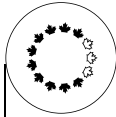
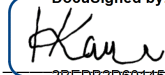
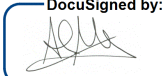



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NATIONAL CAPITAL COMMISSION
 COMMISSION DE LA CAPITALE NATIONALE

		No.	2024-D21
		To	Board of Directors
For	INFORMATION	Date	2024-10-01
Subject/Title			
Alexandra Bridge Replacement Project – Project Update			
Summary			
This submission provides an update on the progress of the Alexandra Bridge Replacement Project (ABRP) and outlines the upcoming key milestones. It includes the presentation of three (3) design concepts to be introduced to the Board in advance of public consultation 2, which is scheduled to commence following the Board meeting on October 1, 2024.			
Risk Summary			
The budget and schedule risks are currently being assessed and will be incorporated into the Treasury Board Submission, which is being led by PSPC. In addition to these risks, the project is also facing criticism from external stakeholders who are either opposing the deconstruction of the existing bridge or publicly advocating for alternative designs.			
Recommendation			
Not Applicable – The submission is for information			

Submitted by:	
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1. Strategic Priorities

- NCC Corporate Plan 2024-2025 to 2028-2029 – Strategic Direction #2:
 - Ensure a picturesque and natural National Capital Region, through conserving and enhancing natural assets, cultural landscapes and built heritage under the NCC's stewardship.
- NCC Corporate Plan 2024-2025 to 2028-2029 – Strategic Direction #3:
 - Contribute to a thriving, connected and sustainable National Capital Region that inspires Canadians, through the planning, development and improvement of the NCC's assets.
- NCC Corporate Plan 2024-2025 to 2028-2029 – Priority #2:
 - Plan, rehabilitate and revitalize key assets and transportation networks in the National Capital Region.
- NCC Corporate Plan 2024-2025 to 2028-2029 – Priority #4:
 - Demonstrate national leadership in achieving an environmentally sustainable and climate-resilient National Capital Region.

Government of Canada

- Budget 2019 – Investing in the Middle Class
- Minister of Public Services and Procurement Canada (PSPC) Mandate Letters (2019, 2021) directed that the bridge be replaced within ten years.

2. Authority

National Capital Act, sections 10 (1), 10 (2) and 12.

3. Context

This presentation follows the *2024-D15 Alexandra Bridge Replacement Project – Project Update*, presented to the Board in June 2024.

As highlighted previously, following the completion of multiple studies undertaken by PSPC on the Alexandra Bridge, the analysis concluded that the bridge had reached the end of its lifecycle. Consequently, the Government of Canada mandated the replacement of the Alexandra Bridge.

In 2019 the pre-planning phase of the project was initiated, and an Integrated Project Team (IPT) comprised of Public Services and Procurement Canada (PSPC) and the National Capital Commission (NCC), was established to advance the replacement of the Alexandra Bridge.

In spring of 2023, PSPC retained the services of a Technical Advisor (TA) to coordinate and complete a few additional studies, as well as develop the conceptual designs for the new bridge.

The IPT, now comprising of PSPC, NCC and the TA have made significant progress advancing the project to a crucial milestone.

Since the previous update to the Board in June, the IPT has continued environmental, archaeological, and technical studies to ensure a comprehensive understanding of the project's impact and requirements.

Additionally, the project team has completed the Heritage Impact Analysis (HIA), a vital component in preserving the historical and cultural significance of the site. Along with this, extensive consultation and engagement have been ongoing with various groups, including the Independent Review Panel (IRP), Indigenous communities and various stakeholders. This active collaboration has significantly shaped and refined the development of the concepts presented in this submission.

From a procurement perspective, which is entirely led by PSPC, an advanced procurement notice has been published to secure a Progressive Design-Builder (PDB). The notice was published on August 29, and the Request for Qualification (RFQ) will be launched in September 2024.

The project has now reached a pivotal milestone: presenting three (3) thoroughly developed concept options to the public. Following the presentation to the Board, the second round of public consultation will be launched. This phase is crucial as it will gather valuable feedback on various elements of each concept. The feedback collected during this round will influence the further development and evolution of the final concept.

4. Options Analysis / NCC Staff Analysis

4.1 – Planning Framework and the Federal Approvals process

The NCC's Federal Approvals (FLUDTA) process has been triggered and, as such, a review of the proposal will involve ensuring that the proposal is compatible and in alignment with the strategic framework and policies of the following NCC Plans and guidelines:

- Plan for Canada's Capital, 2017–2067 (2017)
- Canada's Capital Views Protection (2007)
- Canada's Capital Core Area Sector Plan (2005) (currently under review)
- Confederation Boulevard Guidelines (2011) (currently under review)
- Ottawa River North Shore Parklands Plan (2018)
- Capital Illumination Plan, 2017–2027 (2017)
- Capital Pathways Strategic Plan (2020)
- Capital Design Guidelines (2023)

Given the significance and complexity of the Alexandra Bridge replacement project, the Federal Approvals review will involve a series of sequential approvals by the NCC Board of Directors at key milestones during the design development process for a new bridge. It is anticipated that the first Federal Approval milestone, 15% Schematic Design Approval, will be submitted for Board of Directors approval in Spring 2025.

The FLUDTA review of bridge design is supported by the Alexandra Bridge Replacement Performance Criteria for Bridge Design document, which incorporates policy direction and guidance from the relevant NCC plans. The performance criteria were established for the Alexandra Bridge replacement to provide transparency and clarity with respect to the project's requirements and priorities within the areas of planning, heritage protection, architecture and urban design, and sustainability. Multiple presentations to the NCC's Advisory Committee on Planning, Design and Realty to receive expert feedback have been undertaken to support the design review process. Comments provided by the committee and FLUDTA staff to the project team have supported continued advancement of the three concept options that are responsive to the project-specific Performance Criteria that must be achieved to support a staff recommendation of approval to the Board of Directors. Following the planned presentation to ACPDR in October, FLUDTA staff will be in a position to formally confirm whether the three concepts have achieved compliance with the Performance Criteria.

4.2 – Concept development

To fully appreciate the developed concepts, it is essential to understand the process by which the Integrated Project Team (IPT) arrived at the shortlist of three concepts.

The three foundational documents guiding this process are:

- Alexandra Bridge Replacement Planning and Design Principles
 - Identifies six (6) principles to guide the design development of the replacement bridge and are based on Federal plans, policies and studies.
- Alexandra Bridge Replacement Performance Criteria for Bridge Design
 - Outlines performance criteria that must inform the design concepts
- Alexandra Bridge Replacement Project Detailed Project Description (DPD)
 - The DPD provides comprehensive information about the project, which the Impact Assessment Agency of Canada uses to determine whether an Impact Assessment is required. It includes commitments that outline how potential adverse effects within federal jurisdiction and impacts on the rights of Indigenous peoples of Canada will be addressed throughout the project. The DPD identifies potential environmental and socioeconomic impacts, facilitating a thorough assessment and enabling the integration of mitigation measures to minimize adverse effects.

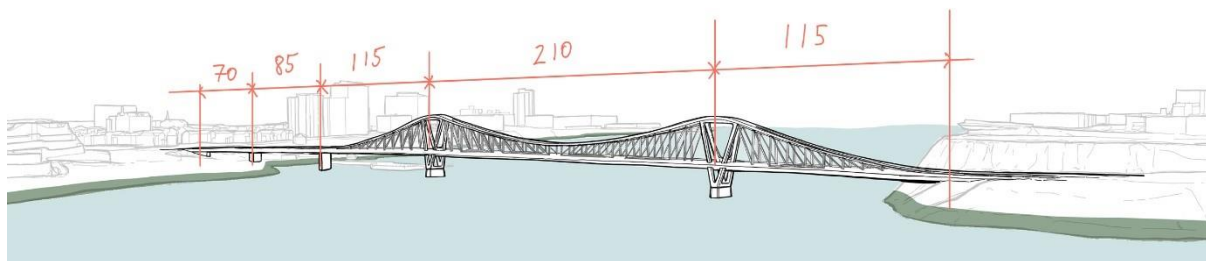
With these documents as a foundation, a comprehensive Multi-Criteria Assessment (MCA) tool, developed by the TA and used to evaluate different conception options based on the performance criteria for Bridge Design, was applied to identify the bridge typologies with the greatest potential to meet or exceed the established criteria. This analysis ensured that all three shortlisted concepts are capable of meeting, or can be developed to meet, all the Performance Criteria.

Upon selecting the most promising typologies, their evolution was significantly shaped by engagement with various stakeholders, including Indigenous communities, the independent review panel (IRP), the Advisory Committee on Planning, Design, and Realty (ACPDR), the Advisory Committee on Universal Accessibility (ACUA), the public advisory group (PAG) and the affected stakeholders. This ongoing engagement has been, and continues to be, a crucial element in the development of the concepts, resulting in the three concepts presented in this submission. These concepts demonstrate the potential for design excellence by incorporating best practices and creating a design that is both appropriate and responsive, particularly given the bridge's national historic significance and prominent location.

Each concept presented in this submission embodies a distinct design philosophy, echoed in their respective working titles: *Echo*, *Rendez vous*, and *Motion*. These titles encapsulate the core inspiration behind each concept and serve as key reference points.

4.2.1 – Echo

This concept draws inspiration from the historic Alexandra Bridge, combining heritage with modern design. Featuring two 'V' piers and a refined twin-structural truss, it honours the original bridge while celebrating environmental, craft and cultural elements, resulting in a functional bridge deeply rooted in its landscape.

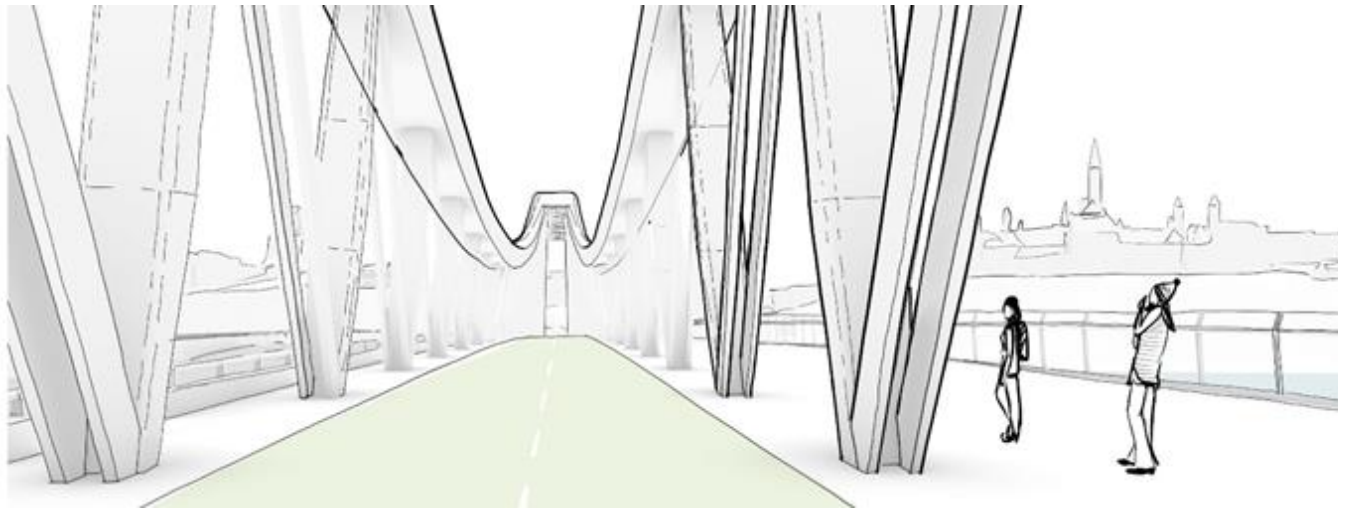


Echo – Sketch from upstream

The design combines visual references to the historic truss structure, including a distinctive silhouette with two primary support piers, and a twin plane of structure through which the cycleway passes. The straight paths create a strong axial pull for users. While the Ottawa

approach is fixed, the setback on the Gatineau side offers more flexibility. Two piers on the Gatineau bank paired with a large concave curve open up the landscape, facilitating improved public access to the shoreline. On the Ottawa side, the road hugs the Kiweki Point escarpment with the pedestrian and cycleway running parallel to it.

The bridge's vertical alignment is shaped by existing constraints including the Ottawa abutment, river clearance, and accessibility requirements. The crest point of the vertical curve is at the centre of the main span, gently sloping towards the Gatineau and Ottawa ends.

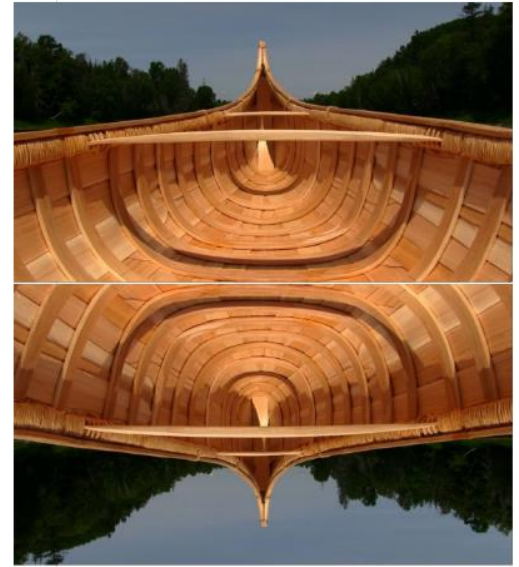
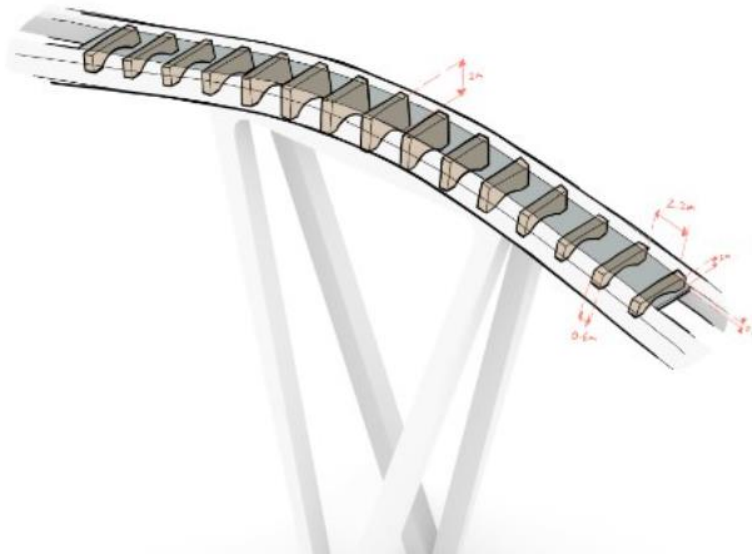


Echo – View from the cycleway

The piers are strategically placed to avoid construction conflicts and minimize environmental impact. The design harmoniously blends symmetry and asymmetry, with the high points of the main span addressing Kiweki Point and the ‘tail’ of the north approach gradually descending towards Gatineau. Although the bridge stands about three metres taller than its predecessor, the ‘pinched’ top chord at mid-span and greater distance from the shoreline reduces its overall visual impact. The twin-plane truss structure, like the original bridge, features a system of visually distinguishable tension and compression elements, creating a natural yet dynamic tri-modal split for different users.

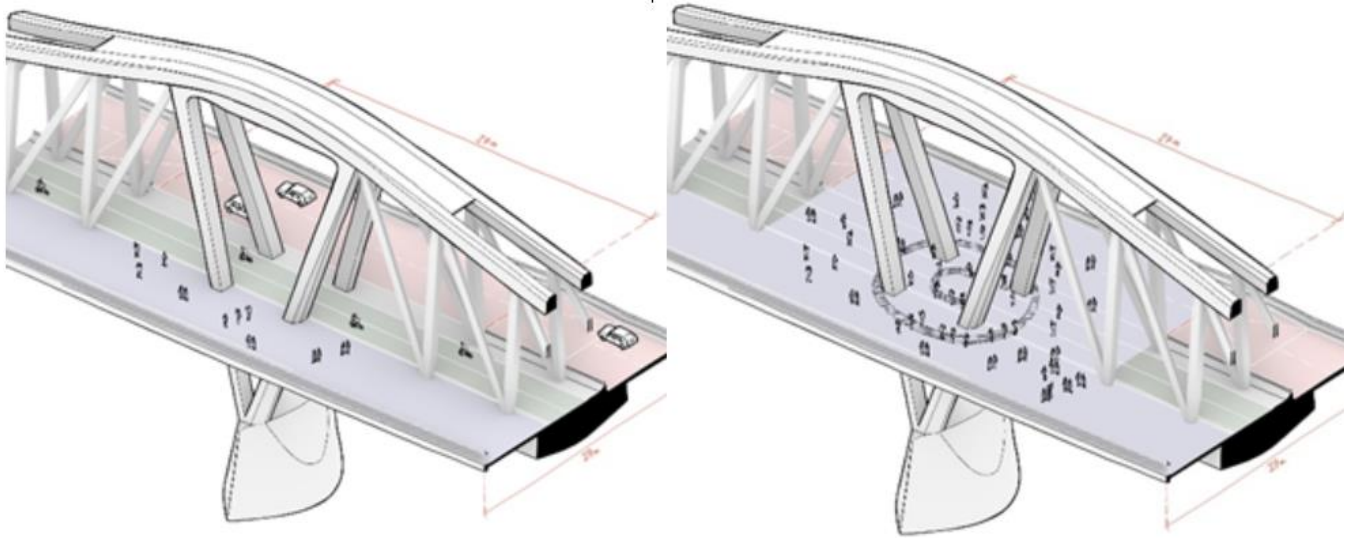
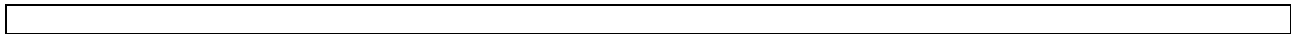
The design enriches the user experience with a rhythmic sequence of vertical structural members reminiscent of a cloister. Cyclists enjoy dynamic views through the structure’s openings, while the pedestrian zone offers secure, inviting spaces to rest. Design cues at the main support piers, which serve as key meeting points and modal transition zones, emphasize their importance.

Indigenous expressions are woven throughout, from the base of the 'V' piers shaped to resemble canoe prows to the timber compression members between the top chords evoking a canoe's yoke, celebrating the sense of place and encouraging reflection about the meaning of the river and the bridge.



Echo – Timber compression top chords

This concept maintains a distinct identity while respecting the National Capital landscape. It harmonizes the formal vertical lines of Parliament with the organic horizontal flow of the Gatineau landscape and the Canadian Museum of History. The pedestrian deck may feature timber elements to pay homage to the wooden boardwalk of Alexandra Bridge. Public spaces on the bridge are marked by the twin high points of the structure, enhanced with seating and seasonal canopies to improve user comfort.

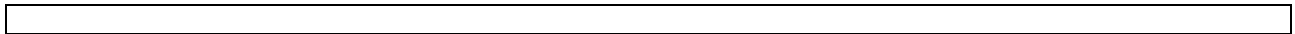


Echo – Public Space

On typical days, the bridge safely accommodates cyclists, pedestrians, and vehicles in separate lanes. For special occasions like Canada Day or National Indigenous Peoples Day, it can transform into a celebration site by excluding vehicles and slowing cyclists, allowing pedestrians to experience the big river landscape from both sides of the bridge. The design facilitates seamless transitions between these modes. Its integration with the local landscape and street networks ensures smooth connectivity, establishing it as a key element of the public realm.



Echo – View from upstream



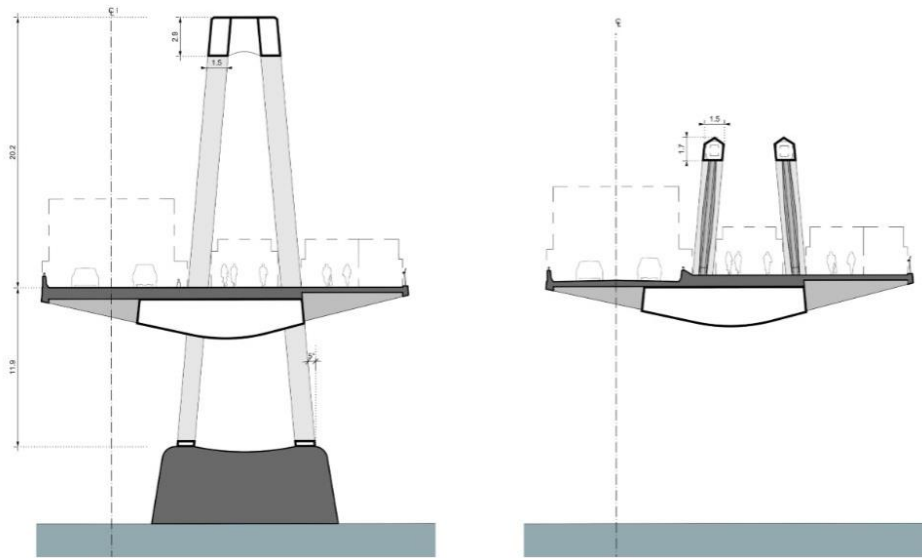
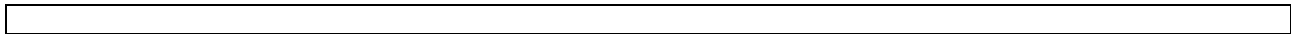
Echo – View from downstream



Echo – View from Kiweki Point



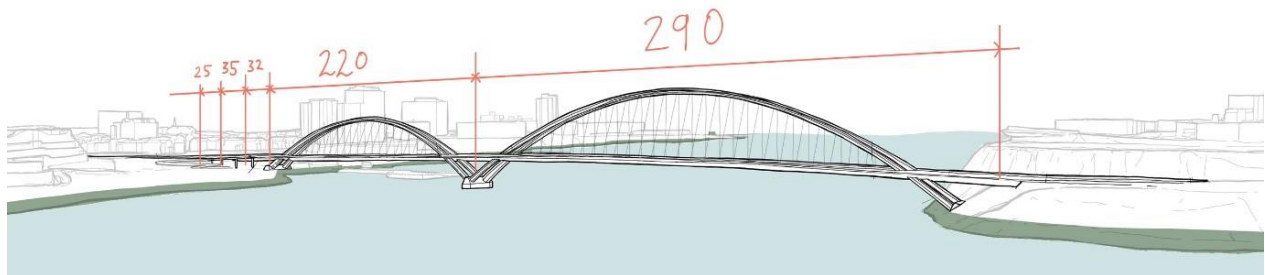
Echo – View from Rideau canal lock



Echo – Cross Sections

4.2.2 – Rendez vous

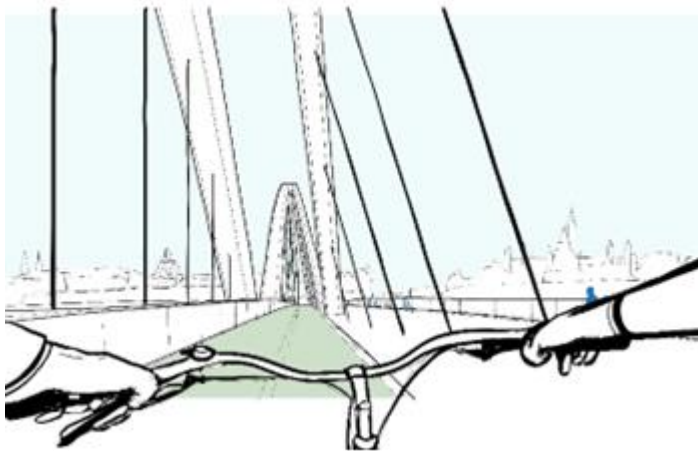
This concept highlights the river as the defining environmental and social component of the landscape. It appears to step lightly in the Ottawa River (Kichi Zībī) with a pair of graceful arches meeting at water level, acknowledging the river's importance to the Algonquin Nations and defining a collective Vision to create a bridge and urban landscape as a “Place of Exchange”, a gathering place which reflects the origins of Adawe (Ottawa) which in Anishinabe language translates as “to trade”. The twin arches create a public space that serves as a visually legible and versatile area for gatherings. The scale of the structure augments the concept of a "Big River Landscape," and the transparent arches enhance visual connections between previously separated areas on either side of the river.



Rendez vous – Sketch from upstream

The vertical alignment is influenced by constraints including the Ottawa abutment and river navigation clearance. The highest point is over the river pier where the arches meet, with gentle slopes toward both ends. The alignment accommodates river navigation and vehicle clearance on the Gatineau shoreline while minimizing gradients to improve accessibility.

A single river pier north of the navigation span is positioned to strategically balance the moderate water depth and manage the reasonable build-up of timber debris, thereby supporting the arches. Presenting a subtle asymmetry, the arches connect Gatineau's lower landscape to the higher National Capital landscape. The flowing pathways and curvaceous horizontal museum architecture on the Gatineau side harmonize with the arch forms, whose height and slenderness complement the vertical Ottawa architecture. The minimal, balanced cross-section emphasizes simplicity and elegance.



Rendez vous – View from cycleway

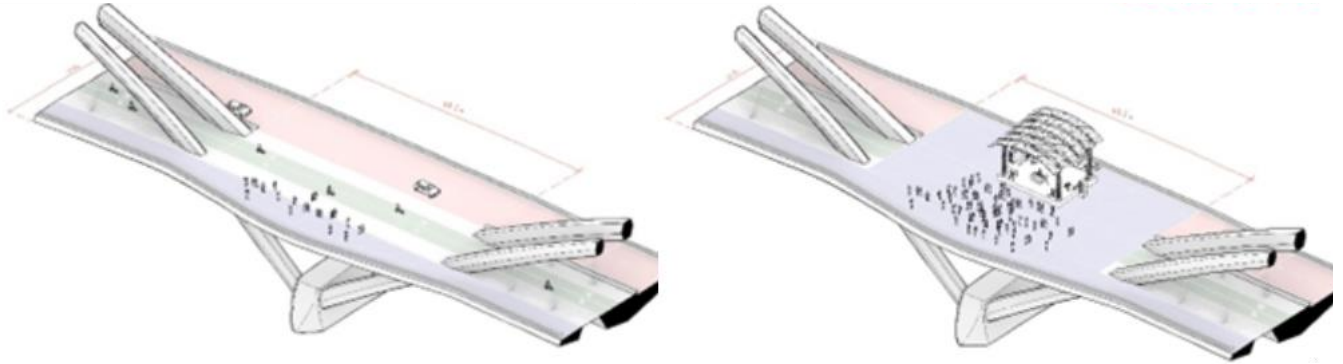
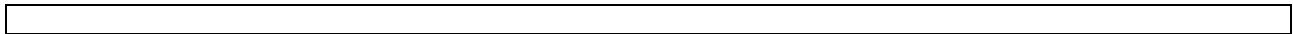
The concept features a straight alignment over the river. The Ontario approach is fixed by existing constraints, while the Gatineau side is more flexible. The smaller concave radius on the Gatineau side opens views and allows connection to the waterfront, allowing a longer straight portion so the secondary arch doesn't encroach on the river, and aligns squarely with the Laurier/Allumettières intersection. On the Ontario side, the bridge spans to land behind the existing abutment, avoiding additional shoreline piers.



Rendez vous – View from upstream

Although reaching to approximately 15 metres above the existing bridge at their crown, the arches' height and transparency amplify views, providing a feeling of openness. Each span comprises two structural elements: a primary vertical arch downstream and a secondary inclined arch upstream. The structural planes naturally separate the cycleway from pedestrian and vehicular decks, with the pedestrian deck cantilevered to align with the arch cable hangers. Below deck, the arches converge to form a triangular void, blending into the landscape at each end. Vertical hangers, though transparent, define a distinctive spatial volume when viewed axially by bridge users.

Comprising open lengths at each end, the two arches and the divided pedestrian and cycle decks reveal broad views, offering a compelling asymmetric user experience. The twin planes of cables form dramatic volumes, marked by portals at each arches' end. 'Rendez vous' envisions a ceremonial site on the bridge, fostering a universal space for cultural exchange that transcends territorial boundaries. The bridge allows for the integration of shading, lighting, flag poles, and materiality that are aligned with the concept of a gathering and resonant rendez vous.

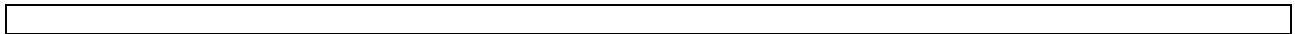


Rendez vous – Public space

The bridge's cycleway, roadway, and pedestrian paths integrate seamlessly with the city network. On special occasions, the roadway can be closed to vehicles, transforming the space into a vibrant hub for civic celebrations. Temporary structures enhance events, while the meeting point of the arches serves as a focal area for gatherings and public activities, offering opportunities for local artwork and patterns to be admired both up-close and from afar.



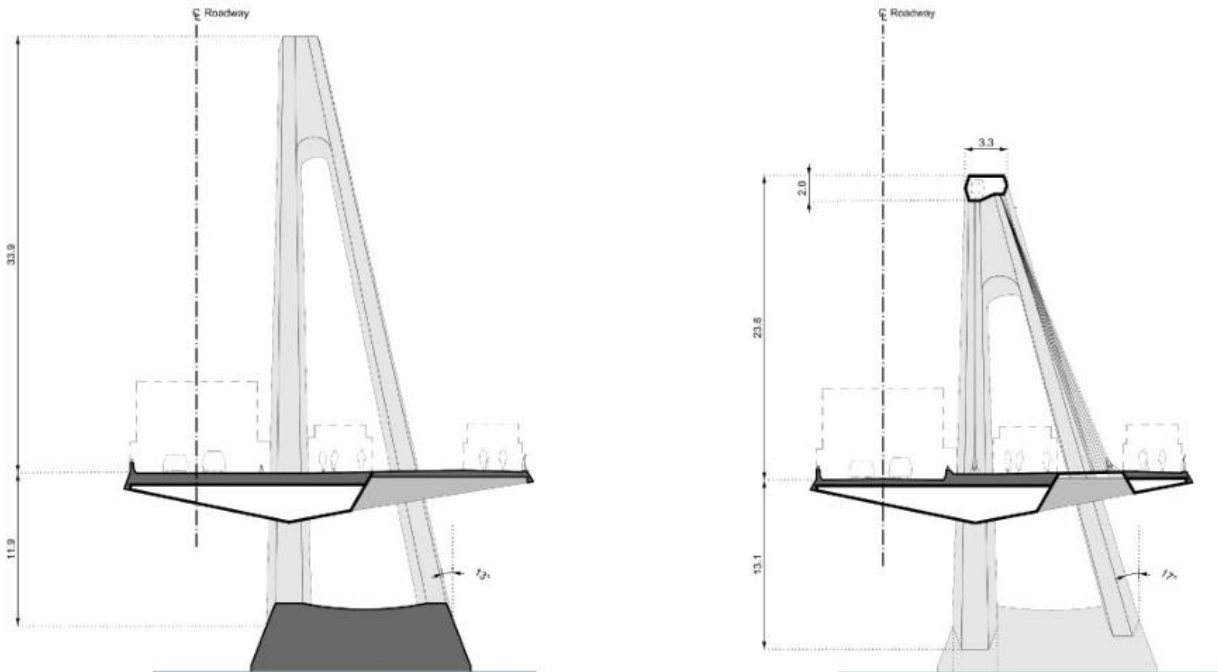
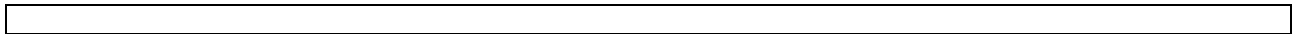
Rendez vous – View from downstream



Rendez vous – View from Kiweki Point



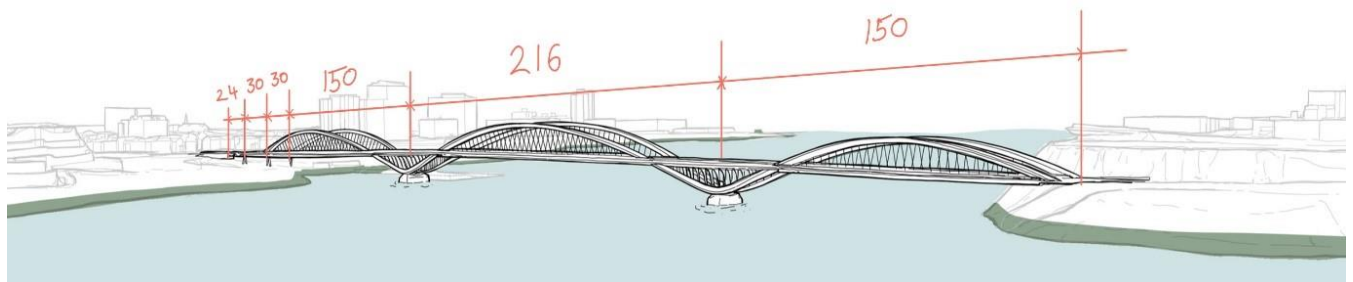
Rendez vous – View from Rideau canal lock



Rendez vous – Cross sections

4.2.3 – Motion

This concept is a tribute to the dynamic, ever-changing movement of the river. Inspired by the American Eel (Pimisi), the bridge’s graceful form reflects the eel’s fluid motion and honours late Algonquin Elder Chief William Commanda’s dedication to restoring this delicate ecosystem. The architectural approach effortlessly blends with its surroundings, weaving a harmonious tapestry of land, water, and sky.



Motion – Sketch from upstream

On a straight plan alignment, like the Alexandra Bridge, the Ottawa side of the bridge is fixed, while the Gatineau side offers flexibility due to its setback from the river, allowing for a safer

and more aesthetically pleasing approach. The smaller radius toward the Laurier/Allumettières intersection provides a true 90-degree intersection, improving safety and reinforcing the linear alignment of the bridge.

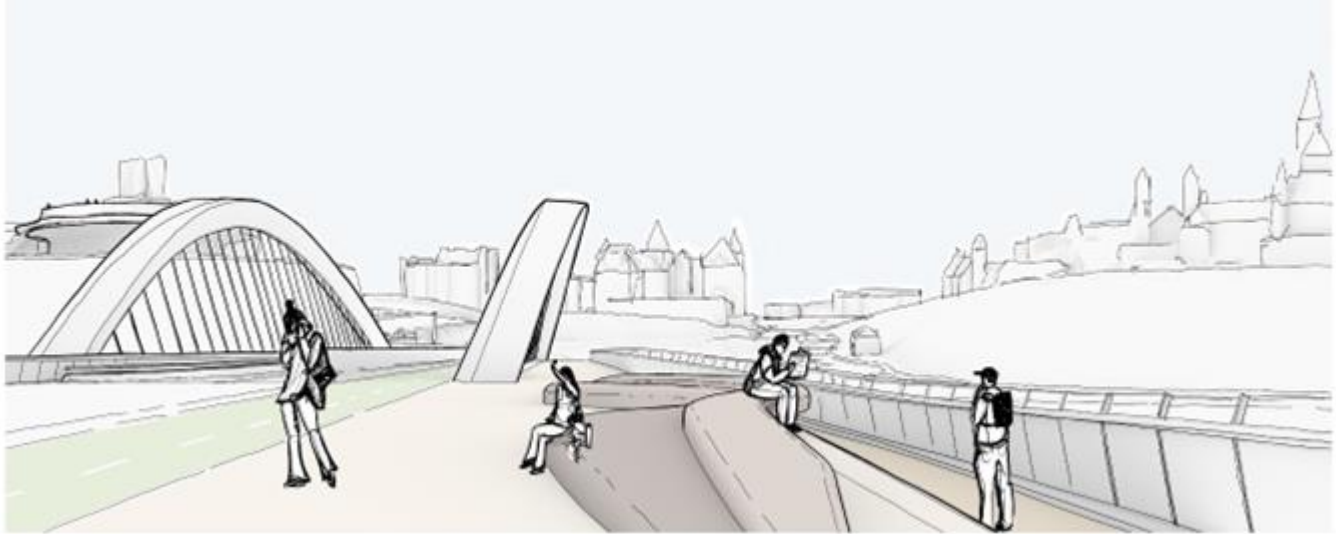
The bridge's vertical alignment is designed to accommodate existing constraints, including the Ottawa abutment, vehicle access, and river navigational clearance, while maintaining a gentle, inclusive gradient. The crest curve is centred on the main arched span, above the navigation channel, starting a gentle slope either side towards both Gatineau and Ottawa.

The bridge features two supports in the river on either side of the main navigation span, with secondary spans within the river corridor. These feature structural ribs that support the deck and echo the similar form found in the lookout on Kìwekì Point. The piers are positioned in the river to minimize the environmental impact, considering the wood debris build-up and the existing piers during its construction. The design of *Motion* presents a strong formal symmetry, with the primary central arch balanced by two outer arches, subtly evolving from the design of Alexandra Bridge.



Motion – Below deck ribs

The varying heights of the arches, with the central arch 3.5 metres higher than the existing bridge and the secondary arches 3.5 metres lower, create a dynamic silhouette. Evolving from the “Truss Type 2” form, the hybrid design features a sinusoidal top profile and a twin-planned structure. The widened planes efficiently carry the road and cycle decks, while the cantilevered pedestrian deck and public spaces on the upstream edge offer an elegant and functional cross-section. This design beautifully balances visual presence, emphasizing the undulating form's key characteristics and enhancing the pedestrian and cyclist experience.



Motion – View from the pedway

The bridge enriches user experience with a rhythmic sequence of arches rising and falling, creating distinct public spaces at the support piers. The twin planes of outward-leaning, unbraced arches create a generous 'street' for vehicular and cycle routes, while offering pedestrians a more intimate journey. The design beautifully weaves in Indigenous cultural expressions, inspired by the flowing movement and life cycle of the American Eel. At a level of detail, the architectural treatment of materials and elements including the parapets and seating can illustrate four life stages of the American Eel:

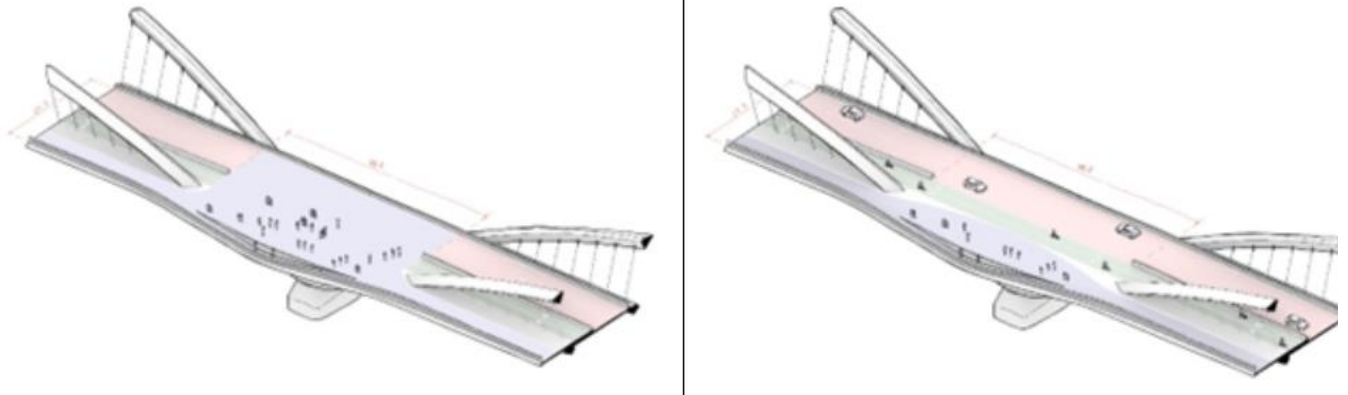
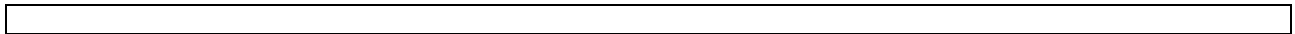
Stage 1 ›› eel egg

Stage 2 ›› glass eels (elvers)

Stage 3 ›› yellow eels (juveniles)

Stage 4 ›› silver eels (adults)

The cycleway, roadway, and pedestrian way connect to the wider city network, with level changes and safe transitions between modes. On weekends and special occasions, the bridge can be closed to vehicles, offering a space for celebration and ceremony. The public spaces on the bridge are substantial, providing areas for seating, stages, and other temporary structures.



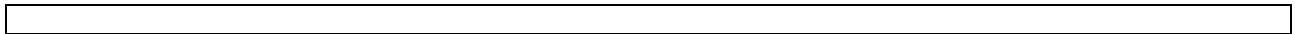
Motion – Public space

The bridge's unique silhouette and modest vertical scale blend elegantly with the National Capital landscape. The twin planes of arches gracefully mediate between the forms of the National Symbols and Kīwekī Point. The bridge serves as a gathering place, incorporating lighting, flag poles, and materials that celebrate Indigenous and non-Indigenous cultures.

The northern approach's graceful flowing ribbon seamlessly merges into the land, with generous spans and minimal river supports aligning Voyageurs Pathway and the landscape parallel to the water's flow.



Motion – View from upstream



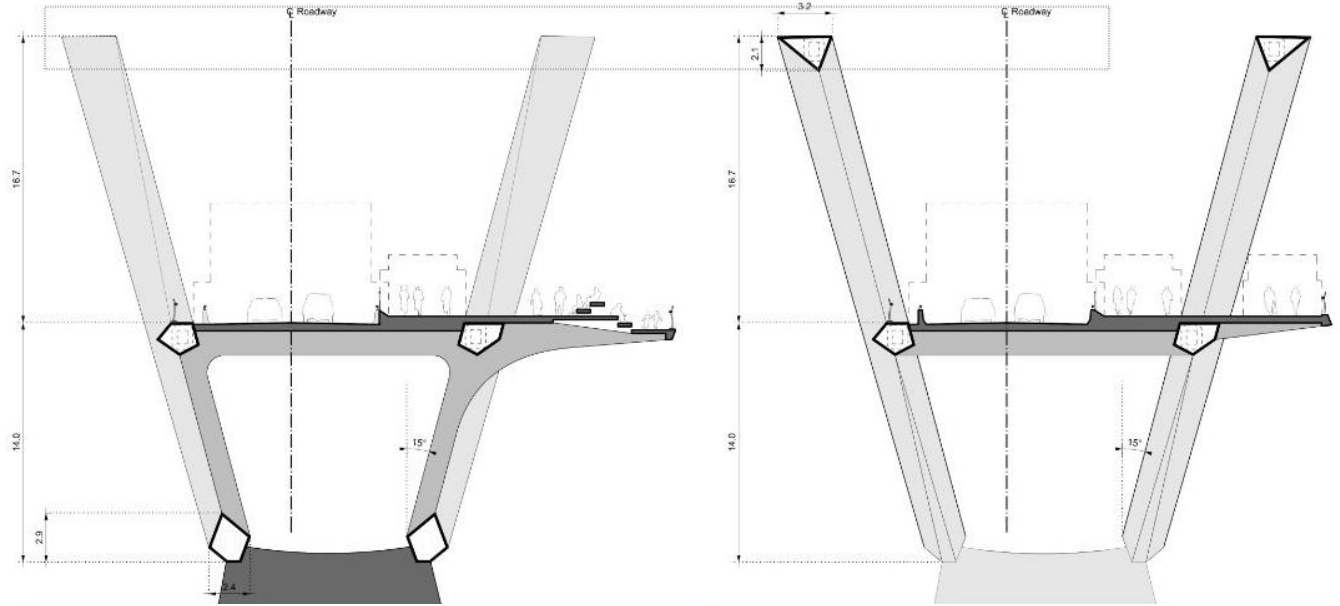
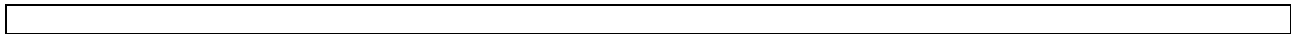
Motion – View from downstream



Motion – View from Kiweki Point



Motion – View from Rideau canal lock



Motion – Cross sections

5. Financial Details

Not applicable to this submission. The financial authority for this project will be granted through a submission to the Treasury Board.

6. Opportunities and Expected Results

Woven on a backdrop where Algonquin Anishinabe Landscape, Urban Scape, and Central Capital Landscape converge, multiple opportunities are emerging of the new concepts. The second round of public consultation will provide the public with the opportunity to give feedback and to influence the final design on various aspects, including the impact on the river, public space, active mobility, and the bridge's design.

We hope that the new bridge will become a symbol for the National Capital Region, bridging the past with a new and integrated vision of long-term planning, while creating an iconic link and cultural landscape in the Capital.

7. Alignment with Government and NCC Policies

- Budget 2019 – Investing in the Middle Class and Mandate Letters addressed to the Minister of PSPC (2019 and 2021) direct that the Alexandra Bridge be replaced within ten years.
- Gender-Based Analysis (GBA) Plus will continue to be considered throughout the design development process. The consideration of GBA Plus will be supported through the application of the Capital Design Guidelines. The guidelines provide detail on the application of GBA Plus to support the development of a design that advances equity, inclusion and that eliminates discrimination. A document summarizing how GBA Plus has been integrated as part of the design development will be submitted as part of the Federal Approval application for 15% Schematic Design.
- Alexandra Bridge Replacement Planning and Design Principles (2021): include guidelines to achieve universal accessibility through urban design considerations for pedestrian spaces that allow equitable use, flexibility in use, simple and intuitive use, perceptible information, tolerance for error, low physical effort, and appropriate size for approach and use.
- NCC’s Performance Criteria for Bridge Design (2022): includes criteria that require the new bridge and its approaches to be universally accessible, with attention to ensure all users feel welcomed, comfortable and safe, and able to engage with public spaces dedicated to pedestrians and active mobility.
- NCC’s Capital Design Guidelines (2023): clarify the NCC’s expectations for the quality of spaces, facilities, architecture and structures of national importance, in keeping with its planning and stewardship mandate. The universal accessibility guidelines therein provide direction to proactively identify, remove and prevent barriers to ensure full individual participation regardless of physical, mobility and cognitive limitations.
- The Impact Assessment Agency of Canada has decided that an impact assessment is not required for the project to replace the Alexandra Bridge. Its decision was based on the submitted Detailed Project Description that identifies mitigation measures and commitments to be implemented as part of the project to address environmental effects and to respond to feedback received through Indigenous engagement, public consultation and stakeholder engagement.
- Sustainability is identified as a key project objective. All aspects of the project including design, deconstruction and construction are being considered to ensure alignment with the Federal Sustainable Development Strategy 2022–2026. As part of the project, an application for Envision verification is planned. The framework for Envision verification is based on achieving credits of performance indicators for infrastructure sustainability addressing subjects including climate and resilience, resource allocation and quality of life.

8. Risks and Mitigation Measures

The project risks are currently being evaluated by the IPT and the TA. The Alexandra Bridge Replacement Project is complex, with a substantial number of risks for which mitigation measures are being developed. These scheduling and financial risks will be integrated into the Treasury Board Submission.

At this stage, beyond scheduling and financial risks, a significant challenge the project faces is opposition from municipal officials and public groups. Several public groups are against the demolition of the existing bridge, while others have started to publicly and through the media propose new concepts for the Alexandra Bridge. To address this, PSPC and NCC held a technical briefing for the media on July 10th to explain the rationale behind replacing the bridge. The communication teams from both organizations are also working closely to update project information and key messages on their respective websites.

9. Public Engagement and Communications

- In accordance with the project's design framework and schedule, the NCC has developed a *Public and Stakeholder Engagement Plan* to support design development.
- A first round of extensive public and stakeholder consultations was undertaken in Fall 2020/2021. The feedback received informed the development of the project's requirements as defined by the planning and design principles, the Detailed Project Description, as well as the subsequent Performance Criteria for bridge design.
- A Public Advisory Group (PAG) has been established to ensure that a diversity of stakeholder and community interests are considered throughout the design development process.
- A round of public consultation is planned for this design phase of the project including ongoing stakeholder engagement. The public consultation is planned for October 2024 and include an online survey, open house events and stakeholder meetings. Additional meetings may be held with a representative cross-section of the local population, including groups identified through GBA Plus analysis.
- Regular project updates through the PSPC and NCC project websites and project newsletter, as well as opportunities for engagement will be communicated to the public.

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- The Integrated Project Team is coordinating ongoing consultation and engagement with 19 Indigenous communities and organizations. Indigenous engagement for the project is grouped around three pillars:
 - Social and environmental impacts of the project;
 - Participation in the economic benefits of the project; and
 - Indigenous knowledge including integration of Indigenous culture and values in the design.
 -

10. Next Steps

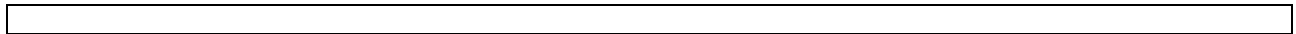
From an overall perspective, the Alexandra Bridge Replacement Project is on schedule, meaning construction is set to begin in 2028 and finish in 2032. Here are some of the upcoming major milestones:

- October 2024 – Public consultation on the three retained concepts.
- October 2024 – NCC ACPDR presentation to present the retained concept designs.
- April 2025 – Recommendation of the preferred concept to the NCC’s Board of Directors for 15% Schematic Design approval.
- Spring 2025 – Public Consultation to inform the refinement of the Schematic Design.
- Fall 2025 – Recommendation of the 100% Schematic Design for approval to the NCC’s Board of Directors.
- 2024 - 2028 – Procurement Phase – Integrated Project Team Partner engaged to support the preparation of Developed Design and construction documents.
- 2026-2027 – Public Consultation on the advancement of the Developed Design.
- 2027-2028 – Public Consultation on the Final Design.
- 2028 – Recommendation of the 100% Developed Design for approval to the NCC’s Board of Directors.
- 2028-2032 – Construction.

A project website, from NCC and from PSPC, is being updated regularly with up-to-date documents.

11. List of Appendices

N/A



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