



International Lake Champlain-Richelieu River
Study Board

Groupe d'étude international
du lac Champlain et de la rivière Richelieu

Semi-Annual Report

October 2018

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The International Lake Champlain-Richelieu River Study Board submits herein its semi-annual progress report, covering activities from April to October 2018.

1 SUMMARY

April to October 2018 has been a period of significant progress by the study. Key deliverables include early mitigation measures to address flooding in the Lake Champlain–Richelieu River (LCRR) watershed; an initial set of performance indicators; an evaluation of how watershed storage of high waters could reduce lake and river levels; and the press review of the 2011 flood. Of the few deviations in schedule, there were delays in staffing the US positions of Outreach Coordinator and Public Advisory Group (PAG) co-lead and in completing the causes and impacts study report, due to contracting issues.

A series of technical workshops, held between June and September resolved some problems and raised some issues. For example, a nature based solutions approach, consisting of mitigating the impacts of floods using watershed storage of high flows by wetlands and adjacent floodplains, is more desirable in the US than in Canada. Climate change is another example of a challenge to predict extreme flows. There have also been discussions around social and legal issues related to implementing the real-time flood prediction and warning system.

During this review period, the Canadian Outreach Coordinator, the PAG co-leads and LCRR study members were actively soliciting feedback from interest groups and the public on both sides of the border. As such, there have been meetings with Canadian federal, provincial, and regional agencies and groups, as well as US federal partners, state and local agencies and groups; these included elected officials, farmers' groups, key ministry representatives, nature conservation groups, and urban planners. The PAG held two meetings: one in Grand Isle, Vermont on May 29 and the other in Saint-Paul-de-l'île-aux-Noix, Quebec on October 24, 2018.

The Communications Group informed the public of study activities through the study website and via a bimonthly electronic newsletter. In addition, the Communications group developed a series of fact sheets, a poster, and a basin video for the public meetings on November 7-9, 2018 in Saint-Jean-sur-Richelieu, Quebec; Whallonsburg, New York; and Burlington, Vermont.

Though monthly meetings of the Study Board were scheduled, inconsistent participation resulted in the absence of a quorum at several meetings. For this reason, discussions on nature based solutions or funding, for example, progressed slower than planned.

The study budgets are in line with those forecasted in the work plan.

2 BOARD and WORKING GROUP ACTIVITIES

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

2.1.1 Summary of Activities:

- NOAA's Great Lakes Environmental Research Laboratory (GLERL) and its partner, the Cooperative Institute for Great Lakes Research (CIGLR) continued testing of the Lake Champlain 3D hydrodynamic model using the Finite Volume Community Ocean Model (FVCOM). Further evaluation and model calibration is needed as errors in water levels were seen in some cases.
- CIGLR developed a coarse (1:100K) and fine (1:24K) grid for the Weather Research and Forecasting Model Hydrologic model (WRF-Hydro), and conducted calibration tests of the WRF-Hydro model of the LCRR basin by simulating multiple versions of the 2011 season.
- The US Section coordinated the collection of hydrographic surveys of Lake Champlain by NOAA's Office of Coast Survey (OCS). The HHM team provided input and guidance to priority survey locations near the narrow inlets around the causeways. The survey team collected bathymetry data in May 2018 and has processed these data and released for study use. In addition, 3 new streamflow gages were installed in NY and VT to help define tributary inflows.
- The US Geological Survey (USGS) – New York office compiled data on historical flooding events for the causes and impacts report. Initial hydrologic analysis and writing is underway for the HHM sections of the report.
- A Digital Elevation Model (DEM) is being created by Environment and Climate Change Canada (ECCC) using LIDAR and bathymetry data. A large amount of LiDAR data from both the US and Canada have been assembled. New bathymetric surveys from lower Richelieu River and from the lake are being processed for datum, accuracy and density. This new DEM will be used in various study tasks including as an Integrative tool for the assessment of impacts on resources (ISEE) and for hydrodynamic modelling.
- Development and application of a 2D model on the Saint-Jean Shoal by ECCC: several mitigation solutions (including 9 different shoal modifications) were simulated for the full spectrum of possible discharge/water level conditions. This model was used to simulate lake and river water-surface elevations over long period (1924-2017) accounting for the historical Net Basin Supply and the Water Balance model.
- Development of the Lake Champlain 2D hydrodynamics by ECCC: a new grid of Lake Champlain was created to more accurately simulate wind setup with

meteorological input. Calibration of this model will be completed in the coming months.

- Improvement of the current forecasting system: the ministère de l'Environnement et de la Lutte contre les Changements climatiques (MELCC) has been working on a relationship for assessing the effects of wind on the water-surface elevations at Rouses Point. A basic empirical model for predicting wind effect has been tested using observational data. The next step is to proceed with validation using forecasted wind data and to implement the model as a forecasting system.
- Hydroclimatic scenarios by MELCC/ETS (École de Technologie Supérieure): Climatic simulation data for the Coupled Model Intercomparison Project (CMIP5), Coordinated Regional Climate Downscaling Experiment (CORDEX) and ClimEx, a climate and population modeling software, ensembles have been retrieved. A bias correction algorithm has been developed for the daily precipitation, daily minimum temperature and daily maximum temperature series of climatic simulation.
- Preliminary analysis of wind speed, wind direction and lake ice fraction variables was performed using simulations in the ClimEx ensemble. A semi-distributed hydrologic model (Hydrotel) was implemented for the LCRR basins and calibrated for 18 gaged watersheds over the US portion of Lake Champlain watershed.
- Calibration and validation of Watroute Model by ECCC: The Soil Vegetation and Snow -SVS land-surface scheme (version 1) has been coupled to the WATROUTE routing scheme. Calibration of the SVS and WATROUTE models was performed. A significant improvement in model performance was observed. Wind simulations: New outputs of GEM5 (Global Environmental Multiscale Model) have been produced with cascading models at 10 km, 2.5 km and 0.25km (grid density) for three months of simulation, between May 1 and July 31, 2011. Evaluation of the results against measured data is ongoing.
- External proposal for Richelieu discharge, Lake Champlain water level and Lake Champlain NBS return period has been built in collaboration with Dr. Taha Ouarda (INRS-ETE).

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

2.2.1 Summary of Activities

- Over the past 6 months, the working group has progressed on its work plans, working collaboratively with the other TWGs and study managers.
- FMMM sought input on potential mitigation solutions from numerous agencies and groups to better understand a range of perspectives. Presentations were made to Quebec's Interagency Committee, Canadian Federal Agencies Group,

Regional Municipalities Association, Quebec's Agricultural Producers Union, Nature Conservancy of Canada, US Federal Partners (in particular FEMA), and the US Corps of Engineers Silver Jackets of New York and Vermont.

- FMMM continued to refine the Study's flood mitigation framework and helped prepare a fact sheet and poster on flood mitigation.

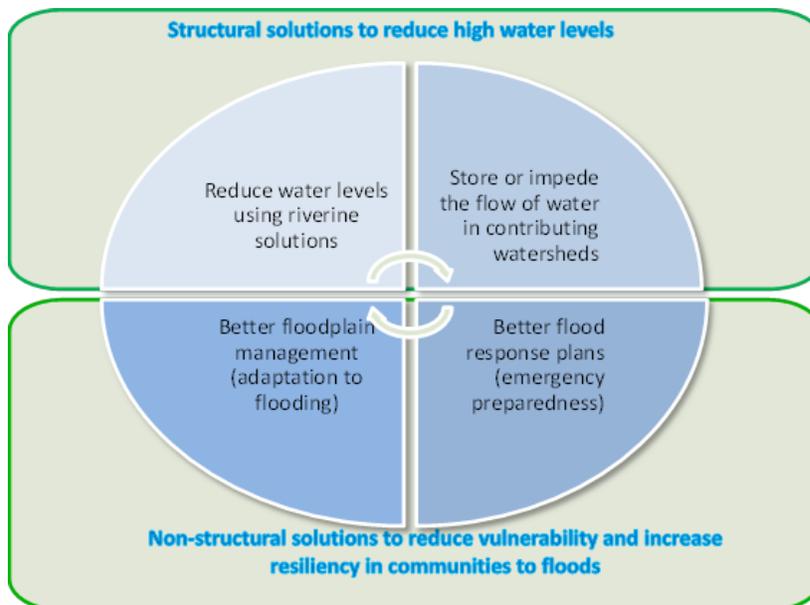


Figure 1: Non-Structural vs. Moderate-Structural Proposed Flood Mitigation Solutions

- Dr. Brian Morse, University of Laval, produced a report on potential mitigation solutions, using modelling results from the HHM TWG to assess the hydraulic impacts of the various solutions on Richelieu River and Lake Champlain water levels. The report also provides insights into which solutions have the most potential to reduce flooding.
- A co-op student from McGill University was contracted to review literature on best practices in flood response and floodplain management in Canada, the US and other developed countries. The report identifies options that could be implemented in the LCRR basin.
- Worked closely with the Resource Response TWG on using nature-based solutions to reduce flooding. FMMM assessed the potential storage in the basin and the impact that it would have on Lake Champlain water levels.
- Reviewed and analyzed several moderate structural alternatives modeled by HHM. The alternatives were modifications of the Richelieu River channel near St. Jean-sur-Richelieu such as the removal of eel traps. The HHM Water Balance Model estimates how the changes in channel configuration will affect

water levels in the lake and river based on the historic inflows from 1925-2017. Another focus of work has been to develop a Collaborative Decision Support Tool (CDST) on mitigation measures. The prototype was presented to the study board in October. The current version of CDST draws heavily on the water balance model produced by HHM and focuses on hydraulic implications. The CDST is being constructed to assess economic, social and environment information. FMMM is working with other working groups to develop performance indicators for these areas.

- Presented potential structural solutions in the Richelieu River, nature-based solutions to reduce flooding, and flood forecasting and response information to the study board. The board provided direction on the most promising solutions and the additional work required to make a more comprehensive assessment.
- Contributed to the causes and impacts report, as well as presentations for the public and the IJC.

2.3 Resource Response Technical Working Group (RR TWG)

2.3.1 Summary of Activities

- A key list of environmental performance indicators (PIs) was resented to the study board for approval. These included: built environment, agricultural, and water use.
- Worked with the Social, Political and Economic Analysis Group to refine economic and social performance indicators and integrate an economic analysis in the overall workflow.
- Completed a draft review of the impacts of past floods on resources and continued to coordinate the causes and impacts report.
- Explored the ability of nature-based solutions to mitigate flooding through a literature review and white paper; by organizing a workshop, and drafting a proposal to model watershed storage and attenuation potential in the LCRR basin.
- In response to a study board request, RR reviewed integrated water resource management tools in order to select the integrated modeling platform for the study.
- RR continued work to develop Lidar and bathymetric data processing and database integration for Upper Richelieu River, an Integrated Social-Economic-Environmental (ISEE) grid and interpolation algorithms.

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

2.4.1 Summary of Activities and Project Task Status

- Task SPE-1: Historical analysis of flooding. Status: To be completed in the US and Canada by the end of December, 2018.
 - US: In the creation of a GIS story map of the Lake Champlain Richelieu River Basin, other GIS data layers were located, including demographic information for the American side of the basin. Additionally, the press review related to public health provided initial information into the vulnerabilities and impacts on health from the 2011 and prior flooding events. This begins to fulfill the goals of this task, which include a demographic profile of the basin, and a social and public health impact analysis of past flooding events.
 - Canada: The historical and demographic analyses are completed. A first draft of the historical report is under review by Québec inter-ministerial committee. The spatial analysis of the business sector is still underway.
- Task SPE-2: Press review of past flooding events. This task calls for a press review that seeks to identify: (a) the ways in which floods and risks are presented and represented in the media and other community conversations; (b) the various flood-related challenges reported therein; (c) the actors who appear concerned by these problems; (d) stakeholders' concerns, demands, proposals, and actions relative to flood events; and (e) any other information relevant to the understanding of the local and regional preparations, management and response to flood events. Added Tropical Storm Irene and other relevant tributary flooding to the press review
 - US: completed, April 2018.
 - Canada: to be completed in December 2018. The group has collected, read, and classified all relevant newspaper publications according to a grid created in collaboration with US counterparts and is currently editing the report.
- Task SPE-3: Literature review. The US-SPE will complete its review of scholarly literature by October 2018. CA-SPE has been identifying and summarizing studies with relevant social, political, and economic information as initial research regarding the vulnerability and resilience of the Lake Champlain Richelieu River basin. The review is being edited and will be included in the Causes and Impacts Report.
- Task SPE-4: Vulnerability assessment. Status: In progress. To be completed December 2019.

- US: progress has been made on identifying vulnerabilities and assets, or instances of resilience, in the Lake Champlain Richelieu River Basin through a press review. Additionally, initial research has been done on the vulnerability and resilience of the region. US-SPE will host two focus groups with local/regional elected officials, planning boards and planning professionals in Vermont and New York to provide input on the remaining steps of this task.
- Canada: a progress report was recently submitted to the IJC. The study identified the high social vulnerability of the municipality of Saint-Joseph-de-Sorel, the very low adaptive capacity of Lacolle, Saint-Armand, and Saint-Joseph-de-Sorel, as well as many accessibility issues particularly in the southern part of the territory in times of emergency. More analyses are underway.
- Task SPE-5: Risk perception analysis. The Canadian methodology will be shared in fall/winter 2018-19; work will begin on the US side in winter/spring 2019.
 - Canada: progress report was recently submitted to the IJC. This first step begins to identify the issues, needs, and strengths of the communities. Results of the stakeholder interviews, focus groups, and narrative maps will be presented in future reports of this phase of the research and will be complementary to these initial results.
- Task SPE-6: Develop performance indicators. Status: In progress. To be completed as per RR schedule. US-SPE has attended several meetings with US and QC counterparts regarding social/political indicator development. On September 17, 2018, SPE forwarded its full suite of indicator recommendations to RR. Essentially, SPE is responsible to feed indicators into RR's process. This work proceeds on schedule. Overall, potential economic indicators are identified but still need to be prioritized. More work still needs to be achieved concerning the social indicators.
- Task SPE-7: Develop outreach plan. Status: Completed May 2018. Over spring 2018 US-SPE forwarded a plan to hire an American outreach coordinator to the Study Board. The Canadian outreach coordinator has been extremely efficient in connecting with stakeholders and interests groups.
- Task SPE-8: Governance analysis. Status: In progress. To be completed December 2019.
 - US: currently developing a list of state and federal policies that could intersect with the FMMM flood management recommendations. Additionally, focus groups taking place in November 2018 will support this task.
 - Canada: secured collaboration with the Québec Government; information on emergency issue management.

- Task SPE-9: Multi-agent governance model. Status: just beginning. In Canada, a document describing the potentialities of the model was prepared; work is underway to structure the model more in details. To be completed Spring 2021
- Task SPE-10: Cost-benefit analysis. Status: just beginning. In Canada, reflection on the construction of the methodology is well advanced. This task is delayed by contractual problems. To be completed Spring 2022.

2.5 Public Advisory Group (PAG)

2.5.1 Summary of Activities

- Kristine Stepenuck began as the US PAG Co-Chair in July 2018. In September, Ann Ruzow Holland joined as a US PAG member, bringing the number of PAG members to seven individuals from each country.
- A PAG meeting was held in Grand Isle, Vermont on May 29 2018. At this second face-to-face meeting of the advisory Group, members heard an overview of the LCRR study by Keith Robinson, information on resources impacted by the flooding by Perry Thomas, an update on study outreach, and engaged in a priority setting exercise for Communication and Outreach products.
- PAG members were very interested in learning more about what is going on in the study. Products that stemmed from the PAG meeting are the Communication and Outreach Calendar, the bimonthly digital newsletter, *the Current*, the PAG storyboard on the study web page, and a summary of the workshop on watershed storage. The PAG is helped the Communications Group to develop a fact sheet series and a basin animation video for the November public meetings. The PAG also liaised with Quebec Outreach coordinator André Champoux, and invited members to attend the study's technical workshop in October 2018 to help them better understand more about technical tasks.
- In July, the US PAG co-chair submitted an *Interim Report* to the Commission.
- The PAG Co-chairs were asked to chair a planning committee for the fall 2018 set of public meetings. The committee included all of the Communication Working Group and representatives from each of the Technical Working Groups. PAG members were consulted on the format of the public meetings, overview presentation and communication products developed for the public meetings.
- In mid-August, the US and Canadian PAG co-chairs submitted an updated PAG work plan, including a timeline and activities, to the IJC for review.
- IJC and PAG members met with the Mohawk and Waban-Aki First Nations in Kahnawake, Quebec on August 30 to continue the conversation on potential collaboration and contract opportunities). In September, US chiefs, presidents and leaders of the Koasek of the Koas of the Abenaki Nation Council of Chiefs, Nulhegan Band of the Coosuk - Abenaki Nation, the Elnu Abenaki Tribe, and the

Stockbridge-Munsee Community of Mohican Indians were contacted to share information about the study and seek their input on it.

- PAG activities were presented to the Quebec Interdepartmental committee in June, and at a study meeting in August.
- The US PAG Co-Chair also participated in meetings to assess performance indicators and to communicate with the Lake Champlain Basin Program-led Federal Partners meeting and the US Vermont/New York State and Local entities focusing on flood mitigation projects (US Army Corps of Engineers' Silver Jackets), and held monthly meetings with US PAG members, and with the SPE Analysis Group regarding meetings with government officials and planners at the local, regional and state levels.
- Over the last six months, PAG co-chairs regularly participated in calls with the study board and Communication Working Group. They also responded to requests for advice or comments on communications materials (e.g., fact sheets, video, social media posts, newsletter), meeting goals and agendas.

2.6 Communications Working Group (CWG)

2.6.1 Summary of Activities

- The binational CWG assists the LCRR study board in planning and implementing its public outreach activities. The Canadian division IJC Communications Advisor currently serves as Chair, with the US Public Affairs Officer as alternate chair. The full membership includes PAG co-leads; SPE co-leads; IM/IT co-leads; Outreach Coordinator (CAN) and both study managers.

Strategic communications

- Defined a sequencing approach for outreach to stakeholders, the public and study groups to gather input on the proposed mitigation framework which was presented to the Study Board in June.
- Created and maintained a calendar of communications and outreach activities on SharePoint to track external and intra-study meetings.
- Merged with the Special Planning Committee in August to coordinate tasks for the November 2018 public meetings, with several simultaneous projects underway.
- Finalized an implementation plan for communications products and activities in 2018-2019, and presented to the Study Board in June.
- Ongoing monitoring of issues in the media and opportunities to coordinate messaging with water quality study.
- Provides monthly communications updates to the Study Board, and contributes to IJC executive briefings.

Public engagement

- Published study-related articles in *Water Matters*, IJC's quarterly newsletter in February, June and August.
- Issued 5 e-blasts to 190+ subscribers to announce new information posted to the study web page.
- Created the bimonthly LCRR study newsletter, *The Current*, in English and French and distributed first two issues in July and September.

Web postings

- Public calendar of study events.
- PAG story map of members, meeting dates and locations.
- Introduction to André Champoux, Canadian Outreach Coordinator.
- LCRR study brochure, *Water Matters* blog posts.
- Spring progress infographic, posted to IJC Facebook.
- Winter/spring weather outlooks for New England and New York.

Products

- 5 fact sheets professionally designed and printed for the fall public meetings.
- An animation video about the hydrology of the basin.
- A large wall poster of potential flood mitigation measures for the public meetings, which will be made available as a printable PDF.

2.7 Outreach

2.7.1 Summary of Activities

- The Canadian Outreach Coordinator organized meetings with key partners to provide an overview of the study and initiate discussions on potential mitigation measures. Seven meetings were organized from May to August 2018:

May 14: Haut-Richelieu Regional County Municipality (HR-MRC) and Assistant to the Federal Member of Parliament (MP) Rioux (M. Desrosiers)

June 8: Government of Quebec Interdepartmental Committee.

June 13: planners from five Regional County Municipalities (MRC).

June 18: Government of Canada Interdepartmental Committee.

July 17: Nature Conservancy of Canada (NCC).

July 31: Association of the citizens of the floodplain (ACPI, Richelieu River).

August 30: Union des producteurs agricoles du Québec (UPA).

2.8 Information Management Function (IM/IT)

2.8.1 Summary of Activities

- While most of the work consisted of educating people on Office365 tools, the IM/IT group focused on providing solutions to the different groups depending on particular needs. The need for IM/IT resources may peak for the development of the Collaborative Decision Support Tool, but in the meantime, most study members are accessing and using online tools.
- To be aware of upcoming needs from the different TWGs, the IM/IT group attended technical meetings of the study in April and October, 2018.

2.9 Study Board

2.9.1 Summary of Activities

- The study board had six monthly meetings during the current period.
- One of the challenges faced by the board during this period was to obtain a quorum during the meetings. In addition, the high number of guests attending the meetings and the resulting high number of opinions expressed on issues affected the board's ability to make decisions.
- The items that came back periodically to the meetings are: approval of the minutes of the last meeting, a summary of the activities of the various study groups, a summary of the significant workshops or 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.
- Here is a summary of the topics and decisions that were taken during these meetings:

May 8th, 2018:

- Supported RR preliminary PI list as submitted.
- Supported the flood mitigation framework as submitted.
- Supported the proposed framework and calendar for communications and outreach.
- Suggested that more information be gathered over the summer on Aquahacking and presented to the study board for discussion in the fall.
- Approved two workshops: prioritization of performance indicators and LCRR climate change aspects methodology.
- Elected to move discussion of US funding scenarios to next call.

June 12th, 2018

- The board did not have a quorum, and therefore no formal decisions could be taken during this meeting.
- The board recommended that all products from the study should be placed on the SharePoint site and circulated to other TWG members.
- The PAG was tasked to identify dates for the public meetings and the next PAG meeting.

July 19th, 2018

- Approved moving forward with fact sheets and video.
- Rob Flynn, Debbie Lee and Michael Laitta will collect information to evaluate if the leads for each of the forecast items can complete their tasks within their own work plan or if they will need additional resources.
- Keep task #8 (“Contact and engage with the de Gaspé Beaubien Foundation Aqua Hacking event”) but lower its priority.
- Endorsed the sequencing approach document proposed for the upcoming PAG and public meetings.
- Water storage potential will be added to the next meeting agenda to discuss the approach and concerns to move forward.

August 14th, 2018

- The board did not have a quorum, and therefore no formal decisions could be taken during this meeting.
- Jean-François Cantin and Keith Robinson sent a reminder encouraging board members to reply to questions, insisting on the importance of attendance at meetings.
- IJC will be asked for a legal insight on NCC ownership of the Richelieu riverbed and the widening of the Chambly canal.
- The following items will be added to the next agenda:
 - Update on access facilitation of historical LCRR documents.
 - Update on Aqua hacking.
 - Update on LCRR flood forecasting plan (Deborah Lee, Richard Turcotte).
- Schedules a planning session with HHM and FMMM for the Climate Change Workshop in September.

September 11th, 2018

- agreed that the available members will meet for 3 days in October. Members who cannot attend the October 10th meeting will join the rest of the board on the 11th and 12th.
- September 18th: deadline for board members to provide comments on the public meeting format and presentation outline.
- September 25th: deadline for TWGs/PAG co-leads to provide comments on the presentation outline.
- September 25th to October 10th: a deck will be crafted (“Version 1”).

- October 10th -11th: the deck will be presented at the TWGs meeting (“Version 2”).
- October 12th: “Version 3” of the deck will be presented at the practice decision after collecting all the inputs from October 10-11.
- An agenda with topics and meeting time with the TWG for the 3 days will be proposed to the study board.
- The study managers will do a follow-up to SPE and RR to know if their groups will need additional funding and resources before next study board call.
- Bill Werick and Perry Thomas will set up a time for a webinar to discuss the watershed storage issue with the relevant TWGs.

October 10th- 12th, 2018 Record of decisions from the study board

- A minimum of in-person meeting of four times per year while maintaining monthly calls.
- Provide prompt guidance to inter-TWG communication for issues that cannot be addressed at the TWG level.
- Meeting materials must be circulated one week in advance of meetings and provided in a briefing in order to quickly assess the information.
- Members are no longer assigned to individual TWG meetings; TWG co-leads will maintain close communication with co-chairs.
- All decisions will be promptly communicated to the TWG co-leads.
- Public release of as many LCRR products as possible over the course of the study is strongly encouraged; discussion with the IJC is needed to identify the best approach to move the LCRR products onto the IJC web platform.
- IM/IT team is tasked to provide assistance to the TWGs.
- Study will go forward with the NOAA flood forecasting proposal.
- A formal legal briefing of historical flood mitigation efforts in the Lake Champlain-Richelieu River Basin will be requested from the IJC.
- Considering the importance of consistent French-English terminology, proper French translation of the word “weir” will be discussed and adopted
- Considering the need to collaborate with government implementers throughout the course of the study to determine and develop political acceptability, a strategy document will be drafted outlining gaps in knowledge, the outreach that has already taken place, and further opportunities for public engagement.

2.10 Study Management

2.10.1 Summary of Activities

- One of the main tasks of the management team was to gather the necessary information and set up contracts to implement the various activities/tasks planned for the 18/19 fiscal year.
- The management team (two IJC liaisons, two co-managers, and two communication advisors) met weekly to ensure the proper conduct of the study

and discuss the main issues. These meetings were used to guide and advise the study board on the main events and timelines of the study.

- The study managers are responsible for:
 - overall coordination of the study, with the rest of the management team and the study co-chairs
 - monitoring contracts and budgets
 - planning logistics of meetings and workshops
 - Drafting the agenda for and participating in the monthly study board meetings, as well as attending whenever possible TWG workshops and other meetings
 - contributing to the presentations used at the above-mentioned public meetings and for the IJC semi-annual appearance.
 - Drafting this report.
- The Canadian study manager resigned in spring 2018 to accept a permanent job. The manager appointed in July resigned on September 28. The hiring process for a new study manager was fast-tracked and the professional is in place.

3 BUDGET / EXPENDITURES

Tables below show approved, committed and spent amounts in the US and Canada from May to October 2018.

Table 3 - US Funding (in \$1000US)

Activity	Budget ¹	FY18 Committed ²	FY18 Spent ³	FY18 Difference ⁴
Study Board and Management	274	583*	583	0
HMM TWG	625	418	418	
FMMM TWG	250	271	271	0
RR TWG	345	89	89	0
SPE AG	195	143	143	0
PAG		38	38	0
Peer Review Group	12	0	0	
Communications				
IM/IT	36	0	0	
Grand Total Budget	1,737	1,545	1,545	0
Notes: 1. Study Board budget. Includes profiling of the 2017/18 budget. 2. Funds allocated for Principal Investigator or Agency. 3. Funds spent to date. 1. Difference between the budget and committed to date. 2. * Includes LCBP contract				

Table 4 - Canadian Funding (in \$1000Cdn)

Activity	Budget ¹	Committed ²	Spent ³	Difference ⁴
Study Board and Management	1,308	222	104	1,086
HMM TWG	480	462	210	18
FMMM TWG	375	189	86	185
RR TWG	475	484	240	(9)
SPE AG	330	342	96	(12)
PAG	53	37	7	16
Peer Review Group	10	10	0	0
Communications	161	229	78	(68)
IM/IT	80	37	14	43
Grand Total Budget	3,272	2,012	836	1,260
Notes: 1. Study Board budget. Includes profiling of the 2017/18 budget. 2. Funds allocated for Principal Investigator or Agency. 3. Funds spent to date. 4. Difference between the budget and committed to date.				