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October 30, 2025

Keshni Nand
Registrar
British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC V6Z 2N3

Dear Keshni Nand:

**RE: British Columbia Utilities Commission (BCUC or Commission)
British Columbia Hydro and Power Authority (BC Hydro)
Site C Project
Lessons Learned Report to Inform Future Major Capital Projects**

BC Hydro writes in response to the BCUC's letter dated May 6, 2025 to provide its Site C Lessons Learned Report.

BC Hydro is filing this report in two parts. The first part provides a comprehensive Executive Summary and the second part provides the full report.

For further information, please contact Joe Maloney at
bchydroregulatorygroup@bchydro.com.

Yours sincerely,



Chris Sandve
Chief Regulatory Officer

wc/ma

Enclosure

Site C Project

Site C Lessons Learned Report Executive Summary

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1 Executive Summary

Site C is the third dam and hydroelectric generating station on the Peace River in northeastern British Columbia and is located about 7 km from Fort St. John. It provides between 1,100 to 1,230 megawatts of capacity and produces 5,100 gigawatt hours of energy per year on average, enough to power about 450,000 homes. By taking advantage of water already stored in the Williston Reservoir, it gains significant efficiencies, generating approximately 35% of the energy produced at the W.A.C. Bennett Dam with only 5% of the reservoir area. Construction began on July 27, 2015, and as of October 30, 2025, the Site C Project (**Project**) is substantially complete and fully operational with all six generating units in-service. [Figure 1](#) below shows the Site C Dam, Generating Station, and Spillways as of August 2025.¹

Figure 1 The Site C Dam, Generating Station, and Spillways in August 2025



The British Columbia Utilities Commission (**BCUC** or **Commission**), by a letter dated May 6, 2025, directed BC Hydro to report on lessons learned from the Project,

¹ Section 1.1 of the report provides a detailed Project update.

1 and how those lessons will inform future major capital projects. This report discusses
2 lessons learned in the six areas identified by the Commission: contract
3 management, risk management, geotechnical risk, project governance, Indigenous
4 consultation, and community engagement. The lessons are the result of both
5 successes and challenges on the Project.

6 The Project was more complex and challenging than BC Hydro and its contractors
7 anticipated. Several major challenges, including geotechnical issues and the
8 COVID-19 pandemic, led to significant budget increases in 2018 and 2021. The
9 lessons learned discussed in this report under the six areas identified by the
10 Commission should mitigate or reduce the potential for similar budget challenges
11 from occurring on future major capital projects. In particular, BC Hydro should have
12 ramped up its internal Project resources more proactively and sooner and going
13 forward, BC Hydro should consider how to better communicate the breadth of
14 low-probability, high-consequence risks on a project that have the potential to result
15 in significant budget and schedule impacts, if they materialize.

16 Despite these challenges, BC Hydro has successfully executed an important, large,
17 and complex project with high-quality work, strong safety and environmental records,
18 and economic benefits to communities and Indigenous Nations. The facility is
19 operating as expected and this has been confirmed through extensive
20 instrumentation and monitoring.

21 Overall, BC Hydro reflects on the Site C Project with pride and a commitment to
22 learn and improve. Site C is an inspiring example of the transformative impact made
23 possible through public infrastructure investment, but BC Hydro also has a
24 responsibility to our customers and the Province to learn from the challenges and
25 lessons discussed in this report. We are committed to taking these lessons forward
26 as we continue to advance important public infrastructure projects and deliver on our
27 mandate to safely provide reliable, affordable, and clean electricity.

1.1 The Project Experienced Several Major Challenges that Led to Budget Increases in 2018 and 2021

There were several factors that made the Project challenging to execute including the geological conditions at the site, the major seasonal variations in weather (from -30°C in the winter to 30°C in the summer), wildlife considerations (such as bird nesting and bear denning) and the need to attract a large workforce to a non-urban location. BC Hydro conducted significant studies, analyses, investigations, consultation, and planning activities before the Project commenced construction in July 2015 to understand and account for these challenges.

However, even with this preparation, the Project was more complex and challenging than anticipated by BC Hydro and its contractors. Initially, both BC Hydro and its contractors faced difficulties in scaling up resources and commencing construction activities across multiple work fronts following the Final Investment Decision. This led to budget increases for project resourcing, schedule changes and contractor claims. While the performance and capacity of BC Hydro and its contractors improved as the Project progressed, these resources should have been scaled up more proactively and sooner.

The Final Investment Decision budget for the Project, approved in December 2014, was \$8.775 billion. This budget was increased twice. First, in February 2018, to \$10.7 billion and again, in February 2021, to \$16 billion. [Table 1](#) below shows the budget increases and associated main cost drivers. Final actual costs will be known upon full project completion. BC Hydro expects to complete the Project within the 2021 Approved Budget.

1 **Table 1 Main Budget Cost Drivers on the Project**

Description	(\$ billion)
Final Investment Decision Budget (December 2014)	8.8
Generating Station and Spillways (higher contract bid prices and tension cracks) ²	0.6
Main Civil Works (tension cracks, contractor claims, and equipment investments)	0.3
Increase to Project resources	0.4
Other (i.e., transmission redesign, highway 29 realignment and Project reserve increases)	0.6
2018 Approved Budget (February 2018)	10.7
COVID-19 Pandemic	1.6
Right Bank Foundation Enhancements	1.1
Main Civil Works (delays and claims, schedule recovery, and equipment investments)	1.1
Increase to Project resources	0.7
Other (i.e., increases for balance of plant and generating station and spillways; updated highway 29 design and additional worker accommodation)	0.8
2021 Approved Budget (February 2021)	16.0

2 The first budget increase in 2018 was primarily driven by higher costs for the Main
 3 Civil Works and Generating Station and Spillways contracts. This was due in part to
 4 additional work following two tension cracks on the left bank slopes that were being
 5 excavated, and the resulting one-year river diversion delay. There were also
 6 increases due to higher-than-expected contract bid values for the Generating Station
 7 and Spillways contract, as well as contractor claims, and equipment investments
 8 related to the Main Civil Works.

9 The remaining budget increases included: \$0.4 billion for increases to Project
 10 resources, including engineering, project management, and construction

² A tension crack is a large surface crack that may form when there is ground movement.

1 management resources; and \$0.6 billion for the transmission tower redesigns based
2 on different as-found geotechnical considerations along the transmission corridor,
3 the Highway 29 realignment, in part to address concerns from several First Nations
4 on construction in culturally sensitive areas, and an increase to the Project reserve.

5 The second budget increase in 2021 was driven by several factors. This included the
6 COVID-19 pandemic, which accounted for \$1.6 billion of the increase, due to the
7 loss of approximately 60% of the summer 2020 construction season, delaying the
8 Project's in-service date by one year. Additionally, geotechnical challenges on the
9 right bank, which required foundational enhancements for the stability of the
10 spillways, dam core, and powerhouse and enhancements to the approach channel
11 to reduce the risk of leakage, contributed \$1.1 billion to the increase. Main Civil
12 Works claims, schedule recovery, and equipment investments resulted in a further
13 \$1.1 billion increase.

14 An additional \$0.7 billion was required for increases to Project resources, including
15 engineering, project management and construction management resources; and the
16 remaining \$0.8 billion was for design changes for the Balance of Plant and
17 Generating Station and Spillways, higher costs associated with the Highway 29
18 realignment; expansion and extended duration of worker accommodation; and
19 changes related to other infrastructure work.

20 While the COVID-19 pandemic was unforeseen, the potential for geotechnical
21 challenges on the left bank and right bank was understood. However, at the time of
22 the Final Investment Decision in 2014, the likelihood of these issues arising was
23 considered low due to the extensive geotechnical investigations and analyses
24 conducted over many years prior to construction.

25 Consistent with industry best practices, the methodology applied to the Project's cost
26 risk analysis meant that the full financial impact of high-consequence, low-probability

risks, such as geotechnical issues on the left bank and right bank, and unforeseen risks such as the COVID-19 pandemic, were excluded from the approved Project budget.

Accordingly, the Project contingency and Project reserve were both insufficient to absorb the full costs when these high-consequence, low-probability risk events materialized. Ultimately, the right bank foundation enhancements account for \$1.1 billion of the overall budget increase, the left bank tension cracks account for \$0.6 billion, and the COVID-19 pandemic accounts for \$1.6 billion. The Project Contingency and Reserve amounts available to fund these types of cost increases were \$794 million and \$440 million, respectively, in the 2014 Final Investment Decision budget and \$858 million and \$708 million, respectively, in the 2018 Approved Budget.

1.2 Site C is a Significant Achievement and will Deliver Long-Term Value

While these challenges led to significant budget increases, they were also met with ingenuity and determination by the Project team. The ambition and magnitude of Site C was considerable: an earthfill dam with 15.5 million cubic metres of material; a powerhouse and intake structure with 255,000 cubic metres of concrete and 17.6 million kilograms of rebar; six 10.2 metre diameter penstocks; six turbines and generators; three spillway gates and six low-level gates; a foundation with 1.7 million cubic metres of roller-compacted concrete; an approach channel requiring 13.8 million cubic metres of excavation; two diversion tunnels each approximately 750 metres long; new transmission infrastructure, including a substation and two 75 kilometre-long 500 kV transmission lines with 405 towers; reservoir clearing; and the realignment of 30 kilometres of Highway 29. Its completion is a substantial engineering and technical accomplishment, and BC Hydro's ratepayers will benefit from these assets for decades to come.

1 BC Hydro is proud of the Project's safety record. Over 65.6 million work hours were
2 completed from July 2015 to July 2025 with no fatalities and a lost time injury
3 frequency of 0.17.³ This rate is well below WorkSafeBC's lost-time injury frequency
4 rate of 2.32 for heavy construction projects in B.C. and equates to one lost-time
5 injury at Site C for every 14 reported on similar projects.

6 The Project implemented strong governance and leadership with support, guidance,
7 and advice from third-party independent experts. The Technical Advisory Board, a
8 panel of global engineering and construction experts, provided technical guidance
9 and support to the BC Hydro Board of Directors, Project Assurance Board and
10 BC Hydro Management and played a key role in evaluating complex technical
11 solutions.

12 The Project also employed an integrated leadership model, operating as a separate
13 business unit with its own dedicated functional groups such as Safety, Environment,
14 Engineering, Indigenous Relations, Project Management Office, Contracts and
15 Construction Management with a direct reporting relationship to the President and
16 CEO. This structure helped to drive the necessary tone and approach across a
17 broad range of organizational challenges. Daily operations involved substantial
18 expenditures and swift removal of obstacles, which was managed efficiently by the
19 Project's integrated leadership team. The Project implemented rigorous procurement
20 processes that attracted large Canadian and international entities with extensive
21 knowledge and experience. More than 2,000 contracts of a variety of magnitudes
22 were awarded throughout the Project's lifecycle. For the major contracts,
23 procurement was based on detailed planning and risk analysis, considering factors
24 such as schedule, design complexity, cost certainty, and opportunities for

³ Site C and WorkSafe BC – Heavy Construction, Lost Time Injury data is the average for the period of 2016 to 2024.

1 Indigenous participation. The bidding and evaluation phase was comprehensive and
2 included thorough review and evaluation.

3 Significant efforts were also made to advance Indigenous economic opportunities
4 with over \$847 million in procurement awarded to Indigenous-designated companies
5 and a peak workforce of 539 Indigenous employees. The Project also secured both
6 the Environmental Assessment Certificate and Federal Environmental Decision
7 Statement, meeting over 170 conditions, and obtaining approximately 650 provincial
8 and federal permits, water licences, and construction authorizations. This high level
9 of compliance was achieved without any schedule delays, reflecting effective
10 planning and coordination throughout the approval and permitting process.⁴

11 **1.3 BC Hydro Used an Established Process to Identify Lessons** 12 **Learned**

13 BC Hydro has a corporate framework for managing projects – Project and Portfolio
14 Management – which was adopted for the Project. BC Hydro’s Project and Portfolio
15 Management framework is well-established, and its maturity and adherence to
16 industry best practices has been independently verified and was recognized as
17 industry leading in 2016 and 2021. The framework includes a lessons learned
18 practice to support project teams in identifying, analyzing, and applying insights to
19 improve the delivery of current and future projects. These lessons incorporate
20 learnings from both successes and challenges on the Project.

21 A significant number of data points were collected during the Project’s construction
22 phase to inform potential lessons learned. Following BC Hydro’s Project and
23 Portfolio Management process, these data points could be entered by any Project
24 team member. Lessons learned were then further developed, validated, and refined
25 through a series of workshops over the past year including with the Project

⁴ Further information on successes and challenges is provided in section 2 of the report.

1 Assurance Board and BC Hydro Executives. These lessons build upon earlier
2 recommendations from the 2021 Site C Project Review conducted by Mr. Peter
3 Milburn, as well as guidance provided by oversight bodies including the Independent
4 Oversight Advisor, Ernst & Young, and the Technical Advisory Board, and feedback
5 through consultation with Indigenous Nations and local communities.

6 **1.4 Lesson Learned on Site C Reflect Challenges, Achievements,** 7 **and a Commitment to Continuous Improvement**

8 This report is the culmination of the lessons learned process on the Project and
9 identifies 29 lessons across the six areas identified by the Commission.

10 **1.4.1 Lessons Learned Regarding the Project Budget**

11 Before addressing the lessons learned in each area identified by the Commission,
12 this report considers lessons learned regarding the Project budget. As a result of
13 several challenges during Project construction, the Final Investment Decision budget
14 approved in December 2014 was about half the amount of the current approved
15 budget to complete the Project.

16 As discussed above, the potential for geotechnical challenges on the left bank and
17 right bank was understood; however, the probability that these high-consequence
18 geotechnical challenges would occur was considered low. With the support of the
19 Technical Advisory Board, comprised of international engineering and construction
20 experts, the Project followed an observational approach, which meant that any
21 actual geotechnical differences from the pre-construction geotechnical investigations
22 would be addressed through design changes during Project construction. While this
23 is an accepted approach for similar projects, it carries an inherent risk that initial
24 budget amounts may not be sufficient for major geotechnical challenges and
25 consequential design changes if they materialize. Such high-consequence,
26 low-probability risks did materialize on the Project, requiring increases to the Project

1 budget. The cost impact of these low-probability, high-consequence geotechnical
2 risks materializing was then compounded by the COVID-19 pandemic, which
3 occurred at the peak of planned Project construction, maximizing the cost and
4 schedule impacts.

5 While the initial Project budget was insufficient to adequately absorb the full actual
6 costs incurred from known low-probability, high-consequence geotechnical risks, as
7 well as from a major unknown risk in the COVID-19 pandemic, the lessons to be
8 learned for budgeting on future major capital projects are not straightforward.

9 Requiring future major capital projects to either advance designs further prior to final
10 Project approval or have project contingency and reserve amounts augmented
11 based on low-probability, high-consequence events, or arbitrary amounts for
12 unforeseen risks, would likely be speculative, cost prohibitive, and against accepted
13 cost estimating best practices.

14 However, several of the lessons learned discussed in this report under the six areas
15 identified by the Commission should mitigate or reduce the potential for similar
16 budget challenges from occurring on future major capital projects.

17 **1.4.2 Summary of Lessons Learned on Contract Management**

18 Regarding Contract Management, a key challenge on the Project was the use of
19 consortiums with limited Canadian experience and minimal experience working
20 together. Proponents often form consortiums when bidding on scopes of work for
21 major projects because of the broad expertise and capabilities required. This
22 introduces several complexities that must be considered in the evaluation criteria
23 such as financial and liability requirements, the experience of the consortium team
24 members working together, their experience working in British Columbia or Canada,
25 their experience working on major projects, and the ability of the consortium to ramp
26 up their activities at the pace required for multiple active work fronts. For future
27 major projects, where applicable, evaluation criteria must be defined for these

1 considerations, and procurement submissions should include and be evaluated on
2 an entity integration plan outlining roles and responsibilities, interdependencies
3 between entities, authority limits, and labour attraction and retention strategies.

4 The Project selected a design-bid-build model for the delivery of most civil scopes of
5 work because it would have been cost prohibitive to transfer geotechnical risks to
6 contractors. Under this model, the Project retained design responsibility for most of
7 the scope of work and employed an observational approach, which meant that any
8 actual geotechnical differences from the pre-construction geotechnical investigations
9 would be addressed through design changes during Project construction. Actual
10 geotechnical differences encountered on the Project led to design changes,
11 schedule impacts and contractor claims.

12 A key challenge from these design and schedule changes was the capacity required
13 to assess and address contractor claims and other commercial issues. While the
14 Project ramped up resources and implemented several actions to proactively
15 manage claims over time, including a dedicated commercial management team,
16 these resources should have been scaled up more proactively and sooner. Going
17 forward, it will be critical for BC Hydro to continue to build its commercial capacity
18 and to plan to ramp up dedicated contract and commercial management resources,
19 with representation on the project leadership team, earlier in the project lifecycle to
20 effectively manage the commercial impact of contractor claims. Where applicable,
21 future major capital projects should ramp up these resources from the outset.

22 **1.4.3 Summary of Lessons Learned on Risk Management**

23 The Project followed BC Hydro's existing risk management framework and practices.
24 As of August 2025, there were over 1,100 active or closed risks in the Project Risk
25 Register. Risk management on the Project, including the implementation of
26 mitigation plans, either reduced the cost and schedule impacts of risks that
27 materialized or successfully mitigated the risk altogether. For example, despite the

COVID-19 pandemic reducing construction by 60% from the initial scheduled plan for summer 2020, the Project successfully re-prioritized activities to ensure diversion of the Peace River was still achieved by October 2020, avoiding additional delays and cost.

Improvements were made to risk management throughout the Project lifecycle, including in 2019 in response to a report by Ernst & Young, and in 2020 and 2021 in response to the Site C Project Review by Mr. Peter Milburn. These improvements included: combining various risk registers into a single central risk register and increasing the visibility and reporting of identified risks; improved mapping of identified risks to the cost and schedule risk analyses; increasing the frequency of cost and schedule risk analyses; better applications and systems; adding more experienced resources to the central risk management team; and a greater role for the Project Assurance Board and the Independent Oversight Advisor. BC Hydro should have implemented these improvements more proactively and sooner. Future major capital projects should consider implementing these improvements early, where appropriate.

1.4.4 Summary of Lessons Learned on Geotechnical Risk

Extensive geotechnical studies and investigations were completed from 1975 to 2014, prior to the Final Investment Decision. These activities informed the development of a detailed geotechnical model, choices on the location, design and schedule of major Project assets, and implementation of an observational approach. They also informed the procurement approach by leveraging the capabilities of the consortiums with a design-build procurement model for the temporary works on the Project and a design-bid-build procurement model for the permanent works, including unit prices for the two largest civil contracts. Both approaches provided flexibility to adapt the Project design as geotechnical conditions were uncovered through Project construction.

The left bank had been extensively investigated and studied prior to Project construction. It was known to contain many ancient slides with weak bedding planes, which were planned to be removed during excavation. After the two tension cracks occurred on the left bank, it was determined that these weak planes extended beyond the area BC Hydro initially identified. This required a redesign of the slope excavation and planned construction roads. [Figure 2](#) below shows, in the right centre, construction of a toe berm in March 2017 on the left bank as a temporary remediation measure for the tension cracks.

Figure 2 Left Bank Toe Berm Construction in March 2017



The right bank had also been extensively investigated prior to Project construction. During construction, instruments were installed to monitor the response of the right bank foundation. In 2018, small displacements began to occur on a bedding plane below the roller compacted concrete buttress, prompting BC Hydro to re-assess the

1 expected strength of the bedrock at this depth. Ultimately, BC Hydro, in agreement
2 with the Technical Advisory Board, concluded that significant foundation
3 enhancements would be required. BC Hydro and the Technical Advisory Board
4 considered several solutions and decided to implement structural enhancements
5 within the foundation of the spillways and powerhouse and an enhancement to the
6 approach channel to reduce the risk of leakage. [Figure 3](#) below shows the approach
7 channel, power intakes, and spillway intake structures under construction in August
8 2023, as BC Hydro implemented the right bank foundation enhancement works.⁵

9 **Figure 3** Approach Channel, Power Intakes, and
10 **Spillway Intake Structures in**
11 **August 2023**



12 Throughout these challenges, the Project benefited greatly from a large and varied
13 group of external independent experts from around the world, who provided advice,

⁵ The approach channel is in the foreground, with the intake gates in the centre and spillway gates in the centre right. The earthfill dam is under construction in the background.

1 knowledge, and guidance on complex technical investigations, designs, and
2 construction solutions. Future major capital projects should consider retaining
3 third-party experts early in the project development cycle and should consider
4 establishing a Technical Advisory Board, when applicable. In addition, thorough
5 investigations should be conducted early to inform design considerations and to
6 develop strong geotechnical models to evaluate performance and inform required
7 design enhancements.

8 While the Project implemented these activities, significant geotechnical challenges
9 still occurred, with substantial cost and schedule impacts. This emphasizes the
10 importance of future project teams taking steps to ensure that project governing
11 bodies are aware of low-probability, high-consequence risks that are not fully
12 reflected in the project budget. The budget and schedule impacts of these
13 high-consequence, low-probability risks materializing must be clearly communicated.

14 **1.4.5 Summary of Lessons Learned on Project Governance**

15 The Project Assurance Board, Ernst & Young's role as an Independent Oversight
16 Advisor, and the Technical Advisory Board all contributed valuable advice and
17 guidance to the Project. This included oversight and feedback on critical Project
18 decisions such as the selected solution for the right bank foundation enhancements,
19 as well as guidance and input on high-priority risks and mitigation strategies
20 monitored in the Project risk register. Effective governance supported the Project by
21 enhancing due diligence in decision-making, rigorously evaluating and validating
22 management plans, ensuring clarity in decisions, and providing continuous oversight
23 of schedule and cost risk analyses.

24 The mandate, expertise, and independence of the Project's governing bodies were
25 improved over time and future major capital projects should take steps to implement
26 these improvements from the beginning, where appropriate. These improvements
27 included: developing and updating a skills matrix for the project's governing bodies

so that the expertise matches the project's needs as the project advances through construction; providing sufficient time for the governing bodies to consider the matters on which their advice is sought; establishing sub-committees where additional advice and oversight is required; and ensuring the independence of the Project Board from other governance bodies (such as the BC Hydro Board of Directors and the Executive Team) and making independent external advice available to them.

1.4.6 Summary of Lessons Learned on Indigenous Consultation and Community Engagement

BC Hydro has approached Indigenous Consultation with an appreciation that the Project will have impacts to Treaty rights pertaining to the use of land and resources for traditional purposes during both construction and operation. The Project benefited from early and extensive consultation, starting before the environmental review process began and continuing through construction. Several First Nations commenced court proceedings regarding the Project, all of which were resolved by agreement or court decisions. In their decisions, the courts concluded that consultation was deep, meaningful, and adequate. Currently, BC Hydro has entered into Impact Benefit Agreements with eight First Nations. We recognize the importance of continuing to work with Indigenous Nations as we advance future major projects in recognition of both historical and potential future major project impacts.

Consultation included direct engagement with Indigenous Nations, Project update meetings, multi-Nation forums, and at times, use of neutral facilitators.

Environmental and cultural monitoring programs directly involving Indigenous Nations were established from the outset, with early engagement on culturally sensitive sites to inform Project planning and design. Early planning also helped to

1 identify and support procurement opportunities for Indigenous Nations' businesses
2 and businesses designated by Indigenous Nations.

3 In 2018, BC Hydro launched regular Environment and Permitting Forums with First
4 Nations to serve as a platform to discuss construction activities, permitting
5 requirements, and environmental and Indigenous concerns. Attended by BC Hydro
6 subject matter experts and representatives from federal and provincial regulatory
7 bodies, the forums enabled direct and ongoing dialogue and feedback. Input from
8 these forums was actively integrated into permit applications and environmental
9 mitigation and management programs and facilitated the timely issuance of permits.
10 This approach is now being adapted for other BC Hydro initiatives, including the
11 North Coast Transmission Line projects.

12 With regard to Community Engagement, the Project was responsive and proactive in
13 response to stakeholder inquiries and concerns. A dedicated engagement team, with
14 representation on the Project leadership team, supported the identification and
15 resolution of issues raised through engagement. Future major projects should
16 continue with these approaches.

1.5 Table of Lessons Learned By Subject Area

[Table 2](#) below sets out the lessons learned on the Project, organized by the areas identified by the Commission.

Table 2 Site C Lessons Learned

Subject area	#	Lesson
Contract Management	 CM1	Establish criteria for the evaluation of consortium bidders on major contracts with special consideration to the capacity and capabilities of parties to be able to ramp up delivery across all required work fronts.
	 CM2	Assess and and manage the impact of numerous work front interfaces among contractors to optimize performance and minimize potential claims.
	 CM3	Implement processes and have senior leadership involved early to set the tone and expectations to assess and address contractor claims in a timely manner to avoid significant cost claims remaining open at contract completion.
	 CM4	Develop and provide project teams with the training, tools and processes, including production tracking, to support consistent contract management across the scope and duration of the project. The project team needs to know and understand the contract and schedule prior to starting work.
	 CM5	Establish and maintain an integrated project schedule across all contracts to evaluate schedule variances and changes across a large complex project. The overall schedule and cascading interface risks are difficult to transfer and need to be managed by the project team with oversight by senior leadership.
	 CM6	Establish processes to support early and continuous engagement with contractors (including planned, proactive, and responsive engagement). Facilitate early contractor and owner relationship expectations and manage the relationship through the lifecycle of the project.
Risk Management	 RM1	Consolidate and enhance risk registers to improve cost risk estimates and provide more consistent analysis. The use of a central risk register allows for better availability across the project and reporting to governing bodies.
	 RM2	For very large complex projects, implement cost risk analysis and schedule risk analysis processes that are complete and transparent and include effective methods to quantify risks.
	 RM3	Organize and size the project risk team for the complexity of the project, ensure it includes qualified resources with the appropriate knowledge, experience, and expertise.
	 RM4	Ensure risk reporting is clear and timely and provides early visibility to the potential for low-probability, high-impact events.
	 RM5	Ensure project governing bodies are aware of the low-probability, high-consequence risks for the project, and that they fully understand budget and schedule impacts if these risks materialize.
	 RM6	Capitalize on the opportunities provided by large complex projects to develop internal and external knowledge, and expertise for future projects.
	 RM7	Implement effective early project planning to mitigate or reduce project cost and schedule impacts.

Subject area	#	Lesson
Geotechnical Risk	 GR1	Identify and engage geotechnical experts early, particularly on complex issues, and maintain involvement throughout design and major change processes.
	 GR2	Conduct thorough investigations to inform design considerations early and to frame baseline information.
	 GR3	Develop robust geotechnical models to evaluate performance and proactively support required enhancements.
	 GR4	Foster communication and collaboration with any Technical Advisory Board (TAB), engineering, geotechnical specialists, and contractors to resolve issues in a timely manner.
Project Governance	 PG1	For large complex projects, evaluate project complexity and risk early, and consider the role of an independent project board, including members with applicable skills and knowledge.
	 PG2	Establish governance sub-committee(s) and engage special advisors or experts, as needed, to supplement governing bodies' knowledge and experience.
	 PG3	Ensure clear and detailed terms of reference and communication protocols are established for all governance bodies, and if applicable, with any external advisors and/or the independent oversight advisor.
	 PG4	Establish processes, tools, and reporting to ensure governing bodies obtain effective and timely information.
Indigenous Consultation	 IC1	Enable early consultation and streamline ongoing engagements, including use of permitting and environmental forums.
	 IC2	Create environmental and cultural monitoring programs from start of project.
	 IC3	Plan and build support for Indigenous procurement opportunities.
	 IC4	Support training and employment opportunities for Indigenous workers and Indigenous awareness training for all project resources.
Community Engagement	 CE1	Plan and implement responsive stakeholder engagement early and maintain throughout the project lifecycle.
	 CE2	Adapt organizational structures for stakeholder engagement to the evolving scale and duration of the project.
	 CE3	Adopt varied and responsive communications channels over the project lifecycle.
	 CE4	Use technology and tools to enhance stakeholder engagement.

1.6 Next Steps to Project Completion

With the successful filling of the reservoir, achievement of first power in 2024, and the sixth and final generating unit placed in service in August 2025, the Project has completed its most significant milestones. BC Hydro is now focused on safely completing the remaining scopes of work required to bring the Project to full completion, which is expected by March 2027. Remaining key activities, which are expected to be completed within the current approved Project budget and schedule, include:

- Finalizing Project documentation and transitioning assets from the Project to BC Hydro Operations;
- Addressing deficiencies and closing out contracts;
- Advancing site reclamation and completing remaining construction activities (e.g., backfilling the diversion tunnels, final site roads, and removal of the temporary construction bridge); and
- Development of a Project Completion and Evaluation report to be filed with the Commission in 2027.

As these remaining activities are advanced, BC Hydro will continue to uphold its commitments, including those related to environmental monitoring and continued engagement with local communities and Indigenous Nations.