD008	Churchill River Above Churchill Falls Tailrace	Prov 1	1.2	0	1.2	0	WSC
ACTIVE	03OD009	Churchill River below Metchin River	Prov 1	1.2	0	1.2	0	WSC
ACTIVE	03OD010	Churchill River Below Churchill Falls Tailrace	Prov 1	1.2	0	1.2	0	WSC
ACTIVE	03OE017	Mud Lake at outlet tributary at Mud Lake	Prov 1	0.6	0	0.6	0	WSC
ACTIVE	03OA017	Pumphouse Stream above Drum Lake	Prov 2	1	0	1	0	WSC
ACTIVE	03OE019	Churchill River Below Outlet of Traverspine River	Prov 1	0.6	0	0.6	0	WSC
ACTIVE	03OE018	Churchill River at End of Mud Lake Road	Prov 1	0.6	0	0.6	0	WSC
ACTIVE	03PD002	CHURCHILL RIVER OUTLET AT RABBIT ISLAND	Prov 1	0.6	0	0.6	0	WSC
ACTIVE	03OE016	Churchill River at Happy Valley	Prov 1	0.6	0	0.6	0	WSC
	Total Provincial Newfoundland			**29.1**	**0.0**	**29.1**	**0.0**	**34.0**
	Total Provincial Labrador			**25.2**	**0.0**	**25.2**	**0.0**	**26.0**
	Total Provincial Newfoundland & Labrador			**54.3**	**0.0**	**54.3**	**0.0**	**60.0**

	ASHKUI WATER QUALITY SAMPLING SITES							
ACTIVE		CAPE CARIBOU RIVER		0.10	0	0.10	0	WSC
ACTIVE		Dominion Lake		0.10	0	0.10	0	WSC
ACTIVE		Seal Lake Narrows		0.10	0	0.10	0	WSC
ACTIVE		Susan River		0.10	0	0.10	0	WSC
ACTIVE		Wuchusk lake		0.10	0	0.10	0	WSC
ACTIVE		NASKAUPI RIVER BELOW NASKAUPI LAKE		0.10	0	0.10	0	WSC
	Total Water Quality Sampling Sites Labrador			**0.60**	**0.00**	**0.60**	**0.00**	**6.00**

Appendix B SIGNED SCHEDULE D 2022-2023

NEWFOUNDLAND AND LABRADOR 2022-2023

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 2022-2023 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	$163,947	$406,288	$51,920.89	$622,155
b) Streamflow and Water Level Installations - Labrador	$195,410	$238,232	$30,444.52	$464,087
c) Construction/Major Maintenance/Decommissioning	$29,180	$0	$0	$29,180
d) Real Property Credit for Federal stations on Provincial Crown Land	($9,600)	$0	$0	($9,600)
e) Real Time Webcam	($7,350)	$0	$0	($7,350)
f) Weather Stations	($4,305)	$0	$0	($4,305)
g) Shipping costs paid by N.L.	($4,800)	$0	$0	($4,800)
h) Special Project - Height Modernization*	($22,000)	$0	$0	($22,000)
i) Cost Shared Third Party Agreement Management	($7,254)	$0	$0	($7,254)
j) Cost Shared Equipment purchases	($13,502)	$0	$0	($13,502)
TOTAL	$319,726	$644,520	$82,365	$1,046,612

Oct. 28, 2022

Haseen Khan, P.Eng. Date
Director
Water Resources Management Division
Department of Environment and Climate Change
Administrator for Province of Newfoundland and Labrador

Jenkinson, Robert
Digitally signed by Jenkinson, Robert
Date: 2022.11.16 16:44:03 -05'00'

Wayne Jenkinson Date
Executive Director
National Hydrological Service
Meteorological Service of Canada
Environment and Climate Change Canada

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

Appendix C Summary of Cumulative Annual Costs 1975-76 to 2022-2023

SUMMARY OF ACTUAL ANNUAL COSTS AND PAYMENTS
1975-76 TO 2022-2023

												PROVINCIAL	
	SCHEDULE "D" PAYMENTS BY PROVINCE OF NEWFOUNDLAND							ACTUAL PROVINCIAL SHARE				+CREDIT	
YEAR	Hydrometric Op.	Umber River Met Station	Inkind Equipment Purchased by the province	In kind Equipment Credit	SEDIMENT	CONSTR'N	TOTAL	HYDROMET	SEDIMENT	CONSTR'N	TOTAL	-DEBIT	Curent Balance
1975-76	$ 37,800				$ -	$ 3,600	$ 41,400	$ 36,238	$ -	$ 2,177	$ 38,415	$ 2,985	$ 2,985.00
1976-77	$ 32,340				$ -	$ 12,000	$ 44,340	$ 37,840	$ -	$ 1,573	$ 39,413	$ 4,927	$ 7,912.00
1977-78	$ 35,520				$ -	$ 24,480	$ 60,000	$ 38,700	$ -	$ 13,963	$ 52,663	$ 7,337	$ 15,249.00
1978-79	$ 56,775				$ 1,400	$ 11,825	$ 70,000	$ 51,371	$ 679	$ 26,000	$ 78,050	-$ 8,050	$ 7,199.00
1979-80	$ 68,338				$ 933	$ 25,729	$ 95,000	$ 62,256	$ 896	$ 22,476	$ 85,628	$ 9,372	$ 16,571.00
1980-81	$ 78,639				$ 1,475	$ 6,000	$ 86,114	$ 83,518	$ 1,064	$ 7,703	$ 92,285	-$ 6,171	$ 10,400.00
1981-82	$ 83,523				$ 3,750	$ 14,000	$ 101,273	$ 100,726	$ 3,114	$ 16,560	$ 120,400	-$ 19,127	-$ 8,727.00
1982-83	$ 96,542				$ 3,744	$ 55,000	$ 155,286	$ 102,735	$ 5,886	$ 47,224	$ 155,845	-$ 559	-$ 9,286.00
1983-84	$ 141,457				$ 4,470	$ 38,000	$ 183,927	$ 136,917	$ 6,906	$ 37,864	$ 181,687	$ 2,240	-$ 7,046.00
1984-85	$ 168,244				$ 7,350	$ 52,000	$ 227,594	$ 168,247	$ 5,295	$ 48,662	$ 222,204	$ 5,390	-$ 1,656.00
1985-86	$ 195,563				$ 7,650	$ 36,787	$ 240,000	$ 191,580	$ 6,324	$ 39,203	$ 237,107	$ 2,893	$ 1,237.00
1986-87	$ 211,706				$ 6,975	$ 34,641	$ 253,322	$ 222,843	$ 4,413	$ 35,136	$ 262,392	-$ 9,070	-$ 7,833.00
1987-88	$ 213,634				$ 6,975	$ 42,000	$ 262,609	$ 220,934	$ 3,597	$ 47,957	$ 272,488	-$ 9,879	-$ 17,712.00
1988-89	$ 245,221				$ 6,300	$ 15,000	$ 266,521	$ 237,249	$ 4,683	$ 16,148	$ 258,080	$ 8,441	-$ 9,271.00
1989-90	$ 253,392				$ 5,173	$ 30,000	$ 288,565	$ 274,004	$ 5,571	$ 21,264	$ 300,839	-$ 12,274	-$ 21,545.00
1990-91	$ 260,691				$ 5,925	$ -	$ 266,616	$ 266,058	$ 4,809	$ 2,532	$ 273,399	-$ 6,783	-$ 28,328.00
1991-92	$ 264,591				$ 6,450	$ -	$ 271,041	$ 234,222	$ 5,649	$ -	$ 239,871	$ 31,170	$ 2,842.00
1992-93	$ 276,655	-$ 3,173			$ 3,825	$ -	$ 277,307	$ 254,430	$ 4,713	$ -	$ 259,143	$ 18,164	$ 21,006.00
1993-94	$ 274,156	-$ 3,173			$ 3,700	$ 21,000	$ 295,683	$ 276,163	$ 3,505	$ 20,496	$ 300,164	-$ 4,481	$ 16,525.00
1994-95	$ 303,700	-$ 8,200			$ 3,200	$ -	$ 298,700	$ 288,835	$ 3,220	$ -	$ 292,055	$ 6,645	$ 23,170.00
1995-96	$ 310,272	-$ 16,232			$ 1,375	$ -	$ 295,415	$ 292,860	$ 1,180	$ -	$ 294,040	$ 1,375	$ 24,545.00
1996-97	$ 236,427	-$ 6,784			$ -	$ -	$ 229,643	$ 229,643	$ -	$ -	$ 229,643	$ -	$ 24,545.00
1997-98	$ 172,334	-$ 5,165			$ -	$ -	$ 167,169	$ 175,042			$ 175,042	-$ 7,873	$ 16,672.00
1998-99	$ 151,439	-$ 4,808			$ -	$ -	$ 146,631	$ 154,159	$ -	$ -	$ 154,159	-$ 7,528	$ 9,144.24
1998-99		Adjustment credit to modernization				$ -		$ -	$ -	$ -		-$ 24,677	-$ 15,532.76
1999-00	$ 147,934	-$ 4,686			$ -	$ -	$ 143,248	$ 152,829	$ -	$ -	$ 152,829	-$ 9,581	-$ 25,113.89
2000-01	$ 165,270	-$ 5,231			$ -	$ -	$ 160,039	$ 158,561	$ -	$ -	$ 158,561	$1,477.67	-$ 23,636.22
2001-02	$ 166,997	-$ 5,119			$ -	$ -	$ 161,878	$ 158,634	$ -	$ -	$ 158,634	$3,244.05	-$ 20,392.17
2002-03	$ 172,639	-$ 5,369			$ -	$ -	$ 167,270	$ 169,865	$ -	$ -	$ 169,865	-$2,595.38	-$ 22,987.55
2003-04	$ 178,699	-$ 4,924			$ -	$ -	$ 173,775	$ 175,735	$ -	$ -	$ 175,735	-$1,960.00	-$ 24,947.55
2004-05	$ 420,834	-$ 5,395			$ -	$ -	$ 415,439	$ 407,849	$ -	$ -	$ 407,849	$7,590.00	-$ 17,357.55
2005-06	$ 425,082	-$ 5,395	$ 5,077	$ 1,523	$ -	$ -	$ 421,210	$ 393,104	$ -	$ -	$ 393,104	$28,105.88	$ 10,748.33
2006-07	$ 477,365	-$ 5,395	$ 20,400	$ 6,120	$ -	$ 1,500	$ 479,590	$ 445,337	$ -	$ 1,144	$ 446,481	$33,108.73	$ 43,857.06
2007-08	$ 548,813	-$ 6,697	$ 67,600	$ 20,280	$ -	$ 1,368	$ 563,764	$ 537,469	$ -	$ 3,663	$ 541,131	$22,632.70	$ 66,489.75
2008-09	$ 605,612	-$ 8,258	$ 56,400	$ 16,900	$ -	$ 14,404	$ 628,658	$ 622,512	$ -	$ 8,998	$ 631,510	-$2,852.00	$ 63,637.75
2009-10	$ 647,777	-$ 8,125	$ 11,000	$ 3,300	$ -	$ 20,500	$ 663,452	$ 669,641	$ -	$ 21,068	$ 690,709	-$27,257.00	$ 36,380.75
2010-11	$ 677,540	-$ 8,110	$ 35,663	$ 10,699	$ -	$ 15,000	$ 695,129	$ 692,904	$ -	$ 34,502	$ 727,406	-$32,277.00	$ 4,103.75
2011-12	$ 694,839	$ 9,291	$ 57,837	$ 17,351			$ 721,481	$ 826,078			$ 826,078	-$104,597.00	-$ 100,493.25
2012-13	$ 806,826	-$ 9,983	$ 18,040	$ 5,412			$ 802,255	$ 804,546			$ 804,546	-$2,291.00	-$ 102,784.25
2013-14	$ 832,689	-$ 9,983	$ 16,821	$ 5,046			$ 827,752	$ 806,657			$ 806,657	$21,095.30	-$ 81,688.95
2014-15	$ 861,167	-$ 10,133	$ 44,046	$ 13,214			$ 864,248	$ 806,396			$ 806,396	$57,851.80	-$ 23,837.15
2015-16	$ 803,974	-$ 10,133	$ 3,343	$ 1,003			$ 794,844	$ 785,933			$ 785,933	$8,911.00	-$ 14,926.15
2016-17	$ 750,644	-$ 10,133	$ 15,551	$ 4,665			$ 745,176	$ 817,843			$ 817,843	-$72,666.70	-$ 87,592.84
2017-18	$ 987,293	-$ 10,133	$ 9,255	$ 2,777			$ 979,937	$ 929,538			$ 929,538	$50,398.50	-$ 37,194.34
2018-19	$ 981,142		$ 18,594	$ 5,578			$ 986,720	$ 988,310			$ 988,310	-$1,589.80	-$ 38,784.15
2019-20	$ 977,768		$ 20,437	$ 6,131			$ 983,899	$ 1,001,763			$ 1,001,763	-$17,863.90	-$ 56,648.05
2020-21	$ 975,240		$ 39,509	$ 11,853			$ 987,093	$ 934,810			$ 934,810	$52,282.70	-$ 4,365.35
2021-22	$ 999,226		$ 43,554	$ 13,066			$ 1,012,292	$ 1,040,083			$ 1,040,083	-$27,791.00	-$ 32,156.35
2022-23	$ 1,017,431					$ 29,180	$ 1,046,611	$ 1,021,690		$ 27,462	$ 1,049,152	-$2,541.00	-$ 34,697.35
											Net total		-$ 34,697.35
NOTES.	A positive net total indicates funds owed to the Province.												

APPENDIX D

ATLANTIC REGION INFRASTRUCTURE REPORT 2022-23

Environment and Climate Change Canada
Environnement et Changement climatique Canada
Canada

Hydrometric Infrastructure and Construction in Atlantic Canada

Project Summary Report 2022 - 2023

Prepared for: Internal Use and Provincial Partners

Prepared by:

Environment and Climate Change Canada (ECCC), National Hydrological Service,

Science and Engineering Services

Infrastructure and Construction

Prepared on:

April 29, 2024

Table of Contents

1. Introduction

This report provides a summary of the infrastructure and construction projects that were initiated and/or completed in Atlantic Canada in 2022 – 2023. Projects were selected based on their alignment with priorities for Treasury Board infrastructure renewal spending. Where possible, an approach was taken to renew stations that have multiple Treasury Board eligible issues. Efforts were made to group similar projects together to reduce overall project costs. These Treasury Board priorities include the following:

- Decommission inactive cableways;
- Retrofit cableways where they are still needed;
- Assess and remediate/risk assess environmental liabilities (e.g., creosote, total petroleum hydrocarbons (PHC), mercury, lead);
- Replace/repair shelters that are in unsafe/unusable condition; and
- Decommission inactive wells with shelters in poor condition.

1.1. Environmental Liabilities

Federal funding for contaminated sites may be leveraged for our stations through the Federal Contaminated Site Action Program (FCSAP). National Contaminated Sites Classification System (NCSCS) scoring is required for each candidate station to be able to access this funding. This funding may be used beyond the planning horizon of the Treasury Board renewal funds to help tackle outstanding environmental contamination in the longer term.

2. New Brunswick

2.1. Salmon River at Castaway (01AN002)

Work was done on this site to decommission the cableway on private residential property. This was completed by procuring the services of a demolition contractor. Figure 1 shows the cableway and Figure 2 shows the site after decommissioning. The construction debris was removed and disposed of according to provincial regulations. This decommissioning work was conducted on October 27, 2022.

Figure 1. Cableway at 01AN002 Salmon River at Castaway (Photograph taken October 27, 2022).

Figure 2. Decommissioned cableway at 01AN002 Salmon River at Castaway (Photograph taken October 22, 2022).

2.2. Parlee Brook below Arnolds Bridge (01AP009)

This station was inactive and had a stilling well that required environmental assessment to prepare the site for decommissioning. Public Services and Procurement Canada (PSPC) were used to hire an environmental consultant to conduct a Phase II Environmental Site Assessment (ESA) and to obtain the NCSCS score. Figure 3 shows the former gauge house and stilling well. An ESA report was produced March 27, 2023. The results of the report indicated that the site was not contaminated; however, the painted materials required special handling at the time of disposal.

Figure 3. Steel walk-in shelter and stilling well located at 01AP009 Parlee Brook below Arnolds Bridge (Photograph taken September 2, 2022).

2.3. Big Tracadie River at Murchy Bridge Crossing (01BL003)

Figures 4 and 5 show the station has a stilling well and an inactive cableway and required a Phase II ESA to prepare for decommissioning of the infrastructure. PSPC were used to retain an environmental consultant to conduct the ESA and obtain an NCSCS score. An ESA report was produced on March 24, 2023. The results of the report indicated that the site is eligible for FCSAP funding (class 3) and requires remediation.

Figure 4. Stilling well structure as viewed from south side of river.

Figure 5. Cable cart landing platform, looking south with river in background.

2.4. Petitcodiac River near Petitcodiac (01BU002)

Figure 6 shows the station has a stilling well that was damaged by ice and required a Phase II ESA to prepare for decommissioning of the infrastructure. PSPC were used to retain an environmental consultant to conduct the ESA and obtain an NCSCS score. An ESA report was produced on March 27, 2023. The results of the report indicated that the site was not contaminated; however, the well water required special handling and disposal at the time of decommissioning.

Figure 6. Damaged stilling well at 01BU002 Petitcodiac River near Petitcodiac (Photograph taken March 16, 2022).

3. Nova Scotia

3.1. Kelley River (Mill Creek) At Eight Mile Ford (01DL001)

Work was done at this station to decommission the stilling well in accordance with Nova Scotia Guidelines. Figure 7 shows the shelter and A-frame of the cableway as of 2020. There was lead paint located on the sides of the shelter as well as petroleum hydrocarbons in the sediment at the bottom of the well. The cableway and stilling well were decommissioned on September 12 – 13th, 2022 (Figures 8 - 10). The site access road had to be improved to access the site with equipment. The site access road improvement re-grading was done at the request of ECCC by the Nova Scotia Department of Natural Resources and Renewables. Permitting was required for this project including a Technical Review by Department of Fisheries and Oceans and a Water Approval Permit with the Nova Scotia department of Environment and Climate Change. A new look-in shelter was installed on the right bank as shown in Figure 11.

Figure 7. Shelter and an A-frame of the cableway on the left bank at 01DL001 (photograph taken July 22, 2020).

Figure 8. Pumping out the stilling well (photograph taken September 13, 2022).

Figure 9. View looking west at site post-decommissioning (Photograph taken on September 13, 2022).

Figure 10. View looking west of the former stilling well and gauge house location (photograph taken September 13, 2022).

Figure 11. New look-in shelter on the right bank on the former cableway pedestal footing (Photograph taken December 21, 2022).

3.2. MacAskills Brook near Birch Grove (01FJ002)

This station had an inactive stilling well in poor condition in need of lifecycle replacement. To facilitate this work, a Phase II ESA and NCSCS score was required. PSPC was used to retain the services of an environmental consultant to conduct the ESA work. Figure 12 shows the walk-in shelter and stilling well which required decommissioning. The ESA report was completed on March 27, 2023. The results of the report indicated that the site was not contaminated; however, the well water required special handling and disposal at the time of decommissioning.

Figure 12. Stilling well and walk-in shelter at 01FJ002 MacAskills Brook near Birch Grove (Photograph taken November 20, 2023).

4. Newfoundland and Labrador

4.1. Torrent River at Bristol's Pool (02YC001)

This station had a pressure treated cableway and an inactive wooden dog house style shelter and metal stilling well which required decommissioning (Figures 13 and 14). The services of PSPC were acquired to facilitate this work with their environmental consultants and contractors. This site was confirmed to have well water contaminated with PHCs and soil contaminated with PAHs. The wooden shelter also contained lead paint which required abatement. The stilling well and shelter and cableway were decommissioned between June 15 and 16, 2022 (Figures 15 and 16). The final environmental report was received February 17, 2023.

Figure 13. View of cableway from left bank prior to decommissioning (Photograph taken July 15, 2019).

Figure 14. View of the inactive stilling well and shelter and creosote timber cribbing prior to decommissioning (Photograph taken July 15, 2019).

Figure 15. View during the removal of the petroleum hydrocarbon (PHC) impacted soil from near the stilling well (Photograph taken June 15, 2022).

Figure 16. View following reinstatement of the former shelter/stilling well area with a biodegradable erosion control blanket (Photograph taken June 20, 2022).

4.2. Upper Humber River near Reidville (02YL001)

The station had a wooden site access staircase, creosote treated timber cableway and creosote timber stilling well that required decommissioning and remediation (Figures 17 - 19). The services of PSPC were acquired to facilitate this work with their environmental consultants and contractors. This site was confirmed to have well water contaminated with petroleum hydrocarbons and soil contaminated with PAHs. The infrastructure was decommissioned, and surrounding soil remediated between September 20 and October 22, 2022 (Figures 20 - 21). A new aluminum tilting mast style look-in shelter was installed, and the site access trail improved (Figures 22 and 23). The final environmental report was received March 27, 2023.

Figure 17. View of the former creosote timber cableway prior to decommission (Photograph taken July 16, 2019).

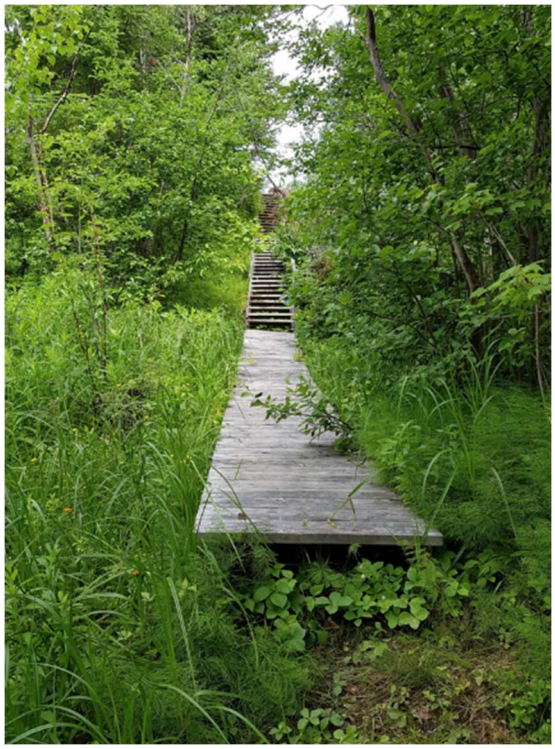


Figure 18. Former site access stairs that were decommissioned (Photograph taken July 16, 2019).

Figure 19. Former wooden walk-in shelter above the creosote stave stilling well prior to decommissioning (Photograph taken July 16, 2019).

Figure 20. View during the removal of the creosote-treated stilling well, wooden shelter, and impacted soil adjacent to the stilling well on October 12, 2022.

Figure 21. View during the removal of the petroleum hydrocarbon (PHC) and PAH impacted groundwater from the stilling well on October 12, 2022.

Figure 22. View showing the new gravel trailway down to the new hydrometric station (new tilt mast and concrete pad) following reinstatement in October 2022.

Figure 23. View of the new aluminum tilting mast style look-in shelter on a concrete pad (Photograph taken October 24, 2022).

4.3. Indian Bay Brook near Northeast Arm (02YR003)

This station had an inactive stilling well with a wooden walk-in shelter in poor condition requiring a Phase II ESA and NCSCS scoring to prepare for lifecycle replacement. PSPC was used to retain the services of an environmental consultant to assess the site. The site formerly had a creosote timber cableway as well and the soil in the vicinity of the footings required assessment for PAHs (Figure 24). Figure 25 shows the former stilling well and wooden walk-in shelter. The environmental assessment report was received on March 30, 2023. The findings of the report indicated that the soil around the shelter and former cableway were contaminated with PAHs. In addition, PHCs were determined to be present inside the stilling well and would require re-sampling prior to decommissioning. The site was found to be eligible for FCSAP remediation funding (class 2 site).

Figure 24. Creosote timber footing of the former cableway (Photograph taken September 16, 2022).

Figure 25. Wooden walk-in shelter and stilling well to be decommissioned (Photograph taken September 16, 2022).