



# Lansdowne Park Revitalization - Delivery Model Options Analysis

February 2024

—  
[kpmg.ca/infrastructure](https://kpmg.ca/infrastructure)



# Contents

<b>DISCLAIMER</b>	<b>2</b>
<b>GLOSSARY</b>	<b>3</b>
<b>1. EXECUTIVE SUMMARY</b>	<b>4</b>
1.1 Context and Scope	5
1.2 Summary of Results	5
1.3 Appeal of Zoning Amendment	6
<b>2. PURPOSE AND SCOPE</b>	<b>7</b>
2.1 Purpose of this Report	8
2.2 Project Scope	8
<b>3. OVERVIEW OF APPROACH</b>	<b>9</b>
3.1 Data Collection and Overview of Workshops	10
3.2 Workshop #1 – Identifying Delivery Options	10
3.3 Workshop #2 – Evaluating Delivery Options	14
3.4 Workshop #3 - Checking the Results of the Assessment	16
3.5 Workshop #4 - Determining which Entity Should Lead the Delivery of the Project	16
3.6 Workshop #5 - Addendum: Reviewing the Assessment Following Zoning Appeal	16
<b>4. RESULTS</b>	<b>18</b>
4.1 Delivery Model Assessment Results	19
4.2 Entity best positioned to lead the delivery of the Project	23
<b>5. CONCLUSION AND NEXT STEP</b>	<b>25</b>
<b>ADDENDUM</b>	<b>27</b>
<b>APPENDIX</b>	<b>30</b>
1. Delivery Options	31
2. Schedule comparison various models	42

# Disclaimer

This report has been prepared by KPMG LLP (“KPMG”) for the City of Ottawa (“Client”) pursuant to the terms of our engagement agreement with the Client dated October 10, 2023 (the “Engagement Agreement”). KPMG neither warrants nor represents that the information contained in this report is accurate, complete, sufficient, or appropriate for use by any person or entity other than the Client or for any purpose other than set out in the Engagement Agreement. This report may not be relied upon by any person or entity other than the Client. KPMG hereby expressly disclaims all responsibility or liability to any person or entity other than the Client in connection with their use of this report.

This report has been prepared for the sole purpose of assisting the Client in examining delivery options for the Lansdowne 2.0 Project. The methodology used is designed to qualitatively assess potential project delivery models. KPMG organized and facilitated a series of workshops; however, discussions were led by the City of Ottawa and the decisions taken are the sole responsibility of the Project Team (consisting of representatives of both the City of Ottawa and Ottawa Sport and Entertainment Group).

KPMG will not assume any responsibility or liability for losses incurred by the Client or other parties because of the circulation, publication, reproduction, or use of this report contrary to the provisions of this paragraph.

# Glossary

City	The City of Ottawa
OSEG	Ottawa Sports and Entertainment Group
Alliance	Alliance - Integrated Project Delivery (Alliance)
CM	Construction Management
CM@R	Construction Management at Risk
DB	Design-Build
DBB	Design-Bid-Build
DBF	Design-Build-Finance
DBM	Design-Build-Maintain
PDB	Progressive Design-Build
GMP	Guaranteed Maximum Price
PMO	Project Management Office
MCA	Multi-Criteria Analysis
Project Team	Representatives of the City of Ottawa and OSEG
Project Sponsor	Entity, either OSEG or the City, that will ultimately lead the delivery of the Project

# 1. Executive Summary



## 1.1 Context and Scope

The City of Ottawa (City) is in the preliminary planning stages of a proposed redevelopment of Lansdowne Park.

Lansdowne Park combines modern amenities, courtyards, heritage buildings and green spaces. Situated in the heart of Ottawa, this 40-acre (16 ha) multi-purpose sport and recreation complex is in the Glebe neighborhood, where Bank Street meets the Rideau Canal. This urban destination hosts events, community programs, and recreational activities year-round.

In 2012, City Council entered a 30-year partnership (now a 40-year partnership) with the Ottawa Sports and Entertainment Group (OSEG) for the renewal and revitalization of Lansdowne Park. An initial redevelopment was carried out between November 2012 and August 2014, which included the construction of the new South Stadium Stands, new residential components, new mixed-use shops, redesigned public spaces and underground parking lots.

A new phase of the redevelopment, named Lansdowne 2.0, is currently being negotiated between the City and OSEG. The new phase of the redevelopment consists of demolishing the existing North Stadium Stands and arena complex and building a new, world-class Event Centre and new North Stadium Stands, as well as a new mixed-use development where the existing Civic Centre is located. The new development would comprise 49,000 square feet of retail space and 1,200 new housing units with two mixed use towers of up to 40 stories in height.

The purpose of this mandate is to undertake an assessment of delivery model options, to assist the Project Team with the identification of the most relevant delivery model for the development of the Event Centre and North Stadium Stands (the “Project”). The mandate will also consider, for the relevant delivery options, whether one of the two entities (the City and OSEG) involved is better positioned to lead the delivery of the Project. The entity leading the delivery of the Project will be the signatory to the contract with the Project Contractor. If OSEG is the lead entity, the City of Ottawa retains a general oversight role and will adapt its project governance structure and its project office to oversee activities. Both entities remain involved in the Project and collaborate closely to ensure the success of the mandate.

## 1.2 Summary of Results

A range of delivery models were identified and, through workshops with the Project Team (consisting of representatives of both the City and OSEG), five models were shortlisted for a more detailed multi-criteria assessment. The shortlisted models included traditional delivery options such as Design-Bid-Build (“DBB”), Construction Management (“CM”), Construction Management at Risk (“CM@R”) and alternative models as Design-Build (“DB”), as well as more collaborative models such as Progressive Design Build.

The Project Team developed a list of evaluation criteria that focused on how the different shortlisted delivery models performed relative to core objectives of the Project. These criteria were then weighted based on their importance and alignment with the Project objectives. The criteria are described in detail in Section 3 of this report.

During multiple workshops with the Project Team, each of the shortlisted delivery models were evaluated against the criteria. Table 1 below summarizes the results of this analysis. As indicated in the table, Progressive Design Build and CM@Risk scored the highest relative to the evaluation criteria. As the scores of both models are very close, additional analysis would be appropriate to select the optimal delivery model. As DBB is the City's usual model, it is one of the models that should also be considered for additional analysis. This additional analysis could include a quantitative assessment of the value-for-money generated by each model. In addition, a market sounding with potential bidders would help validate the market's interest and solicit feedback on the advantages and disadvantages of each delivery model.

In addition, the Project Team assessed the impact on the various shortlisted delivery models, particularly the impact on schedule, should the Project Team continue using the services of its current architect: Brisbin Brook Beynon Architects (BBB Architects Ottawa Inc.).

**Table 1 : Summary of results**

<b>Delivery options</b>	<b>Overall qualitative score</b>
Progressive Design-Build (PDB)	95
Construction Management at Risk (CM@R) with current architects (BBB)	92
Construction Management at Risk (CM@R)	92
Design-Bid-Build (DBB) with current architects (BBB)	88
Design-Build (DB)	85
Design-Bid-Build (DBB)	79
Construction Management (CM) with current architects (BBB)	73
Construction Management (CM)	70

A final workshop was conducted to assess whether the City of Ottawa or OSEG is better positioned to lead the delivery of the Project. It is important to note that it was determined that both the City of Ottawa and OSEG have the capacity to lead the delivery of this Project successfully. There will be further discussions moving forward to assess which entity will lead the delivery of the Project based on additional factors to be considered by the City of Ottawa.

### **1.3 Appeal of Zoning Amendment**

The construction of the Events Centre will require a zoning bylaw amendment and an amendment to the City's Official Plan to allow for its use and location. On November 9, 2023, Ottawa City Council approved the staff report on Lansdowne 2.0, including the zoning and Official Plan amendments to allow for the residential development which is a key part of the Lansdowne 2.0 financing strategy. However, following Council's decision, an appeal was filed with the Ontario Land Tribunal (OLT) by a local community association. This appeal will result in delaying the approval of the Site Plan, the issuing of a building permit and the award of construction contract for the Event Centre.

The appeal was received during the afternoon of the last scheduled workshop for assessing the different delivery options. Therefore, the Project Team organized an extra workshop to validate its initial evaluation and incorporate any necessary adjustments. This supplementary workshop determined that, while the appeal modified the project schedule and some of the advantages of the models (for example: the ability to deliver activities in parallel) from the initial assessment (workshop #2), it did not alter the overall ranking of the various delivery options.

The Addendum in this Report offers a concise overview of the Project Team's evaluation of how the appeal influences the assessment of different delivery models.

## 2. Purpose and scope





## 2.1 Purpose of this Report

The purpose of this Report is to document work done by the Project Team to assess different delivery models for the Project. The Report provides an overview of the outcome of discussions conducted as part of workshops during which a series of delivery models were assessed. The workshops ended with a shortlist of delivery models well-suited to deliver the Project as well as an assessment of whether OSEG or the City is better able to lead the delivery of the Project. The report concludes with a description of next steps to move the delivery mode analysis forward.

The Lansdowne 2.0 redevelopment comprises three components. The analysis of delivery methods focuses only on the Event Centre and North Side Stadium Stands components (the “Project”). The residential and retail components is the last phase of the Lansdowne 2.0 and was not considered in this analysis.

## 2.2 Project Scope

In 2012, the City Council initiated a 30-year partnership (now extended to 40 years) with OSEG to rejuvenate Lansdowne Park. This initiative encompassed the creation of new South Stadium Stands, mixed-use retail spaces, new residential development, and a redesigned public realm, along with the construction of subterranean parking.

OSEG is a sports and entertainment company based in Ottawa. OSEG was established to manage and operate professional sports teams, as well as to oversee entertainment venues in the Ottawa region. OSEG manages and operates several professional sports teams, including the Ottawa Redblacks (Canadian Football League - CFL), the Ottawa Fury FC (United Soccer League - USL) and the Ottawa 67s (Ontario Hockey League – OHL). OSEG oversees the management of TD Place Stadium, which is the home stadium for the Ottawa Redblacks and the Ottawa Fury FC. TD Place Stadium is a key component of Lansdowne Park.

In December 2020, City Council instructed a collaborative working group, comprising representatives from the City and OSEG, to explore options for enhancing the sustainability and long-term financial viability of Lansdowne's operations and the established partnership. A proposal and concept plan have since been developed to create a new Event Centre that will support an expansion of local events, concerts, and markets. The Project entails the demolition of the existing North Stadium Stands and arena complex (Civic Centre), to be replaced by a new, state-of-the-art Event Centre and new North Stadium Stands. The proposal also incorporates a new retail podium and additional residential units, aligning with the City's plans to introduce added density to Lansdowne.

The new Event Centre is designed to house approximately 4,700 general admission seats, with the capacity increasing to 5,500 for hockey games and 6,500 for concerts. The proposed North Stadium Stands will result in a reduction of the current seating capacity from 14,000 to 11,000 with standing room for an additional 900 individuals.

According to the City, the estimated total capital cost for the city is \$419 million, with taxpayers responsible for only about one-third of that amount, roughly \$146 million. The approved plan anticipates delivering new City-owned facilities at a net cost of about \$5 million per year, once revenues generated from the sale of subterranean and air rights are factored in.<sup>1</sup>

The Lansdowne 2.0 Project comprises three sequential construction phases: Phase A consists of the construction of the new Event Centre; Phase B is the demolition and construction of the North Side Stand (phases A and B constitute the Project being the subject of this delivery model options analysis report). Phase C is a related residential and retail development that was not considered as part of the delivery option analysis. As per the staff report to Council presented on November 9, 2023, construction of the three phases was estimated to start in 2024 and end in 2034.

<sup>1</sup> Council approves Lansdowne renewal plan: <https://engage.ottawa.ca/lansdowne-2-0>

# 3. Overview of Approach



## 3.1 Data Collection and Overview of Workshops

We reviewed the following background and contextual information on Lansdowne 2.0 to develop a better understanding of the Project:

- Lansdowne 2.0 Background (available at <https://engage.ottawa.ca/lansdowne-2-0>);
- Public Private Partnerships (P3s) Policy of the City of Ottawa (available at <https://ottawa.ca/en/business/partners-and-partnerships/public-private-partnerships-p3s>);
- Lansdowne Partnership Sustainability Plan and Implementation Report. File number: ACS2022-PIE-GEN-0003 (EN);
- Lansdowne - Revised Podium Concept 230817;
- Revised Parking arrangement.

Meetings were held with the Project Team to gain a better understanding of specific elements of Lansdowne 2.0, such as the Project's physical components, scope of work, construction phasing and sequencing as well as to define the components that are the subject of this delivery models options analysis (the new Event Centre and the demolition and construction of the North Side Stand).

Four (4) workshops were held to develop the analysis. A fifth workshop was held to assess the impact of the zoning appeal on the initial assessment of delivery options. Table 2 presents an overview of the objectives of each workshop.

**Table 2 : Workshop summary**

Workshop	Objective
<b>#1 – Identifying Delivery Options</b>	<ul style="list-style-type: none"> <li>• Present the various delivery options available for major infrastructure projects.</li> </ul>
<b>#2 – Evaluating Delivery Options</b>	<ul style="list-style-type: none"> <li>• Define the evaluation criteria for these delivery options.</li> <li>• Weight evaluation criteria according to Project objectives.</li> <li>• Carry out a qualitative assessment of the delivery options</li> </ul>
<b>#3 – Checking the Results of the Assessment</b>	<ul style="list-style-type: none"> <li>• Verify results of the assessment conducted in workshop #2</li> </ul>
<b>#4 – Determining which Entity Should Lead Delivery</b>	<ul style="list-style-type: none"> <li>• Assess whether the City or OSEG would be best positioned to lead the delivery of the Project</li> </ul>
<b>#5 – Addendum: Reviewing the Assessment Following Zoning Appeal</b>	<ul style="list-style-type: none"> <li>• Review the impact of the zoning appeal on the outcomes of the previous workshops</li> </ul>

## 3.2 Workshop #1 – Identifying Delivery Options

During Workshop #1, KPMG presented an overview of different delivery models typically considered for major infrastructure projects. The presentation of the different delivery models, including an overview of their advantages and disadvantages, was intended to help the City and OSEG shortlist models for a more detailed evaluation. A total of eight delivery models were reviewed of which five were retained for a more detailed assessment as part of Workshop #2. Table 3 provides an overview of the delivery models that were reviewed as well as the rationale for retaining some for a more detailed assessment as part of Workshop #2.

Below is a brief description of each delivery model. Further details on each model are provided in Appendix 1.

- **Design-Bid-Build (DBB):** is a traditional delivery model in which the owner awards two distinct and sequential contracts for the design and construction works. The design is reviewed and approved by the owner. Once the design is complete, the owner procures the construction works based on that design. Both contracts are “fixed price” contracts.
- **Construction Management:** While the owner enters into the contracts with the designer and construction contractor, the owner hires a Construction Management team (“CM contractor”) through a separate contract for a consulting service. The overall accountability for project outcomes is retained by the owner and the construction manager’s role is limited to being an agent for the owner, providing consulting services such as inputs on on-going design development during the design phase and day-to-day oversight of the construction contractor’s works during construction phase.
- **Construction Management at Risk (CM@R).** Under this arrangement, the CM@R contractor provides advisory services during the pre-construction phase and performs the required work during the construction phase. In particular, the parties may agree to exercise the following options for construction works: Guaranteed Maximum Price (GMP), GMP Plus Percentage Cost Savings, and conversion into a Stipulated Price Contract. The CM@R contractor is responsible for any construction cost-overruns above the GMP or the lump-sum price. Once the GMP or the lump-sum price is negotiated, the role of the CM@R contractor shifts from an agent to a supplier.
- **Design Build (DB):** The owner procures and awards design and construction work under a single contract. DB contracts are “fixed price” contracts.
- **Design Build Finance (DBF):** Identical to a DB except that under a DBF model, responsibility for financing a portion of construction work is transferred to the DBF consortium.
- **Design Build Maintenance (DBM):** Identical to a DB except that under a DBM model, responsibility for maintenance work, over the term of the agreement, is transferred to the DBM consortium.
- **Progressive Design Build (PDB):** The PDB model is an approach to contracting that provides the owner with a contractor-designer early in the Project’s development phase. The owner and PDB Contractor then develop the project using a collaborative approach. Once completed the collaborative project development phase ends with the signature of a fixed price DB contract.
- **Alliance:** The Alliance model contractually requires collaboration among the primary parties – owner, designer, and construction contractor, and potentially subcontractors – so that risk, responsibility, and liability for project delivery are collectively managed and shared.

**Table 3: List of models assessed**

Delivery Option		To be analyzed further?	Rationale
1	<b>Design-Bid-Build</b>	Yes	DBB is a model commonly used by the City in its projects and is a viable delivery model for Lansdowne 2.0. It was therefore retained for a more thorough assessment.
2	<b>Construction Management</b>	Yes	CM has been used by the City and OSEG. The Project Team deemed a CM model to be viable for this Project and retained the model for more analysis.
3	<b>Construction Management at Risk</b>	Yes	Although CM@R is not a common delivery model for the City or OSEG, it is similar to CM with interesting advantages (notably with respect to risk sharing). It was retained for more analysis.
4	<b>Design Build</b>	Yes	DB has been used by the City to deliver other projects and was deemed a feasible model for Lansdowne 2.0. It was retained for a more detailed assessment.
5	<b>Design Build Finance</b>	No	The private sector will have higher borrowing costs than the City. The City believes that the cost of private finance outweigh the benefits that could be realized for this Project. The DBF model was not retained for more analysis.
6	<b>Design Build Maintenance</b>	No	Given OSEG's role in the Project the City has no plans to delegate asset maintenance to the Lansdowne 2.0 Construction Contractor or affiliated firm. The DBM model was therefore not retained.
7	<b>Progressive Design Build</b>	Yes	The PDB model offers several advantages that could benefit the Project. The PDB model was retained for more analysis.
8	<b>Alliance</b>	No	The City does not consider an Alliance model well-suited in this case, as the delivery model is relatively unique and applies to more complex projects.

The Project Team also finalized the list of evaluation criteria to assess the delivery models during Workshop #1. Table 4 provides an overview of these criteria, which were developed in alignment with the City of Ottawa's Public Private Partnerships (P3s) Policy. These criteria formed the basis of the assessment conducted as part of Workshop #2 and are described in the following table:

**Table 4: Selected criteria and descriptions**

<b>Criteria</b>		<b>Description</b>	<b>Rationale</b>
<b>1</b>	<b>Meet cost objectives (price and budget)</b>	Extent to which the delivery option provides mechanisms to achieve cost certainty (i.e. will a fixed price for the Project work be locked-in at contract award).	Cost certainty is a key criterion for the City and OSEG.
<b>2</b>	<b>Capacity to transfer risks</b>	Extent to which the delivery option optimizes risk transfer between the private sector and the Project Sponsor.	Effective risk-sharing, particularly regarding the cost of the project, is an important criterion for the City and OSEG. Different delivery models have different approaches to transferring and managing risks between Project Sponsor and the private sector. Optimal risk transfer is a high priority.
<b>3</b>	<b>Meet schedule objectives</b>	Extent to which the model allows for the earliest construction start and earliest project completion dates.  The Project Team developed a schedule for the various delivery models. This schedule analysis is available in Appendix 2.	The impact of the delivery option on the project schedule (in particular, on the number of sport seasons affected by the construction) is a major criterion for the City and OSEG.
<b>4</b>	<b>Generate market interest in the project (market appetite)</b>	Extent to which the delivery option generates market interest among a material number of potential bidders possessing the relevant skills, expertise, and capacity to deliver the Project.	Market interest, and therefore the potential competitive tension generated by the model, is an important factor.
<b>5</b>	<b>Project implementation capacity</b>	Extent to which the Project Sponsor has the resources and experience to successfully deliver the Project under the delivery option.	The ability of the City or OSEG to support the Project, based on their experience with the different models, is an important criterion.
<b>6</b>	<b>Favour collaboration with stakeholders during design phase</b>	Extent to which the delivery option supports or facilitates the Project Sponsor's management of and engagement with stakeholders.	Stakeholder engagement is of great importance to the City, as this major Project involves many partners.

Criteria		Description	Rationale
7	<b>Allow for flexibility to make changes to the infrastructure over project life</b>	Extent to which the delivery option allows for changes in scope (e.g., to control cost and schedule).	The ability of the model to allow for changes and modifications, especially during the design phase, to accommodate budget and schedule constraints, is an important evaluation criterion.
8	<b>Meet quality goals</b>	Extent to which the delivery option meets the project's quality objectives.	Achieving quality objectives is a major criterion for the City. The Project Team noted that the quality requirements set for the Project can be met under all delivery options assessed, provided the model is well executed. As such, the scoring for this criterion did not vary by model.
9	<b>Ensure public transparency</b>	Extent to which the delivery option supports public transparency (e.g., consultation processes, communication of public information, etc.).	Public transparency is a high priority for the City. Good communication and transparency with the public can be achieved using any of the delivery options assessed, provided the Project Sponsor makes this a priority. The scoring for this criterion did not vary between delivery models.

### 3.3 Workshop #2 – Evaluating Delivery Options

Workshop #2 started with a discussion of the relative importance of each evaluation criteria to the overall success of the Project. To highlight differences in the relative importance between criteria, weightings from 1 to 3 were assigned to each as follows:

- A weighting factor of “3” was assigned to criteria deemed very important or essential;
- A factor of “2” was assigned to criteria deemed “somewhat essential” to the Project's success; and
- A factor of “1” was assigned to criteria not “essential” to the Project's success.

Results of this discussion are presented in Table 5 below.

**Table 5 : Weighting of Criteria**

<b>Criteria</b>		<b>Weighting selected</b>	<b>Rationale</b>
<b>1</b>	<b>Meet cost objectives (price and budget)</b>	<b>3</b>	Cost certainty is a key criterion for the City and OSEG and it was therefore given a weighting of 3.
<b>2</b>	<b>Capacity to transfer risks</b>	<b>3</b>	Effective risk-sharing is an important criterion for the City and OSEG it was therefore given a weighting of 3.
<b>3</b>	<b>Meet schedule objectives</b>	<b>3</b>	The impact of the delivery option on the Project schedule is a major criterion for the City and OSEG it was therefore given a weighting of 3.
<b>4</b>	<b>Generate market interest in the project (market appetite)</b>	<b>2</b>	Market interest is an important factor it was given a weighting of 2.
<b>5</b>	<b>Project implementation capacity</b>	<b>2</b>	The ability of the City or OSEG to support the Project was given a weighting of 2.
<b>6</b>	<b>Favour collaboration with stakeholders during design phase</b>	<b>1</b>	Although stakeholder engagement is of significant importance to the City, this criterion was weighted lower because the City already collaborated with stakeholders during the planning phase for the Project and will continue to collaborate regardless of which delivery model is chosen. It was given a weighting of 1.
<b>7</b>	<b>Allow for flexibility to make changes to the infrastructure over project life</b>	<b>3</b>	The flexibility of the model is an important evaluation criterion and was given a weighting of 3.
<b>8</b>	<b>Meet quality goals</b>	<b>3</b>	Achieving quality objectives is a major criterion for the City and was given a weighting of 3.
<b>9</b>	<b>Ensure public transparency</b>	<b>3</b>	Public transparency is a high priority for the City and was given a weighting of 3.

Following this discussion, the Project Team evaluated the shortlisted delivery models. Each model's performance relative to each criterion was assessed using a score from 1 to 5. The evaluation scores are described in Table 6.



**Table 6: Scoring Matrix**

Score	Description
1- Very Low	<ul style="list-style-type: none"> <li>• Delivery option has a very low level of alignment with the stated criterion.</li> <li>• Delivering the Project under this delivery option may contradict the intent of this criterion.</li> </ul>
2- Low	<ul style="list-style-type: none"> <li>• Delivery option has a low level of alignment with the stated criterion.</li> <li>• Delivering the Project under this delivery option does not support or marginally supports the intent of this criterion.</li> </ul>
3- Medium	<ul style="list-style-type: none"> <li>• Delivery option has a medium level of alignment with the stated criterion.</li> <li>• Delivering the Project under this delivery option somewhat supports the intent of this criterion.</li> </ul>
4- High	<ul style="list-style-type: none"> <li>• Delivery option has a high level of alignment with the stated criterion.</li> <li>• Delivering the Project under this delivery option supports the intent of this criterion.</li> </ul>
5- Very High	<ul style="list-style-type: none"> <li>• Delivery option has a very high level of alignment with the stated criterion.</li> <li>• Delivering the Project under this delivery option directly supports the intent of this criterion.</li> </ul>

The score for each criterion multiplied by the weighting factor was used to produce an overall score for each delivery model.

### 3.4 Workshop #3 - Checking the Results of the Assessment

During a third workshop, the Project Team met to check the consistency of the results from the previous workshop. This review, a few days after Workshop #2, allowed the Team to ensure that everyone was comfortable with the evaluation and that any inconsistencies could be addressed. The results of this work are summarised in Section 4 of this Report.

### 3.5 Workshop #4 - Determining which Entity Should Lead the Delivery of the Project

As the Project Team is made up of two entities (the City and OSEG), the objective of Workshop #4 was to assess whether the City or OSEG would be best positioned to lead the delivery of the Project, for the preferred delivery models identified in Workshop #2. This workshop consisted of reviewing the assessment developed in Workshop #2 and assessing whether OSEG or the City would have an edge delivering the Project using one of the shortlisted delivery models. The analysis concluded that both the City and OSEG have strong project management capabilities and that either entity would be capable of leading the delivery of the Project. The analysis is described in detail in Section 4 of this Report.

### 3.6 Workshop #5 - Addendum: Reviewing the Assessment Following Zoning Appeal

The Project Team reconvened one final time to review the impact of the zoning appeal on the outcomes of the workshops. The Project Team identified two criteria that needed to be reviewed

because of the zoning appeal. The two criteria were: schedule and market interest. Any changes to the evaluation as part of this final review are described in the Addendum appended to this Report.

# 4. Results



## 4.1 Delivery Model Assessment Results

Eight (8) delivery models were assessed using nine (9) criteria, as explained in Section 3.3. Table 7 summarizes the evaluation results while Table 8 provides the details of the scoring exercise and its rationale. For each delivery model, the score was calculated by adding up the product of the weighting factors and the scores for each criterion.

It is worth mentioning that to help optimize the schedule, the Project Team also considered versions of DBB, CM, and CM@R delivery models where the architectural firm (BBB), that is currently working on the preliminary design for the Event Centre, is retained to advance the design for the rest of the Project execution. The details of the evaluation of these modified delivery models are included in Table 8.

As per Tables 7 and 8, the Progressive Design Build model scores the highest. This is mainly due to the opportunity afforded by the model to set up a better risk allocation due to the upfront collaborative design works and the flexibility to modify the scope during the design and development phase. The model was also assessed as likely to generate high market interest due to the affinity for progressive and collaborative delivery models prevailing in the market currently.

Both CM@R and CM@R with BBB scored second highest. They have the same score. The inclusion of BBB has an impact on the schedule criterion, and according to the City's analysis (Appendix 2), the two models will impact two sports seasons, and the end of construction is evaluated at about the same time (4 months difference). The CM@R model scored well across all the evaluation criterion except for the "market interest" and "project implementation capacity" criteria. CM@R strengths include the cost certainty the model can provide because of the Guaranteed Maximum Price provided by the contractor and its ability to meet risk transfer and schedule objectives for the Project. The limitations of the CM@R model include the need for greater oversight of the contractor and lower market interest for the model as CM@R contracts for large infrastructure projects are relatively uncommon in Canada.

The DBB model scored well for the "market interest," "project implementation capacity" and "collaboration with stakeholders" criteria. However, the model scored poorly in the schedule and risk transfer criteria. The lower score for the "meet schedule objectives" criteria is due to the DBB model using a sequential approach to design and construction which generally means a longer project schedule. That said, the Project Team noted that the longer schedule can be somewhat mitigated by using OSEG's current architects, which is why the DBB delivery model with BBB scores better.

The DB delivery model is the next highest scoring model after the DBB model with BBB. The DB model scored well in terms of "cost certainty" and "risk sharing." However, the Project Team highlighted that this model might be less appealing to the market because it puts a substantial amount of risk on the contractor. Additionally, the team identified concerns about the limited flexibility and collaboration after awarding the contract in this model.

CM, with or without BBB, has the lowest scores. This is due to its very low scores on the "meet cost objectives" and "meet schedule objective" criteria. The Project Team also noted that a CM delivery model requires significant resources to be mobilized by the Project Sponsor to ensure sufficient oversight of the Construction Manager and other contractors.

To sum it up, the Progressive Design Build model emerged with the highest overall score at 95, followed closely by CM@Risk with or without BBB at 92. The traditional DBB model (with BBB) is the fourth highest scoring model and the usual delivery model used by the City of Ottawa for a majority of its infrastructure projects. Conversely, delivery models like CM and DBB (without BBB) did not fare well in the assessment.

**Table 7: Summary of results**

<b>Delivery options</b>	<b>Overall qualitative score<sup>2</sup></b>
Progressive Design-Build (PDB)	95
Construction Management at Risk (CM@R) with current architects (BBB)	92
Construction Management at Risk (CM@R)	92
Design-Bid-Build (DBB) with current architects (BBB)	88
Design-Build (DB)	85
Design-Bid-Build (DBB)	79
Construction Management (CM) with current architects (BBB)	73
Construction Management (CM)	70

Looking ahead, the Project Team intends to conduct additional analysis to identify the most suitable delivery model for Lansdowne 2.0 amongst the top four-scoring (PDB, CM@R, CM@R with BBB, and DBB with BBB) models.

Further details on the next steps are outlined in Section 5 of this Report.

<sup>2</sup> The score for each criterion multiplied by the weighting factor was used to produce an overall score for each delivery model. Scoring is not based on a total score of 100. Please refer to Section 3 for further details.

**Table 8 : Delivery Model Scoring Results and Rationale**

Criteria			Delivery Options								
Subject	Description	Weights	Design-Bid-Build (DBB)		Design-Bid-Build (DBB) with BBB		Construction Management (CM)		Construction Management (CM) with BBB		
			Assessment	Explanations	Assessment		Assessment	Explanations	Assessment		
1	<b>Meet cost objectives (price and budget)</b>	Extent to which the delivery option provides mechanisms to manage cost certainty regardless of schedule	3	3	> Results in a high degree of cost certainty.	3	> Same as DBB.	1	> Low price certainty as CM remunerates suppliers on cost-plus approach. > CM breaks project into multiple-smaller workpackages. > Price certainty not obtained until last contract tendered.	1	> Same as CM.
2	<b>Capacity to transfer risks</b>	Extent to which the delivery option optimizes risk transfer between the private sector and the project developer	3	2	> Owner retains design risks.	2	> Same as DBB.	1	> Owner retains cost and schedule risks.	1	> Same as CM.
3	<b>Meet schedule objectives</b>	The extent to which the model allows for design risk management, earliest construction start date, and earliest project completion.	3	1	> Latest construction start date and project completion.	4	> Early construction start date. > No gap in schedule. > Building permit application possible before OBC amendment.	3	> The construction manager does not take on the schedule risk : there is no target completion date associated with the activities. > Parallel activities are possible.	4	> Earliest construction start date and project completion date. > No gap in schedule. > Building permit application possible before OBC amendment.
4	<b>Generate market interest in the project (market appetite)</b>	Extent to which the delivery option generates market interest among a material number of potential bidders possessing the relevant skills, expertise and capacity to deliver the design and construction of the Project.	2	5	> DBB is a common delivery model and well understood by the market. > The model transfer less risk to the market and should generate a greater interest.	5	> Same as DBB.	4	> CM consortium doesn't assume as much risk as the other models. > CM is a less common delivery model than DBB.	4	> Same as CM.
5	<b>Project implementation capacity</b>	Extent to which the Project Sponsor has the resources and experience to successfully deliver the project (both procurement and management during construction) under the delivery option.	2	4	> City has significant experience with DBB delivery option. > The DBB delivery model allows the City to share the resources load with its advisers.	4	> Same as DBB.	1	> Lack of ability to supervise the design manager. > Inability to control the fact that there is no risk sharing. > Requires significant resources to control budget.	1	> Same as CM.
6	<b>Favour collaboration with stakeholders during design</b>	Extent to which the delivery option supports the Project Sponsor's management and engagement with stakeholders to deliver the Project within the required timeframes.	1	4	> The model allows changes to be made to reflect stakeholder feedback throughout the design phase.	4	> Same as DBB.	3	> The model allows changes to be made to reflect stakeholder feedback throughout the design phase.	3	> Same as CM.
7	<b>Allow for flexibility to make changes to the infrastructure over project life</b>	Extent to which the delivery option allows for changes in scope (e.g. to control cost and schedule)	3	3	> Once design is complete, flexibility decreases significantly.	3	> Same as DBB.	4	> The owner retains control of the design process. Because CM typically breaks the project into smaller packages, there is some flexibility to adjust some packages during construction if they have not yet been awarded.	4	> Same as CM.
8	<b>Ensure public transparency</b>	Extent to which the delivery option supports public transparency (e.g. consultation processes, communication of public information, etc.)	3	5	> Transparency is prioritized regardless of the delivery option chosen, all delivery models can provide transparency under the right conditions.	5	> Same as DBB.	5	> Same as DBB.	5	> Same as DBB.
9	<b>Meet quality goals</b>	Extent to which the delivery option meets the project's quality objectives.	3	5	> Compliance with the quality standards set by the project owner is a priority, regardless of the model chosen. Compliance with these standards depends on the terms of the contract and can be achieved under any delivery option.	5	> Same as DBB.	5	> Same as DBB.	5	> Same as DBB.
<b>TOTAL</b>				<b>79</b>		<b>88</b>		<b>70</b>	<b>21</b>	<b>73</b>	

Criteria			Delivery Options								
Subject	Description	Weights	Construction Management at Risk (CM@R)		Construction Management at risk (CM@R) with BBB		Design-Build (DB)		Progressive Design Build (PDB)		
			Assessment	Explanations	Assessment		Assessment	Explanations	Assessment	Explanations	
1	Meet cost objectives (price and budget)	Extent to which the delivery option provides mechanisms to manage cost certainty regardless of schedule	3	4	> GMP is a maximum price. Results in a high degree of cost certainty.	4	> Same as CM@R.	5	> Results in a high degree of cost certainty.	4	> Results in a high degree of cost certainty.
2	Capacity to transfer risks	Extent to which the delivery option optimizes risk transfer between the private sector and the project developer	3	4	> Schedule and some cost risks transferred to Contractor.	4	> Same as CM@R.	5	> Results in significant transfer risks to contractor (design and construction risks).	4	> Risks are shared equitably in a collaborative mode.
3	Meet schedule objectives	The extent to which the model allows for design risk management, earliest construction start date, and earliest project completion.	3	5	> Early construction start date and project completion date. > Building permit application possible before OBC amendment.	5	> Same as CM@R.	2	> Construction start date later than PDB > Project completion date identical to that of the PDB.	3	> Construction start date earlier than DB > Project completion date identical to that of the DB.
4	Generate market interest in the project (market appetite)	Extent to which the delivery option generates market interest among a material number of potential bidders possessing the relevant skills, expertise and capacity to deliver the design and construction of the Project.	2	2	> CM@R assumes more risk making the project less attractive. > CM@R is a less common delivery model for large infrastructure project.	2	> Same as CM@R.	3	> Providing a fixed price at 30% design means DB consortium assumes greater risk, making the project less attractive to the market.	4	> PDB is an increasingly popular delivery option that is attracting market interest due to the fair risk-sharing and flexibility it offers on cost and schedule.
5	Project implementation capacity	Extent to which the Project Sponsor has the resources and experience to successfully deliver the project (both procurement and management during construction) under the delivery option.	2	2	> Lack of ability to supervise the design manager. > Less risk for the PMO, but greater oversight role. > Require significant resources to control budget.	2	> Same as CM@R.	3	> In a DB, the PMO plays a bigger role reviewing and challenging the contractor, e.g. reviewing design submittals. > Fixed price at 30% design may lead to	2	> This model requires a lot of resources and the ability to collaborate and negotiate with the PDB consortium.
6	Favour collaboration with stakeholders during design	Extent to which the delivery option supports the Project Sponsor's management and engagement with stakeholders to deliver the Project within the required timeframes.	1	3	> The model allows changes to be made to reflect stakeholder feedback throughout the design phase.	3	> Same as CM@R.	1	> Post-award changes would require change order or compensation to the contractor if they impact schedule or cost	5	> Collaboration in a PDB enables regular consultation with stakeholders during the design phase.
7	Allow for flexibility to make changes to the infrastructure over project life	Extent to which the delivery option allows for changes in scope (e.g. to control cost and schedule)	3	4	> The owner retains control of the design process. Because CM typically breaks the project into smaller packages, there is some flexibility to adjust some packages during construction if they have not yet been awarded.	4	> Same as CM@R.	2	> There is flexibility to de-scope during the procurement period. > There is mechanisms in the procurement process to ensure flexibility. > Once the construction contract is awarded, there is no room for change without a change order or	5	> In PDB, changes can be made during design at any time and get a price on an ongoing basis from the builder.
8	Ensure public transparency	Extent to which the delivery option supports public transparency (e.g. consultation processes, communication of public information, etc.)	3	5	> Same as DBB.	5	> Same as DBB.	5	> Same as DBB.	5	> Same as DBB.
9	Meet quality goals	Extent to which the delivery option meets the project's quality objectives	3	5	> Same as DBB.	5	> Same as DBB.	5	> Same as DBB.	5	> Same as DBB.
<b>TOTAL</b>				<b>92</b>		<b>92</b>		<b>85</b>		<b>95</b>	

## 4.2 Entity best positioned to lead the delivery of the Project

Lansdowne Park's current sports and entertainment facilities are run as a partnership between the City and OSEG. Both the City and OSEG have strong project management capabilities with respect to infrastructure projects, and each entity would be capable of managing the execution of the Project. That said, the question still arises about which entity should lead the development of Lansdowne 2.0. The purpose of Workshop #4 was to assess the capacity of each entity with the view of determining whether one of these entities is better suited to manage the Project's risks.

Assumptions for this workshop and assessment were as follows:

- The assessment was focussed on the capacity of each organization as a whole i.e. the City of Ottawa and OSEG. An assessment of the capabilities of the individuals in each entity was out of scope.
- The capacity of OSEG includes its capability to draw on knowledge of its partners, Minto Group and Trinity Group. Both partners provide OSEG with access to deep knowledge, experience and other skillsets regarding real estate and large mixed-use developments and commercial leasing.
- The capacity of the City includes knowledge on Lansdowne 1.0 and its experience with similar infrastructure projects. Also, the City is used to dealing with the stakeholders involved in the Project and has a good capacity to communicate with the public regarding the Project.
- Regardless of which entity leads the delivery of the Project, the City of Ottawa retains the responsibility and risks for cost and schedule.
- As Lansdowne 2.0 is a partnership between the City and OSEG, the two entities will work closely together to ensure the full success of the Project, regardless of which is responsible for the delivery of the Project.

To identify the entity best able to lead the delivery of Lansdowne 2.0, the Project Team reviewed each of the nine evaluation criteria to assess whether one entity had an edge over the other. This analysis was limited to the top-two delivery models identified in Workshop #2 i.e. the PDB and CM@R models.

During the workshop, it became clear that the City has a better understanding of the stakeholders it works with on a regular basis. The City also benefits from its position as a public entity working for its citizens and will, therefore, be better able to communicate and ensure transparency of the Project to the public.

OSEG will benefit from greater agility in its internal validation processes, which could allow it to optimize schedule. Additionally, as a private organization, it may generate greater market interest for the Project due to the market being potentially more interested in working with private sector practices.

In terms of cost certainty and project implementation, the Project Team is confident that both entities can lead the delivery of the Project within budget.

Finally, regarding the criteria related to capacity to transfer risk, flexibility to make changes and quality, the Project Team believes that these criteria depend on the delivery model chosen – not the entity delivering the Project.

There was a consensus in the workshop that, although each have relative strengths and weaknesses, both OSEG and the City have similar overall capacity to lead the delivery of the Project. However, this high-level assessment must be reviewed following the final selection of the delivery model as the capacity of the two entities will depend highly on the delivery model ultimately selected. The City and OSEG will thus do more work moving forward to identify which entity is best positioned to delivery Lansdowne 2.0.

Table 9 provides an overview of the discussions and results of Workshop #4



**Table 9 : Results of workshop # 4**

Key Factor		Description	PDB		CM@R		Rational
			CITY	OSEG	CITY	OSEG	
1	<b>Meet cost objectives (price and budget)</b>	Extent to which the delivery option provides mechanisms to manage cost certainty regardless of schedule.	X	X	X	X	The mechanisms within the delivery models are the same. Both entities are able to manage cost targets. OSEG: extremely fast turnaround from idea to execution Risk that the overall price may be higher if the City manages the project. The ability to manage that price going forward is the same.
2	<b>Capacity to transfer risks</b>	Extent to which the delivery option optimizes risk transfer between the private sector and the project developer.					It is the contract model that defines the transfer of risk, not who delivers.
3	<b>Meet schedule objectives</b>	The extent to which the model allows for design risk management, earliest construction start date, and earliest project completion.		X		X	Ability of the private sector to move faster than the City. The City's internal permitting process is more complex than it will be with OSEG. However, the City will always need to validate the documents and steps taken by OSEG.
4	<b>Generate market interest in the project (market appetite)</b>	Extent to which the delivery option generates market interest among a material number of potential bidders possessing the relevant skills, expertise and capacity to deliver the design and construction of the Project.		X		X	The Project Team believes that the private sector would prefer to work with a private partner like OSEG. Security of payment is guaranteed by the City anyway. The Project Team does not believe that the difference between OSEG or the City managing the project will make a huge difference to the market, but believes it may be slightly more attractive to the private sector with OSEG managing the project. In addition, there is likely to be value for the private sector in establishing a relationship with Minto and Trinity in the future.
5	<b>Project implementation capacity</b>	Extent to which the Project Sponsor has the resources and experience to successfully deliver the project (both procurement and management during construction) under the delivery option.	X	X	X	X	Both entities will need to establish a Project Management Office (PMO) to manage the project. OSEG operates the stadium on a day-to-day basis and believes it already has resources that will help it move faster than the City, but this point is covered by the schedule criterion.
6	<b>Favour collaboration with stakeholders during design</b>	Extent to which the delivery option supports the Project Sponsor's management and engagement with stakeholders to deliver the Project within the required timeframes.	X		X		The City believes it has a greater ability to deal with stakeholders, many of whom are internal to the City. The City has regular discussions and exchanges with these stakeholders and is accustomed to dealing with them as it did with Lansdowne 1.0.
7	<b>Allow for flexibility to make changes to the infrastructure over project life</b>	Extent to which the delivery option allows for changes in scope (e.g. to control cost and schedule).					It is the contract model that defines the level of flexibility, not who delivers.
8	<b>Ensure public transparency</b>	Extent to which the delivery option supports public transparency (e.g. consultation processes, communication of public information, etc.).	X		X		Public perception will be more favorable to the City leading the Project. The social acceptability of the Project will be higher with a public leading the Project.
9	<b>Meet quality goals</b>	Extent to which the delivery option meets the project's quality objectives.					It is the contract model that defines the level of quality through the detail of the requirement, not who delivers.

# 5. Conclusion and Next Step



Based on the qualitative assessment conducted, the Progressive Design Build (PDB) model was identified as the best performing model followed by Construction Manager at Risk (CM@R) and DBB with BBB.

The advantages of the PDB model lie in its good cost certainty, its highly collaborative nature which allows for better risk sharing, good cooperation with stakeholders, and the flexibility to make changes throughout the design phase of the Project. It is a model that is currently attracting a lot of market interest. However, it should be noted that models that are premised on a more collaborative approach, such as the PDB model, are still new to owners and agencies such as the City or OSEG. Delivering a major project such as Lansdowne 2.0 under a PDB model will require new approaches not only to project and contract management, but also to governance processes, with which the City or OSEG have limited experience. The impact of this lack of experience could be mitigated by retaining experienced advisors, hiring staff with relevant experience, and setting up new governance and project management processes aligned with the requirements of a PDB delivery model.

CM@R (with or without the current architect) provides a high degree of cost certainty for the Project, as well as the best possible schedule (in terms of start and finish of construction). Risk sharing is also beneficial, and this model allows for flexibility in terms of changes during the design phase of the Project. However, PDB is the most flexible model, scoring 5 on this criterion, while CM@R scores 4.

The assessment's results for the DBB model with BBB, the Project's current architects, is very close to CM@R and PDB. This model performs slightly less well in terms of cost certainty, but performs very well in terms of schedule adherence, market interest and stakeholder collaboration.

It should be stressed that the results of the qualitative analysis of the delivery options are very close, and that the analysis needs to be continued, particularly on the quantitative aspects, to decide on the best delivery option for the Project.

It is also suggested that a market sounding exercise be conducted to validate market interest, prior to finalizing the delivery model decision.

Regarding the entity best positioned to lead the delivery of the Project – the Project Team believes that both entities have the capacity to do so. For the City, the benefits lie in its public legitimacy and its experience communicate transparently with the public. As well, the City's experience and ease in working with the Project's various stakeholders is a benefit. For OSEG, its advantages lie in its agility which could enable it to lead the delivery of the Project more quickly, as well as being a private entity, this could be well received by the market. In conclusion, while each entity has its strengths and weaknesses, it was clear that both OSEG and the City of Ottawa can execute the Project. The Project Team will make a recommendation regarding who should lead the delivery of Lansdown 2.0 to Council moving forward.

Readers should note that the revisions to the evaluation due to the zoning appeal are described in the following Addendum that is appended to this Report.

# Addendum



# Workshop #5 – Impact of Zoning and Official Plan Appeal on Delivery Model Selection

The construction of the Events Centre will require a zoning bylaw amendment and an amendment to the City's Official Plan to permit its use and location.

On November 9, Ottawa City Council approved the staff report on Lansdowne 2.0 and the zoning and Official Plan amendments to allow for the residential development that is a key part of the Lansdowne 2.0 financing strategy. However, after Council's decision, an appeal was filed with the Ontario Land Tribunal (OLT) by a local community association regarding the following elements:

With respect to the amendment to the City's Official Plan the following is proposed:

- Allow a maximum height for development within the Lansdowne Special District of 40 storeys (for the residential development that will help finance the project).
- Allow the Event Centre within the established green and public space areas within the Lansdowne Special District (essentially allowing the proposed location of the Event Centre); and
- Allow an Event Centre within the Lansdowne Special District (which is the policy designation in the Official Plan).

Regarding the amendment to the City's Zoning Bylaw, the following is proposed:

- The application should also allow the use of the new Event Centre within the new location for this building, permit a height allowance of 15.5 metres for the Event Centre, establish a height allowance of 138 metres (40 storeys) for the residential towers, and other details related to zoning benefits and standards.

Without the City's Official Plan amended to permit the development and the City's implementing Zoning by-law amended to permit the development, Lansdowne 2.0 cannot:

- Issue a site plan approval for the Event Centre;
- Issue a building permit for the Event Centre;
- Execute a construction contract without knowing that there is a viable Project.

In summary, the Project has not yet been approved to proceed from a construction standpoint.

This information was provided to the Project Team after the completion of the various delivery option evaluation workshops. Due to the zoning appeal, the Project Team reconvened for a final workshop, during which a new project schedule for each delivery option was developed and analyzed to consider the impact of the zoning appeal on the initial evaluation of the various delivery options.

The Project Team concluded that the change affected the project schedule and to a lesser extent the market interest criteria, which had been evaluated in Workshop #2, but did not affect the other criteria. In addition, the Project Team felt that although the construction start date had been delayed by the appeal, this period could still be used to advance certain preliminary works, and to call on construction-related consultancy services. Adjustments were made and although the deadlines associated with this appeal have an impact on the project schedule, the overall qualitative ranking of

the delivery options was deemed to not have changed due to the appeal. PDB, CM@R, CM@R with BBB and DBB with BBB continue to score highest in the evaluation.

# Appendix



# 1. Delivery Options

This Annex provides more information on the delivery options for the Project that were considered for evaluation. A range of potential delivery models were reviewed, and each was identified as either suitable or not likely to be suitable based on a qualitative assessment of the models.

A range of delivery models were considered that could potentially be utilized to deliver the Lansdowne 2.0 Project. The list of models considered were:

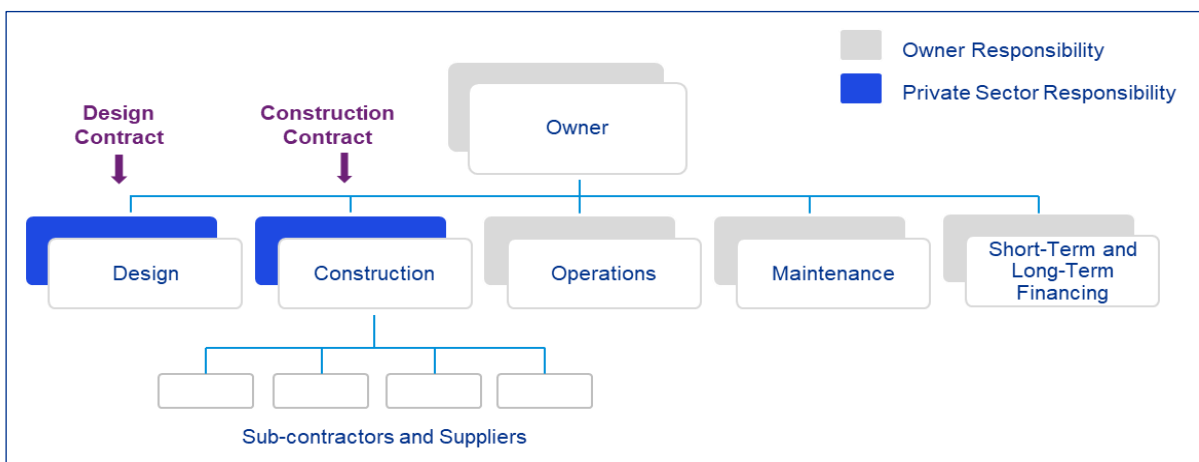
- |   |   |
|---|---|
| <p><b>01</b> &gt; <b>Design-Bid-Build (DBB)</b></p> <p><b>03</b> &gt; <b>Construction Management at Risk (CM@R)</b></p> <p><b>05</b> &gt; <b>Design-Build-Finance (DBF)</b></p> <p><b>07</b> &gt; <b>Progressive Design-Build (PDB)</b></p> | <p><b>02</b> &gt; <b>Construction Management (CM)</b></p> <p><b>04</b> &gt; <b>Design-Build (DB)</b></p> <p><b>06</b> &gt; <b>Design-Build-Maintain (DBM)</b></p> <p><b>08</b> &gt; <b>Integrated Project Delivery (Alliance)</b></p> |
|---|---|

The description of each delivery options as presented during workshop 1 is as follows.

## Design-Bid-Build (DBB)

An illustration of the DBB delivery option is shown below:

**Figure 1 : DBB structure**



The Design-Bid-Build (DBB) is a traditional delivery option in which the Owner awards two distinct and sequential contracts for the design and construction work:



- The first contract is with a design firm to develop a full detailed design and to assist the Owner in putting the construction of the Project out to tender; and
- The second contract is with a general contractor to build that design.

Under the DBB model, the operations, maintenance, and financing of the project would remain the responsibility of the Owner.



Throughout the detailed design process, the designs are reviewed and approved by the Owner. After the design is complete, the Owner would procure the construction works based on the completed design. It would do so by hiring a general contractor to complete the Project in accordance with the design firm's plans and specifications.

During construction, the Owner would manage and oversee the general contractor. The general contractor may subcontract out specialized construction work and trades and would typically be responsible for overseeing these subcontracts. However, if the construction works have been contracted out to more than one general contractor, the Owner may coordinate multiple contractors under separate contracts.

The Owner would pay for the construction project typically through monthly progress payments to the general contractor(s) during the construction period, based on work completed.

Following completion, the assets are turned over to the Owner. The Owner assumes full responsibility for operations and maintenance, including continuously monitoring the condition of the assets to determine how frequent maintenance is required.

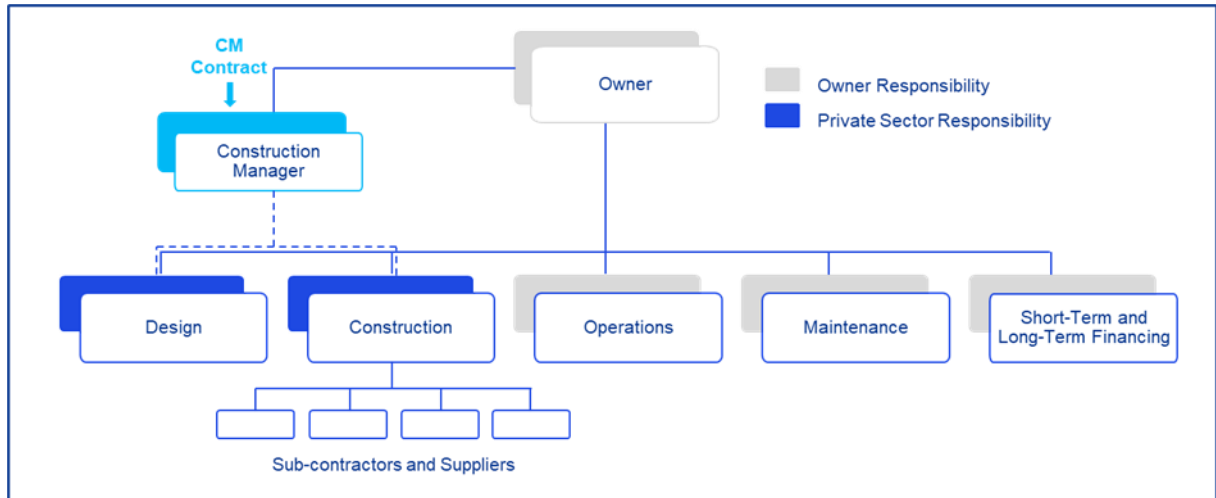
**Table 10 : Summary of the benefits and challenges of the DBB model**

Benefits 	Challenges 
<ul style="list-style-type: none"> <li>• Well understood and commonly used approach.</li> <li>• Significant degree of Owner control of project (because of influence of design decisions).</li> <li>• Flexibility to respond to changing conditions and stakeholder concerns (during design phase, before awarding construction contract).</li> <li>• Less upfront time and resources needed from the owner, compared to collaborative models.</li> </ul>	<ul style="list-style-type: none"> <li>• Requires completed design before awarding construction contract. Therefore, the overall process is generally longer than other delivery models.</li> <li>• Since the construction is based on the tendered design, any design shortfall, constructability issue or other design and construction interface issue may be costly for the Owner to resolve.</li> <li>• No opportunity for the construction contractor and designer to collaborate and incorporate constructability considerations into the design.</li> <li>• Owner retains the majority of the project risks (e.g., cost/schedule overruns) and must manage the interface between the designer and the builder.</li> <li>• Little incentive for the designer to pursue innovative design and/or construction solutions.</li> </ul>

## Construction Management (CM)



An illustration of the CM delivery option is shown below:

Figure 2 CM structure



While the Owner enters the contracts with the designer and construction contractor, the owner hires a Construction Management team (“CM contractor”) through a separate contract for a consulting service. The overall accountability for project outcomes is retained by the Owner and the construction manager’s role is limited to being an agent for the owner, providing consulting services such as inputs on on-going design development during the design phase and day-to-day oversight of the construction contractor’s works during construction phase.

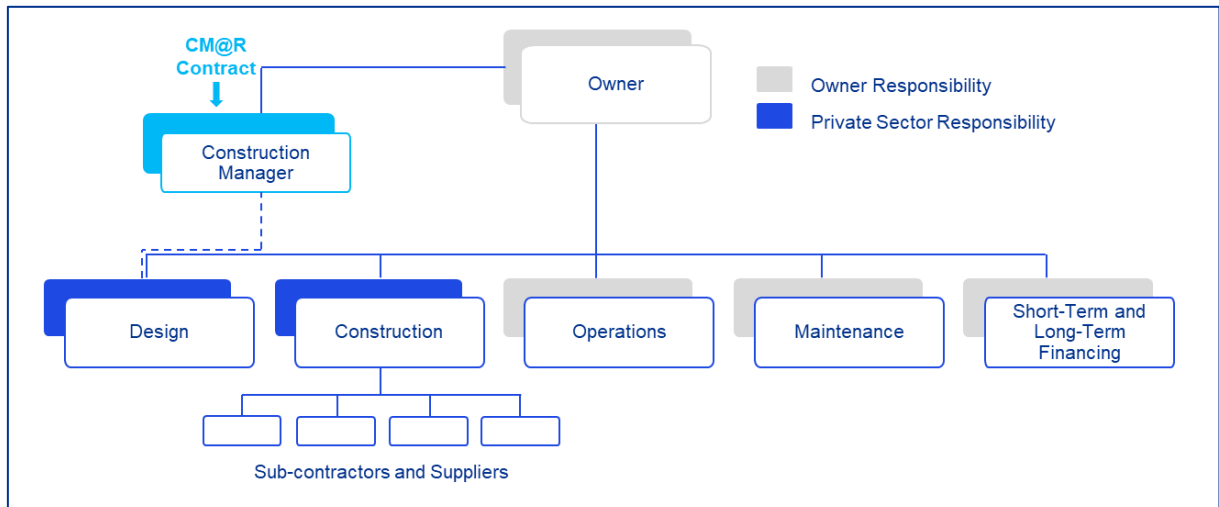
Table 11 : Summary of the benefits and challenges of the CM model

Benefits 	Challenges 
<ul style="list-style-type: none"> <li>• The Owner retains ultimate responsibility for the design and construction phases of the project and therefore retains substantive control over the Project.</li> <li>• The CM Contractor also advises the owner to better estimate the cost of the work and value engineer accordingly.</li> <li>• The CM contractor can assist in helping the Owner understand the complexities and risks with construction and schedule development, encouraging a more efficient construction period and timely completion.</li> <li>• The CM Contractor can advise on the selection of sub-contractors:</li> <li>• The CM Contractor can help reduce the number of change orders by advising the owner throughout the design phase, conducting constructability reviews through the design process, and addressing issues before construction.</li> </ul>	<ul style="list-style-type: none"> <li>• The risk of schedule delays and cost overruns (due to sub-contracts exceeding budget) are retained by the Owner.</li> <li>• The CM is compensated based on hourly rates or sometimes on % of total cost, which limits the incentive for the contractor to limit cost increases.</li> </ul>

## Construction Management at Risk (CM@R)



An illustration of the CM@R delivery option is shown below:

Figure 3 CM@R structure



Under this arrangement, the CM@R contractor provides advisory services during the pre-construction phase and performs the required work during the construction phase. In particular, the parties may agree to exercise the following options for construction works: Guaranteed Maximum Price (GMP), GMP Plus Percentage Cost Savings, and conversion into a Stipulated Price Contract. The CM@R contractor is responsible for any construction cost-overruns above the GMP or the lump-sum price. Once the GMP or the lump-sum price is negotiated, the role of the CM@R contractor shifts from an agent to a supplier.

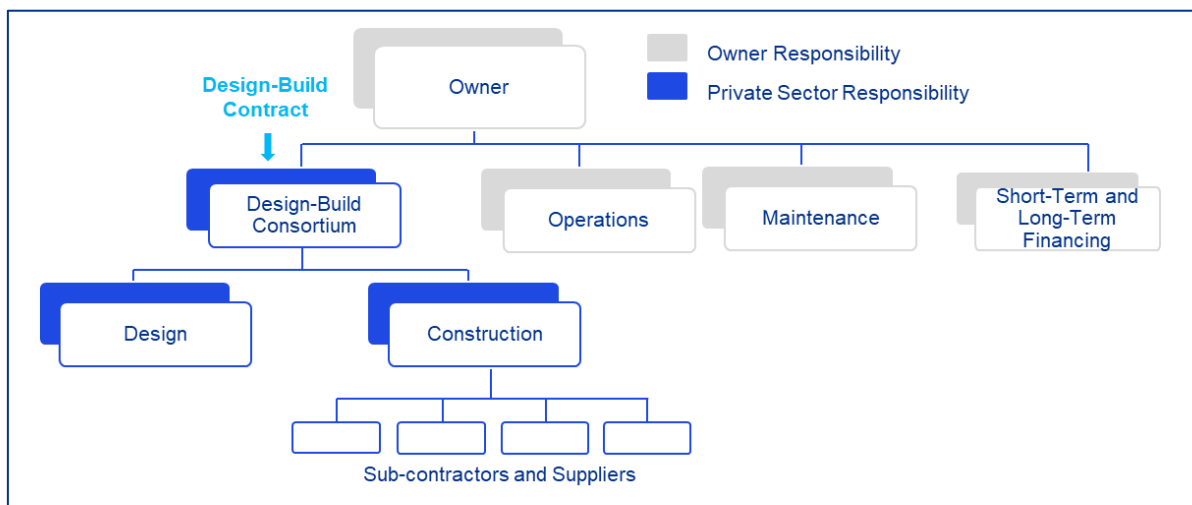
**Table 12 Summary of the benefits and challenges of the CM@R model**

Benefits 	Challenges 
<ul style="list-style-type: none"> <li>• The CM@R contractor can assist in understanding the complexities in construction and schedule development, encouraging a more efficient construction period and timely completion. This benefit is maximized if the CM@R contractor is “on-boarded” early during the design phase.</li> <li>• GMP encourages on-budget and timely construction completion.</li> <li>• The CM@R contractor’s signing authority helps:               <ul style="list-style-type: none"> <li>- Speed up the construction activities;</li> <li>- Implement efficient change management processes, which can minimize the overhead and markup associated with change orders during construction.</li> </ul> </li> <li>• Construction cost overruns due to construction issues are borne by the CM@R contractor as they are typically paid a fixed fee (the Guarantee Maximum Price or “GMP”).</li> <li>• CM@R contracts sometimes include incentive mechanisms to share “savings” if the contractor can deliver the project below the GMP.</li> </ul>	<ul style="list-style-type: none"> <li>• Not a common delivery model in Canada.</li> <li>• The owner retains risks related to design deficiencies.</li> <li>• The Owner’s control is reduced during the construction phase as the CM@R contractor has signing authority.</li> <li>• Construction is usually sole sourced to the CM@R contractor, without the competitive tension of a tender process to optimize the GMP. This means that the Owner needs a solid team to negotiate and “dance” with the contractor (akin to collaborative delivery models).</li> <li>• GMP is likely to include a risk premium, as a result of the risk transfer.</li> </ul>

## Design-Build (DB)

An illustration of the DB delivery option is shown below:

**Figure 4 DB structure**



The DB model awards the design and construction under a single contract. Consortiums, joint ventures, or subcontract agreements may be established between two or more companies to pool the resources and expertise necessary to deliver a DB project. The characteristics of a DB model and the issues associated with it depend upon the unique characteristics of the project and contract formed.



The general contractor is typically the lead in this arrangement as much of the cost, schedule and quality risk relate to the construction.

During the construction period, the Owner would typically make monthly progress payments or milestone payments to the contractor based on the value of work completed.

The tender of the DB is not based upon a detailed design but rather the project requirements are defined in the form of performance specifications by the Owner, which state what the project needs to achieve in terms of functional requirements, rather than how to achieve it. The principal advantage of the DB approach is the elimination of the need for the project owner to manage the interface between the design and construction of a project, and the transfer of the risk associated with this interface to the DB consortium.

The benefits of the DB approach are most likely to be realized on projects which offer significant scope for innovation. The key to the success of the DB approach lies in the quality of the performance specification and ensuring it captures all the owner's requirements without prescribing the means to achieve them.

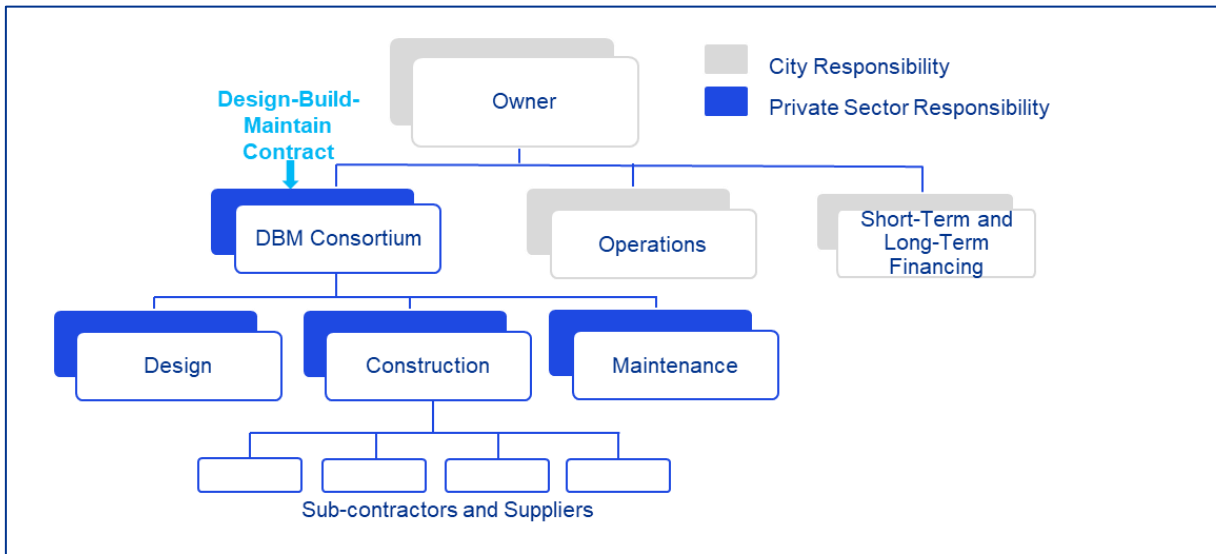
**Table 13 Summary of the benefits and challenges of the DB model**

Benefits 	Challenges 
<ul style="list-style-type: none"> <li>• Significant experience with this delivery model in Canada.</li> <li>• More certainty on final construction price and completion.</li> <li>• Competing contractors are motivated at the bid stage to leverage their technical and commercial expertise to innovate and find the most efficient, design and construction solutions.</li> <li>• Design, construction, and schedule risks are transferred to the DB consortium (i.e., fixed price, schedule delays, liquidated damage, a short-term performance guarantee, etc)</li> <li>• The DB model enables a fast-track process (compared to DBB) as construction and other preparatory works can begin as some design activities are still being completed.</li> <li>• Integration of design and construction creates efficiencies and cost savings.</li> </ul>	<ul style="list-style-type: none"> <li>• The market, and especially contractor risk appetites, have changed and it is now more difficult to transfer risk to the contractor. As such owners are de-risking large projects by de-scaling them, conducting riskier project work themselves through enabling works, adding relief mechanisms for construction inflation, supply chain issues, etc...</li> <li>• DB does not optimize lifecycle costs and long-term quality/ performance compared to long-term contracts involving maintenance and financing (e.g., DBFM). This means that owners need to be more prescriptive regarding performance and design.</li> <li>• Ensuring the right balance between prescriptive and performance-based requirements in the technical spec is challenging. The right balance is needed to ensure that these capture all the owner's requirements without being too prescriptive regarding how to achieve the requirements.</li> </ul>

### Design-Build-Maintain (DBM)

An illustration of the DBM delivery option is shown below:

**Figure 5 : DBM structure**



The DBM model awards the design, construction, and maintenance under a single contract. Consortia, joint ventures, or subcontract agreements may be established between two or more companies to pool the resources and expertise necessary to deliver a DBM project. The tender of the DBM is not based upon a detailed design, but rather the project requirements as defined in the form of a performance specification. The characteristics of a DBM model and the issues associated with it depend upon the unique characteristics of the project and contract formed. The general contractor is typically the lead in this arrangement as most of the cost, schedule and quality risk relate to the construction.

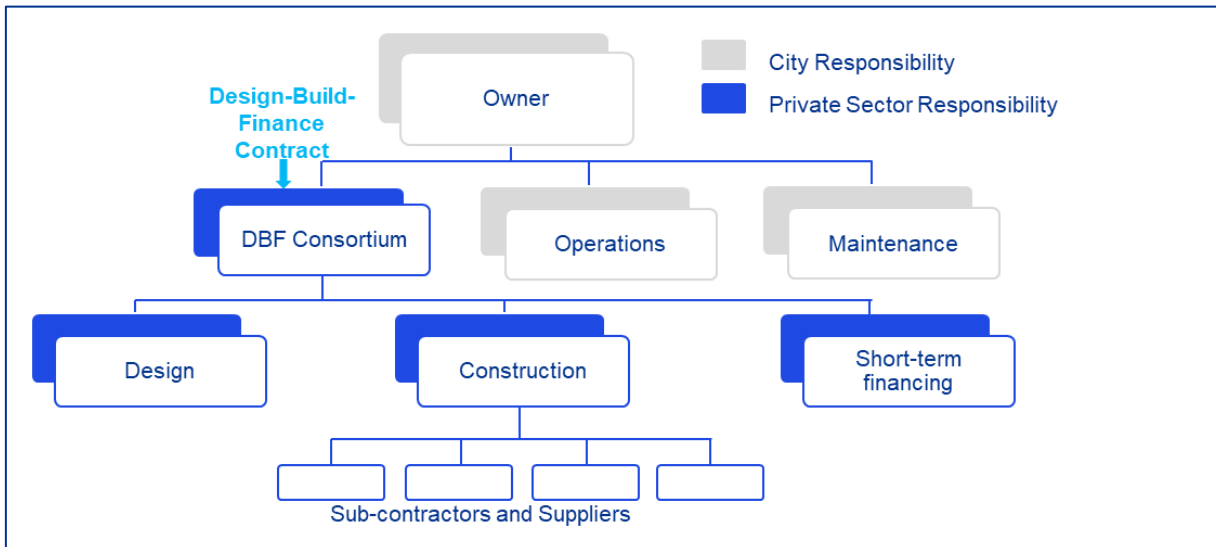
**Table 14 : Summary of the benefits and challenges of the DBM model**

Benefits	Challenges
<ul style="list-style-type: none"> <li>Greater consideration for lifecycle costs.</li> <li>Similar to Design-Build model during design and construction phase.</li> <li>Cost and budget certainty is extended through the life of agreement.</li> <li>Design, construction, and maintenance risks are transferred to the DB consortium over the life of agreement.</li> <li>Long terms maintenance costs are set up front.</li> <li>Performance-based service payments encourages higher maintenance quality.</li> <li>Asset is in good condition at handback.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Design-Build model during design and construction phase.</li> <li>Not a common delivery model in Canada (rarely is the “M” included in a DB contract).</li> <li>Longer planning and delivery period.</li> <li>Increased due diligence, planning and transaction costs.</li> <li>Potential interface issues between maintenance activities and operations.</li> </ul>

### Design-Build-Finance (DBF)

An illustration of the DBF delivery option is shown below:

**Figure 6 DBF structure**





Like a DB model, a Design-Build-Finance (“DBF”) approach awards the design and construction under a single contract. Consortiums, joint ventures, or subcontract agreements may be established between two or more companies to pool the resources and expertise necessary to deliver a DBF project.

The distinguishing feature between the DB and DBF delivery models relate to who retains the financing risk. Under a DB model, the project Owner is responsible for financing the entire project. Conversely, under a DBF model, responsibility for construction financing and the associated financing risks are transferred to the DBF contractor/ consortium. In addition, the DBF consortium will be motivated to complete the project on time as the Owner will withhold all or a significant proportion of payment until project completion. Any incremental interest costs and financial penalties associated with schedule delays will be borne by the DBF consortium.

The characteristics of a DBf model and the issues associated with it depend upon the unique characteristics of the project. Some typical considerations and issues relating to schedule, cost, and quality of a DBf project are summarized below.

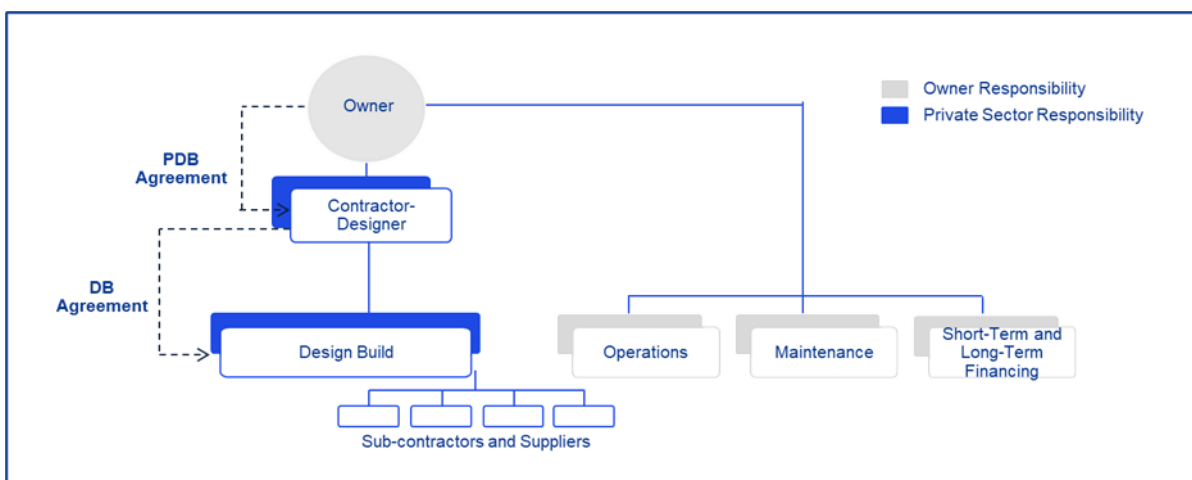
**Table 15 Summary of the benefits and challenges of the DBF model**

Benefits 	Challenges 
<ul style="list-style-type: none"> <li>• Integration of design and construction creates efficiencies and cost savings.</li> <li>• Enhanced constructability and cost efficiency of design plans as the contractor and designer work together.</li> <li>• Can accelerate project delivery schedule (because of shorter delivery and contract award at earlier stage of design completion).</li> <li>• Reduced design and construction risk for the Owner as interface risks between design and construction are borne by Project Co (construction period only).</li> <li>• Lenders provide additional oversight, scrutiny, and due diligence to help enforce performance. This feature does not exist in delivery models without a financing component.</li> </ul>	<ul style="list-style-type: none"> <li>• Does not optimize lifecycle costs and long-term quality/ performance compared to long-term contracts involving maintenance and financing (e.g., DBFM)</li> <li>• Less opportunity for private-sector innovation compared to DBFM or DBFOM</li> <li>• Higher cost of private-sector borrowing compared to public-sector borrowing</li> <li>• Slightly more complex and riskier project agreement due to financing component (e.g., because of potential adverse variances in base rate and credit spread risks)</li> </ul>

## Progressive Design-Build (PDB)

An illustration of the PDB delivery option is shown below:

**Figure 7 PDB structure**




PDB is an approach to contracting that provides the Owner with a contractor-designer at early stages of the project through a collaborative development process and allows a better understanding and allocation of risks during construction. A PDB model offers a two-staged approach:

- First stage: The contractor-designer is provided time and resources to design and document the project and identify project risks. This process is similar to the preliminary stage of an alliance contract where the project scope, target cost and schedule are defined.
- Second stage: The contractor can commence the construction with negotiated risks. This allows for the establishment of a guaranteed maximum price (GMP) or guaranteed construction sum (GCS) for the project.



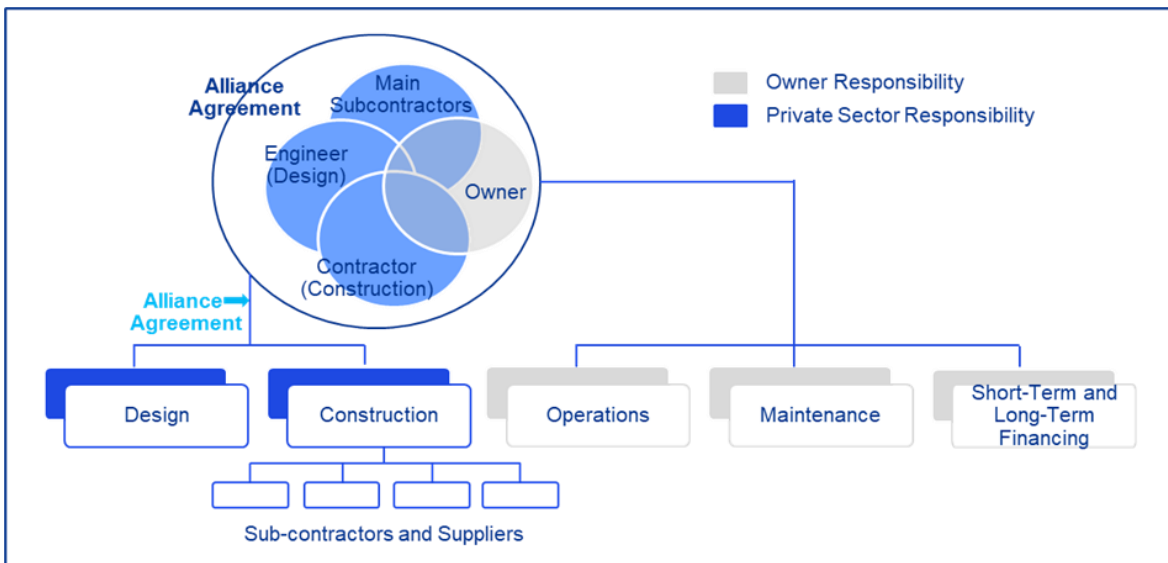
**Table 16 Summary of the benefits and challenges of the PDB model**

Benefits 	Challenges 
<ul style="list-style-type: none"> <li>• The primary parties focus on project outcomes and are incentivized to achieve the same goals e.g., through incentives mechanisms like cost-saving sharing.</li> <li>• Earlier involvement of all parties at preliminary design and pushing design to a higher level of completion provides greater visibility into project costs.</li> <li>• Upfront collaborative work aims to reduce the threat of disputes.</li> <li>• The project’s risks can be better managed through a collaborative effort and the fact that design is advanced to a higher level of completion before the price is fixed. The more up-front due diligence may be desirable when schedule risks (as well as cost risks) are difficult to quantify.</li> <li>• During the collaborative development phase, the project draws on the expertise of all parties.</li> <li>• PDB usually leads to a fixed-price contract being executed.</li> </ul>	<ul style="list-style-type: none"> <li>• Very few projects have been delivered using a PDB approach in Canada.</li> <li>• Project success is highly dependent on the behaviour of individuals within the team during the collaborative development phase.</li> <li>• PDB requires significant time and resource commitments from the Owner. The Owner’s team needs to be sufficiently capable to deal with the complexity of the project and PDB delivery method. PDB requires extensive open book pricing knowledge and an ability to work collaboratively with the Contractor.</li> <li>• Non-competitive bid may lead to higher price (this is why it is important for Owner to be “sufficiently resourced” to be able to challenge and “dance” with the contractor).</li> <li>• Contractor may be incentivized to hold back innovation during the development phase and propose it during execution to benefit from a gain-sharing mechanism.</li> <li>• Difficult to “off-board” a poorly performing partner.</li> </ul>

## Alliance

An illustration of the Alliance delivery option is shown below:



**Figure 8 : Alliance structure**



The Alliance model contractually requires collaboration among the primary parties – owner, designer, and construction contractor, and potentially subcontractors – so that risk, responsibility, and liability for project delivery are collectively managed and appropriately shared. The fundamental difference

between an alliance model and more traditional contracts is the underlying principle of a non-adversarial approach between the contracting parties (fostering greater collaboration). Compensation for parties is typically comprised of three components: Cost reimbursement to cover costs, incentive for achieving or bettering agreed project cost targets, and rewards for accomplishing set project goals.

**Table 17 Summary of the benefits and challenges of the Alliance model**

<b>Benefits</b> 	<b>Challenges</b> 
<ul style="list-style-type: none"> <li>• Parties focus on project outcomes and are incentivized to achieve agreed upon goals.</li> <li>• Earlier involvement of all parties may provide greater visibility into project costs.</li> <li>• Participants are encouraged to take calculated and agreed risks and opportunities for cost saving and performance improvement, without fear of legal liability if they fail.</li> <li>• The project’s risks can be better managed through a collaborative effort, where each party’s knowledge, skills and resources are shared.</li> <li>• There is flexibility to adapt to scope changes, risks, and opportunities as they arise during delivery of the project. Less constrained design process may be more innovative and co-operative.</li> <li>• Integrated approach enables pooling of resources and expertise and ensures no duplication of resources between parties.</li> <li>• Added up-front due diligence is desirable when schedule risks (as well as cost risks) are difficult to quantify, as they allow the Owner to incentivize the contractor to manage schedule risks without incurring a significant risk premium.</li> </ul>	<ul style="list-style-type: none"> <li>• Very few projects have been delivered using an Alliance delivery model in Canada.</li> <li>• Alliance requires commitment and collaboration from all parties, including significant time commitment from the Owner. The Owner’s team needs to be sufficiently capable deal with the complexity of the project and Alliance delivery method. Alliance requires extensive open book pricing knowledge.</li> <li>• Project success is directly dependent on the collaborative behavior of individuals within the team.</li> <li>• Cost and schedule risks are shared under alliance contracts, which exposes the Owner to ‘significantly more risk than under a fixed price contract.</li> <li>• Non-competitive bid may lead to higher price (this is why it is important for owner to be “sufficiently resourced” to be able to challenge and “dance” with the contractor).</li> <li>• Contractor may be incentivized to hold back innovation during the development phase and propose it during execution to benefit from a gain-sharing mechanism.</li> <li>• Difficult to “off-board” poorly performing partner.</li> </ul>

# 2. Schedule comparison various models

End of Reshock season (start demo)  
 Apply for Building Permit prior to OBC change  
 Event Centre construction  
 North Stadium construction



	2024			2025			2026			2027			2028			2029			Comments												
	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar		
<b>CURRENT PLAN - CM at Risk (extension to BBS)</b>																															
Plan																															
Design																															
Building Permit																															
RFQ/Tender - CM																															
Construction Start																															
<b>Progressive DB</b>																															
Plan																															
Develop Specs																															
RFQ/Tender - DB																															
Design																															
Building Permit																															
DB Contract Negotiation																															
Construction																															
<b>CM at Risk</b>																															
Plan																															
RFP - Design																															
Design																															
Building Permit																															
RFQ/Tender - CM																															
Construction Start																															
<b>DB</b>																															
Plan																															
Develop Specs/Requirements																															
RFQ/Tender (RFP) - DB																															
Design																															
Building Permit																															
Construction Start																															
<b>D-B-B</b>																															
Plan																															
RFP - Design																															
Design																															
Building Permit																															
RFQ/Tender - Construction																															
Construction Start																															
<b>D-B-B (extension to BBS)</b>																															
Plan																															
RFP - Design																															
Design																															
Building Permit																															
RFQ/Tender - Construction																															
Construction Start																															

December 15, 2023



[kpmg.ca](https://www.kpmg.ca)

The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation.

© 2024 KPMG LLP, an Ontario limited liability partnership and a member firm of the KPMG global organization of independent member firms affiliated with KPMG International Limited, a private English company limited by guarantee. All rights reserved.

The KPMG name and logo are trademarks used under license by the independent member firms of the KPMG global organization.