



*Lake Champlain – Richelieu River
International Study Board
Semi-Annual Report
9 October 2020*

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INTERNATIONAL LAKE CHAMPLAIN – RICHELIEU RIVER STUDY BOARD

Commissioners:

The International Lake Champlain-Richelieu River Study Board submits herein its Semi-annual Progress Report, covering activities from April 2020 to September 2020.

1 EXECUTIVE SUMMARY

While the ongoing COVID-19 pandemic continues to pose significant challenges to the operations of a binational Study, the Lake Champlain – Richelieu River Study achieved notable milestones during the April 1 – September 30 reference period. Several critical outreach events were held over this period, including informational webinars and discussion sessions with elected officials in both the US and Canada that included representatives from federal, state/provincial governments, and municipalities. Additionally, the public meetings which were originally planned for May were replaced by webinars in French and English held in the morning and the evening, which were very well attended. Other significant accomplishments during this period include:

- A workshop with Canadian emergency responders which was postponed due to COVID was held as a webinar on June 16th and 18th.
- Considerable progress in the modeling (efficacy and limits) of the Chambly Canal diversion (Theme 1), the most promising structural solution to mitigate flooding in the Lake Champlain and along the Richelieu River.
- Advances in the design and supporting operational plan of the Chambly Canal Diversion with the input of Parks Canada and Service and Procurement Canada’s professionals.
- The production of important informational and outreach materials, including 4 videos released in advance of the Public Meetings ([Causes and Impacts](#), [Flooding Myths](#), [Storing Flood Waters](#), and [Structural Mitigation measures in the Richelieu River](#)), a [factsheet on the Chambly Canal](#), and 2 issues of the Study newsletter, [The Current](#).
- The completion of technical review by the Study’s Independent Review Group (IRG) of a major report on “Potential Structural Solutions to Mitigate Flooding in the Lake Champlain – Richelieu River Basin” (Theme 1).
- Substantial advances in modeling hydraulic impacts downstream of the Saint-Jean Shoal.
- Implementation of a set of Performance Indicators (PIs) for the built environment, agriculture, and environmental factors.
- NOAA updated and refined its demonstration website, <https://www.glerl.noaa.gov/res/champlain/>, with real-time model predictions from the FVCOM hydrodynamic model and the WAVEWATCH III wave model.
- Completion of the report on social network analysis (Canada).
- Meetings with representatives from the Waban-Aki and Mohawk communities to provide information about Study progress.
- The selection of a technical writer to assist with the production and publication of major Study reports.

Despite these achievements, continued restrictions on activities including field work and in-person meetings have created delays that still impede the Study as we approach the final year of this reference. For instance, although the virtual public meetings were all well attended, the webinar format with its limited two-way conversation does not facilitate efficient feedback, nor the usual side conversations before or after in-person meetings, which makes it difficult to entice interest in the Study from new stakeholders. Should the pandemic last up to the end of the Study, the Board will have to be even more creative in the means deployed to reach out to stakeholders and still maintain a good opinion reading. Additionally, there has been difficulty engaging emergency responders on the US side as planned, as their attention continues to be monopolized by issues related to COVID-19.

Beyond the impact of the pandemic, the Study Board has identified several key issues facing the Study as we enter the final phase of our work which we would appreciate consideration and guidance from the Commissioners on. These challenges include:

- The need for ongoing bi-national governance: Several products of the Study will require ongoing cooperation between the governments to address, including enhancing the coordinated binational flood forecast guidance, and operating the Chambly Canal diversion (if recommended). This Study has laid the groundwork for a bi-national system, but additional coordination work between government agencies will be necessary to ensure that these efforts continue beyond the Study.
- Water quality: While addressing water quality concerns is not under the scope of this reference, water quality is often a more pressing concern than flooding for stakeholders in the Lake Champlain – Richelieu River (LCRR) basin, particularly in the US. How can this Study integrate water quality concerns?
- The Chambly Canal diversion and Article IV: If the Chambly Canal diversion is recommended, Article IV of the Treaty may apply to its implementation.

Article IV

The High Contracting Parties agree that, except in cases provided for by special agreement between them, they will not permit the construction or maintenance on their respective sides of the boundary of any remedial or protective works or any dams or other obstructions in waters flowing from boundary waters or in waters at a lower level than the boundary in rivers flowing across the boundary, the effect of which is to raise the natural level of waters on the other side of the boundary unless the construction or maintenance thereof is approved by the aforesaid International Joint Commission.

It is further agreed that the waters herein defined as boundary waters and waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other.

Study funding is in alignment with the mid-study revised work plan. US funding in FY21 will be critical for completing the Study including US performance indicator coding, independent technical review, and report editing and publication. Ensuring that the US receives timely funding under the continuing resolution is essential for completing tasks on time.

2 ***BOARD and WORKING GROUP ACTIVITIES***

2.1 ***Hydrology, Hydraulics and Mapping Technical Working Group (HHM TWG)***

2.1.1 ***Summary of Activities:***

- High resolution 2D hydrodynamic models of the lake/upper river, St-Jean shoal and lower river portions were refined, updated and are being used in ISEE and on mitigation solution assessment. Lower river hydrodynamic models were adapted to account for the significant influence of the St. Lawrence River level on the Chambly Basin flooding.
- For use in ISEE, 40 static hydrodynamic scenarios representing current conditions in the lake/upper river were implemented in ISEE. For the lower river, 40 scenarios were produced for three St. Lawrence River levels (low, mid and high) at Sorel for a total of 120 static scenarios.
- Numerous mitigation solutions (Theme 1) were tested with specialized hydrodynamic simulations on the St-Jean Shoal model. Most of this work was related to the diversion through the Chambly Canal. This solution has been hydraulically optimized to divert as much water as possible. This first version of the solution has been used to produce 40 static scenarios for ISEE in order to obtain a first cost-benefit analysis with ISEE calculations.
- The Water Balance Model (WBM) has been modified and adapted to run on a daily time step in order to facilitate a simple version of a regulation plan for the diversion and to help the analysis of Theme 2 effects on the Richelieu River maximum discharge. Several approaches were tested for an historical daily Net Basin Supply (NBS) series. A daily series from 1924 to 2017 has been produced and is currently being used.
- Important effort has been invested in the calibration and validation of the Canadian National Surface and River Prediction system for forecasting the hydrology of the Lake Champlain-Richelieu River basin. This system integrates several components that aim at producing reliable deterministic hydrological forecasts twice daily 6-days in advance. Detailed time series were also produced for the 2011 event (hydrology and meteorology). An ensemble version of the forecast system is also in development.
- NOAA and its partners conducted a meteorological forecast skill assessment versus wind measurements. All models underestimated wind speed with smallest negative bias in HRRRx model (under 0.5 m/s) and largest in GFS weather model (under 2 m/s). An update to using HRRRx soon is likely to improve accuracy of storm surges and wave height.
- An analysis based on wave height and wind observations (speed and direction) in the Main Lake collected by Lake Champlain Transportation Company ferry captains in 1993 and 2004 was conducted. The largest waves (up to 3 m) were observed during northerly and southerly winds of about 20 m/s. In addition, Inland Sea buoy wave data (2013-2019) showed maximum wave heights up to 3 m as well.
- The WAVEWATCH III model of Lake Champlain was tested, determined to be robust, and consistent with model observations. The model was configured to produce automated real-time output. These results were ported to an experimental website which displays plots of predicted wave conditions.
- A validation of the current operational National Water Model version 2.0 and the version with the Lake Champlain upgrade, version 2.1, based on a 2016-2018 hindcast. Analysis

showed that version 2.1 is overall better than 2.0 and closer to observations. Finally, lake outflow in 2.1 is modeled more realistically: in 2.0 outflow mimics total inflow.

- The NOAA demonstration website, <https://www.glerl.noaa.gov/res/champlain/>, was updated and refined with real-time model predictions from the FVCOM hydrodynamic model and the WAVEWATCH III wave model.
- A white paper on binational forecast on hydrology and flood mapping and its governance is currently being drafted.

2.2 *Flood Management and Mitigation Measures Technical Working Group (FMMM TWG)*

2.2.1 Summary of Activities

- FMMM developed Terms of Reference for a Technical Collaboration Group with Parks Canada to develop and assess the Chambly Canal diversion (Theme 1). Regular video conferences are being held with the group to guide the work. FMMM is working closely with HHM in the modelling and refining the design of the diversion.
- The Theme 2 report that looks at wetland development and flooding of agricultural land to mitigate flooding is being completed by the contractor, Dr. Alain Rousseau (INRS).
- FMMM is working with the emergency responders on the US side to conduct Theme 3 workshops like those that were done in Canada this past winter. There continue to be challenges setting up these workshops as the emergency responders are still primarily focused on the COVID 19 issue.
- FMMM is in discussions with Ouranos (Quebec Climate Change consortium) to provide their expertise to help in the formulation of the recommendations for Theme 4, which focuses on floodplain management.
- FMMM continues to develop the Collaborative Decision Support Tool (CDST) that integrates the results from the Integrated Socio Economic and Environmental (ISEE) system. Work is ongoing to complete the stage-damage curve for the US side, which is behind schedule and a critical PI.
- FMMM has put together a team of experts to assess climate change and climate decision scaling. Contracts have been put in place for the external experts. One video conference has been held with the team.

2.3 *Resource Response Technical Working Group (RR TWG)*

2.3.1 Summary of Activities

Iterative review of Performance Indicators (PIs):

- Improvement and implementation of a set of built environment, agricultural, and environmental PIs with RR TWG members;
- Facilitation of development of and implementation of various economic and social performance indicators with the SPE TWG, such as damages to commercial, industrial, and recreational buildings, public infrastructures, and socio-sanitary impacts. Collaboration on integration of the economic analysis in the overall workflow;
- Facilitation of development of performance indicators addressing indigenous concerns, such as impacts on specific sites and habitat of various plant and animal species of interest.

Continued development of PIs:

- Acquisition of calibration data for PI development: substrate surveys completed at St-Ours and Chambly Rapids, functioning parameters for the locks and the fish passage, etc.;
- Literature review and expert consultation for environmental PIs such as Copper Redhorse, Least Bittern, and Northern Pike;
- Literature review and consultation of the indigenous communities and experts for PIs addressing indigenous concerns: access to ritual or social activity sites, erosion of archeological sites, habitat of sweetgrass and black ash.

Continued development of an integrated modeling platform (ISEE):

- Integration of new database (ex: dikes distribution) and algorithms into ISEE (ex: hydrodynamic model downstream St-Ours);
- Coding of damages to commercial, industrial, and recreational buildings and damages to public infrastructures in Canada;
- Initiated coding the secondary impacts to residential buildings (ex: cleaning cost), damages to agricultural buildings, socio-sanitary impacts, spawning habitat model of Copper Redhorse and Northern Pike in Canada.

2.4 Social, Political and Economic Analysis Group (SPE AG)

2.4.1 Summary of Activities

- Survey results from the US-Household Risk Perception Survey were prepared. In Canada, the data collection has started for the Household Risk Perception Survey and analyses will begin at the end of October.
- Participation in the planning and preparation of the presentation for the US and Canadian Political Entities meetings.
- First draft of Task 8 (governance analysis) document (US) has been prepared and is being revised to provide greater connection to Task 9 (assessment of political acceptability).
- Social network analysis and qualitative data analysis was completed on the Canadian side, resulting in the production of four documents: 1) preliminary results about political acceptability in April (SPE 8), 2) preliminary results of the Social Network analysis - transmitted in June 2020 (SPE 8 and 9), 3) Report *Social Network Analysis and Political feasibility* (SPE 8 and 9) on July, and 4) briefing note about political feasibility in August regarding the public meetings.
- The development of social, political, economic, and public health indicators is almost completed in Canada and work is progressing in the United States. The Canadian team shared its methodologies, guides, and tools to facilitate the integration in ISEE and comparability. (SPE 6 and 10).
- Cost-benefit analysis has been started for Theme 1 with additional analyses. The necessary methodological tools have been developed and the sensitivity tests were carried out. (SPE 10).
- Planning started to produce two final reports: one specific on the economic analysis and an integrative SPE report.

2.5 Public Advisory Group (PAG)

2.5.1 Summary of Activities

PAG Membership

Steven Peters was approved by the Commissioners to fill the open US PAG seat this summer. As a former community leader in both Plattsburgh (during the 2011 floods) and Rouses Point, NY, which both experienced flooding during the 2011 event and at other times, Mr. Peters brings to the PAG his expertise in understanding community needs and challenges during flooding, and in planning and implementing responses to a variety of types of impacts that communities face at such times (e.g., financial, environmental).

PAG Meetings

A PAG meeting was held on August 26, 2020 via Teams. During the webinar, PAG members were shown the draft presentation for the September virtual public meetings as well as drafts of the 4 videos being produced about the Study. Constructive advice was provided on visuals, messaging and key issues for stakeholders and the public. An update was also provided on communication products being developed for this event (postcard, save the date, promos on LCRR website, registration site, social media, advertisements).

Work with Indigenous people and IP engagement sub-group

An update of the work plan to engage with Indigenous People as well as a summary of achievements to date was presented to the Study Board on May 26th. The work plan and budget were approved on June 23rd. Part of the work involved gathering further information on archeological sites near a proposed structural mitigation measure and the development of three performance indicators (PI). The LCRR subgroup on Indigenous people engagement met on May 11th to develop the material for the presentation to the Study Board and agree on next steps.

An annex to the MOU with the Grand Conseil de la Nation Waban-Aki was signed to undertake this work with the Waban-Aki and the Mohawks. A series of three meetings were also carried out to inform the Waban-Aki (June 25th), Chief Don Stevens (July 16th) and the Mohawk Council of Kahnawake (July 29th) of study progress and continue the conversation with them. Invitations to each of these indigenous groups were sent to invite their participation and that of others within each group in the public meetings at the end of September. The Resource Response TWG has completed the work on the Wild Rice PI (in Lake Champlain) and the Muskrat PI (in Lake Champlain) They are working on several other environmental indicators (Pike, wetland succession) that may be of interest to Indigenous people.

As mentioned earlier, the Resource Response ISEE team met with the Waban-Aki on May 7th and August 24th to pursue discussions on the development of Performance Indicators.

Special Planning committee for the 2020 Public meetings

After the cancellation of the May 5-7 face-to-face public meetings in Quebec, Vermont and New York, the committee did not meet for several weeks pending a decision by the Study Board. Regular monthly meetings resumed on May 19th to prepare virtual online public meetings in September 2020. The Committee was responsible for both the logistics and communication products for the meetings as well as the shape/format and scientific content of them. The US

PAG Co-Lead and the US Outreach Coordinator worked to ensure that the LCRR presentation was user friendly considering the new format being used for the public meetings. As part of this group, the PAG co-chairs reviewed the save the date, draft registration site, social media posting and postcard to announce the public meetings.

The Canadian PAG Co-Chair also started the planning for a series of technical webinars for the public to be held this fall. The webinars will allow study technical experts to go into greater detail on study results than what is possible during a public meeting.

Public Meetings September 29 and 30, 2020

Virtual public meetings were held in French on Tuesday September 29 at 10 am and 7 pm and in English on September 30 at the same times. The same content was shared during each webinar. The Canadian co-chair presented during the French language meetings and the US co-chair presented during the English language sessions. They were supported by the Canadian and US Outreach Managers, Secretariats, PAG co-leads, PAG members, and other IJC staff and Study members.

In the four meetings, 144 members of the public participated (98 attended the French language sessions and 46 attended the English language sessions). In addition, on average, 28 Study members participated in each of the public meetings. Questions from the public ranged across a variety of topics, and included an interest by the public to understand what they as riparian or lakeshore homeowners could do to mitigate future flooding impacts, how mitigation measures being considered might benefit certain shoreline locations, the anticipated timeframe for any of the mitigated measures might be implemented following the completion of the study, and the potential for utilizing farmlands alongside the Richelieu River for temporary storage (as compared to land alongside tributaries to Lake Champlain). A poll was implemented in each public meeting to gauge interest of the public in topics for a proposed suite of technical webinars to be held later this fall. Of 61 people who completed the poll, the highest percent (75%) expressed interest in the technical webinar to be focused on floodplain management.

Other activities and meetings

PAG co-chairs also worked on various other products such as writing items for [The Current](#), newsletter (May 29 and August 17 issues), arranging for printing of the [Causes and Impacts report](#) in English and French and delivery to lakeshore libraries in the US, and finalizing the [Chambly Canal factsheet](#) (posted in July 2020). The US PAG co-chair was also the lead for the development of a series of four videos for the public meetings:

- [Understanding the Lake Champlain – Richelieu River Basin and Flooding](#)
- [Causes and Impacts](#)
- [Flooding Myths](#)
- [Storing Flood Waters](#)
- [Structural Mitigation measures in the Richelieu River](#)

PAG co-chairs also reviewed two articles that were published in the May issue of the IJC's transboundary watersheds newsletter, Water Matters: "Lake Champlain – Richelieu River Studies Causes of Floods to Help Lessen Future Damages," and "Experts Help Study Board Plan for Future Floods in the Champlain-Richelieu Basin." The US PAG co-chair was also

interviewed for an IJC newsletter article about the importance of working with Indigenous people and incorporating Indigenous Knowledge in water management.

PAG co-chairs also regularly attended Study Board meetings, monthly Communication and Outreach Group meetings, monthly TWG calls, and attended the online workshop on flood responses (June 16, 18; Canada) and webinars with US political entities and elected officials (August 24, 25). They have also reviewed several key study reports and provided an update of PAG activities for the spring semi-annual report to the IJC.

Work Anticipated Over Next Three Months

- As Study Board members, PAG co-chairs are expecting to regularly discuss key decisions and path forward for the study over the next three months.
- Planning for upcoming technical webinars for the public. Results from September's public meetings will help guide the group in developing this series of webinars.
- Contributing to the plan for developing communications products for upcoming study milestones (i.e., reports, webinars, and meetings).

2.6 Communications Working Group (CWG)

2.6.1 Summary of activities

The Communications Working Group (CWG) has adapted its communications during the pandemic, with its related restrictions, relying upon electronic communications and virtual meetings to ensure the work of the study board is relayed to the key constituencies and the general public.

The IJC Communications Liaison posted the new videos to the LCRR website on September 21 in advance of the September virtual public meetings so that participants could come to the meetings with this information in mind. The videos cover the topics: demystifying myths about flooding; recapping the key findings of the Causes & Impacts Report; reviewing moderate structural riverine alternatives (Theme 1); and examining water storage options (Theme 2).

The CWG members, along with key members from other technical working groups were part of the public meeting planning committee. The committee met regularly (electronically) to prepare for the virtual public meetings on September 29 and 30.

The CWG also continues to assist the PAG to develop communications products in preparation for public meetings and webinars, and to keep the LCRR website up to date with updated content and events.

2.7 Outreach Working Group

2.7.1 Summary of activities

Public and community outreach regarding the study has continued via the bimonthly newsletter, [The Current](#) with issues in May, August, and a scheduled October issue, as well as virtual public meetings in both French and English. In Canada, a virtual workshop on Theme 3 was held on

June 16 & 18, while in the United States, two virtual meeting were held for local elected officials in New York and Vermont on August 24 and 25.

Both Outreach Coordinators were members of the planning committee that met regularly to prepare for the virtual public meetings on September 29 and 30. These virtual meetings replaced the originally scheduled in-person public meetings in the spring, which were canceled because of the COVID-19 pandemic.

The Canadian Outreach Coordinator worked closely with the PAG co-chairs to develop the French versions of four videos in advance of the virtual public meetings and the Chambly Canal fact sheet. The U.S. Outreach Coordinator continued to lead on the writing of articles for The Current, in coordination with the PAG co-chairs. Each issue of the newsletter has highlighted a technical expert working on the study, as well as an overview of a Performance Indicator and other study news.

2.8 LCRR Study Products

Table 1. Major Products to be submitted to the Independent Review Group (IRG)

Product name	Current Status	Date for IRG Review	Projected Completion Date	Report Lead
Hydroclimatology of the LCRR system	Published in peer reviewed (journal)	n/a	Fall 2019	HMM (CA)
Causes and Impacts of past floods in LCRR	Completed	Completed	Feb 2020	RR
Potential Structural Flood Mitigation Measures for the LCRR Basin	Integrating comments from IRG	Completed	Fall 2020	FMMM
Final report on cumulative impacts of instream modifications	Initiated Fall 2019	November 2020	Late 2020	RR
Watershed Storage Report	Initiated Fall 2019	January 2021	Spring 2021	FMMM
LCRR Climate Change Strategy	Initiated Fall 2020	April 2021	Late Spring 2021	FMMM - HMM
Combined report on water supply scenarios (historic, stochastic, future climate)	to be initiated Fall 2020	July 2021	Early Fall 2021	FMMM-HMM

U.S. and Canadian Flood Forecasting in the Lake Champlain-Richelieu River Basin: Institutions, Products, and Services	In draft	September 2021	Late Fall 2021	HHM
Integrated socio-economic-environmental (ISEE) Report	In draft	January 2021	March 2021	RR
Final report on PIs for baseline and mitigation scenarios	Initiated Fall 2019	September 2021	November 2021	RR
Social and Political Acceptability of proposed mitigation measures	to be initiated April 2021	Fall 2021	January 2022	SPE
Final LCRR Study report to the IJC	to be initiated Spring 2021	December 2021	March 2022	Study Board

Table 2. Major Study Products to be submitted for technical review

Product name	Current Status	Date for technical Review	Projected Completion Date	Report Lead
Water Balance Model	initiated Fall 2019	April 2021	May 2021	HHM (CA)
Hydrodynamics of the LCRR system	Draft	Oct 2020	Nov 2020	HHM
Social Network Analysis and Governance	initiated Fall 2019	Fall 2020	Fall 2020	SPE
Report on Lake Champlain hydrodynamic model configuration and skill	to be written	March 2021	March 2021	HHM (US)
Report on Lake Champlain wave model (addendum to LC model report)	to be written	March 2021	Sept 2021	HHM (US)

Collaborative Decision Support Tool Manual	initiated Spring 2020	Fall 2021	Fall 2021	FMMM
WRF-Hydro & GEM - Hydro/Watroute hydrological modelling	to be written	Fall 2021	Fall 2021	HHM

2.9 Study Board

2.9.1 Summary of Activities

- The Study Board convened monthly virtual meetings during the current reporting period.
- The items that came back periodically to the meetings include: approval of the minutes of the last meeting, a summary of the activities of the various study groups, a summary of the significant events (workshops, meetings) of the last month or those to come, the governance of the study, the review of the main timelines, as well as any notable item representing an issue for the Study.
- Below is a summary of the topics and decisions that were taken during these meetings:

Major Study Board decisions

- Approved a set of criteria for evaluating the structural alternatives.
- In Theme 1, the Study will focus on the Chambly canal diversion moving forward. The other alternatives will still be evaluated for inclusion in the final report, but at a more general level.
- To task TWGs to explore the 4 recommendations provided during Theme 4 workshop and explore how these recommendations can be implemented at the watershed scale, as a binational tool.
- Development of a Product Inventory Spreadsheet.
- Approval to move forward with a public meeting on a format of a webinar planned on September 29th and 30th.
- Approval of the Indigenous Engagement work plan and moving forward with the 2020-2021 annex.
- Approval of the LCRR-Parks Canada Technical Committee Terms of Reference.

2.10 Study Management

2.10.1 Summary of Activities

- There was a transition of US Study Managers as Rob Flynn stepped out of this role in early September and Mae Kate Campbell, Technical Associate at the Lake Champlain Basin Program, began serving as Study Manager.
- The Study Managers contributed to the planning and execution of the political entity meetings and public meetings.

- The management team (co-chairs, co-managers, IJC liaisons, and the communication advisor) met weekly to ensure the proper conduct of the study and discuss the main issues. These meetings were used to guide and advise the SB on the main events and timelines of the study.
- The study managers:
 - Responsible for the overall coordination of the study in partnership with the IJC liaisons and the study co-chairs.
 - Responsible for monitoring contracts and budgets.
 - Participated in the logistics of meetings or workshops.
 - Drafted the agenda and participated in the Study Board meetings and calls. They lead the monthly co-lead calls. Whenever possible they assisted TWG workshops and calls, PAG meetings as well as the Special planning committee calls, CWG calls, and Indigenous People's engagement sub-group conference calls

Table 3: Meetings Attended by Study Members (date in bracket)

	April 2020	May 2020	June 2020	July 2020	August 2020	September 2020
Study Board	Call (20, 28)	Call (11, 26)	Call (23)	Call (28)	Call (31)	Call (22)
TWG Co-leads	Call (15)	Call (20)	Call (17)	Call (15)	Call (19)	Call (16)
TWGs		RR Indigenous PIs Call (7)	SPE Focus Groups FMMM-HHM Parks Canada Call (4)	SPE Focus Groups FMMM-HHM Parks Canada Call (2, 22)	FMMM-HHM Parks Canada Call RR Indigenous PIs Call (24)	FMMM-HHM Parks Canada Call (9, 17)
Special Planning Committee for Public meetings (SPC) [Includes Outreach Coordinator]		Call (19)	Call (22)		Call (4)	Call (3, 15, 22, 24)
Elected Officials Webinar		Canada – Fed. Gov’t (8) Prov. Gov’t (20) Reg. and Munic. Gov’t (27)			US Political Entity Meetings (24 and 25)	
Theme 3 Webinar (first responders)			Canada (16, 18)			
Public Webinar						French (29, morning and evening) English (30, morning and evening)
PAG First Nations		call (11)	call (25)	call (16, 29)	call (26)	
Communications WG	call (6)	call (4)	call (1)		call (10)	

3 BUDGET / EXPENDITURES

Funding allocations are provided for each study group for the duration of the Study, including the granted extension (2021-2022).

3.1 US and CA Budgets

Canada

Expenses incurred from April 1st are in line with the planned annual budget (Table 5). The COVID-19 pandemic has reduced anticipated expenditures for travel and other meeting expenses, as well as causing additional difficulties in replacing specialized staff on parental leave in a teleworking setting. Options are being assessed to adjust and expedite, during the remaining of the study, those activities that were impacted by the pandemic and the study board anticipate to successfully complete the study within budget.

Table 4: Canadian Funding (in CA\$1000)

	CA Summary Funding (x 1000\$)						Total
	2016-2017	2017-18	2018-19	2019-20	2020-21	2021-22	
Planning as per Work Plan							
FMMM	0 \$	71 \$	108 \$	142 \$	272 \$	109 \$	701 \$
HHM	25 \$	205 \$	368 \$	392 \$	443 \$	155 \$	1 588 \$
IM/IT	0 \$	54 \$	0 \$	0 \$	0 \$	0 \$	54 \$
IRG	0 \$	10 \$	0 \$	4 \$	20 \$	20 \$	55 \$
Outreach / PAG	6 \$	74 \$	161 \$	157 \$	155 \$	138 \$	691 \$
RR	0 \$	80 \$	334 \$	392 \$	384 \$	145 \$	1 336 \$
Study Board	0 \$	0 \$	53 \$	0 \$	0 \$	0 \$	53 \$
Secretariat	0 \$	7 \$	21 \$	19 \$	20 \$	30 \$	97 \$
SPE	0 \$	25 \$	186 \$	503 \$	389 \$	50 \$	1 153 \$
Study Management	47 \$	178 \$	208 \$	221 \$	294 \$	399 \$	1 347 \$
Total	78 \$	704 \$	1 437 \$	1 830 \$	1 977 \$	1 046 \$	7 072 \$

Table 5. US Funding (in US\$1000)

Expenses incurred in this reporting period are in line with the planned annual budget. FY20 funds were fully obligated. Ensuring the timely delivery of FY21 funds during the continuing resolution will be critical for the completion of the Study.

Planning as per Work Plan	US Summary Funding (x \$1,000)							Total
	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	
FMMM			\$272	\$72	\$181	\$208	\$84	\$817
HHM		\$340	\$511	\$245	\$282	\$25		\$1,403
IM/IT								\$0
IRG/ Publication Costs				\$5	\$53	\$180	\$110	\$348
PAG Co-Lead		\$37	\$38	\$19	\$29	\$38	\$20	\$181
Outreach			\$47	\$60	\$66	\$65		\$238
RR			\$90	\$132	\$63	\$160	\$25	\$181

Study Board				\$5	\$1	\$5	\$3	\$14
Secretariat		\$104	\$100		\$78	\$50	\$25	\$357
SPE			\$143	\$184	\$308	\$90	\$40	\$765
Study Management	\$500	\$19	\$344	\$296	\$189	\$180	\$71	\$1,598
Total	\$500	\$500	\$1,545	\$1,018	\$1,250	\$1,001	\$378	\$6,192