Ministry of
Transportation
and Infrastructure

Surrey Langley SkyTrain Project

Appendix G: Level of Private Finance
Multiple Contract Strategy
Contract #1 DBF

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Confidential

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1 EXECUTIVE SUMMARY

The amount and timing of private financing recommended for Contract #1 – Guideways of the Surrey Langley SkyTrain Extension Project ("the Project") under a multiple contract model follows examination of a number of considerations relevant to the construction and operating periods. While it is acknowledged that there may be a range of suitable approaches, the structure summarized below provides appropriate value-to-risk protection for the Province. For clarity, the level of private finance is expressed as a percentage of the total funding requirement, which is equivalent to the final DB price (inclusive of any financing costs). The amount of private financing is ultimately funded by the Province via a substantial completion payment at the end of the construction period.

The full Surrey-Langley SkyTrain Extension Project consists of three separate contracts:

- Contract #1 – Guideway
- Contract #2 – Stations
- Contract #3 – Trackworks and Systems

This consideration of optimal finance levels only considers Contract #1 as it is the only contract under consideration as a DBF. The contracts are to be procured separately and completely independent. This analysis of Contract #1 has no impact upon the other contracts or vice versa.

1.1 RECOMMENDATION

Giving the particular nature of the Project as outlined in the business plan, private financing at the 20% level, or more, is seen to significantly exceed conservative estimates of critical risk thresholds at the 8, 18 and 29 month durations. This is found to negatively impact the cost effectiveness of the financing. Private finance at the 20% level would adequately cover the critical risk thresholds while being more reliant on lower quality security throughout the construction period. These, along with having a level of private finance (max debt draw) that is attractive to the market at approx. [redacted], are the key considerations that drive the recommendation of 20% private finance for the Project.

Private financing at the 20% level, drawn significantly faster than any contribution from the Province until approximately 20% of total construction spend (or within 9 months from financial close), is recommended to provide quality protection against construction period risks to the Province throughout the Project.

The Province's contribution during construction is assumed to take the form of:

- 10% of the Project cash requirement (Project Co funding 90%) until the cumulative Project Co. financing reaches 20% of the total project costs; and
- regular payments that match Project Co's cash requirements after cumulative Project Co. borrowing financed 20% of Project costs.

The 20% (privately financed) balance is to be funded by the Province at substantial completion.

1.2 CONSTRUCTION PERIOD KEY CONSIDERATIONS

The assessment considered the Province's potential financial exposure should a major risk materialize and lead to termination of the private partner. The estimated cost to the Province of such termination, including repair and retender, was compared to the amount of private financing already injected at the estimated time of occurrence. In a public-private partnership (PPP) the outstanding privately financed amounts are at risk to the private partner in a termination scenario and therefore represent a high quality security to the Province.

Private financing exceeding 20% of construction costs was found to be sufficient to cover risk exposure based on the base estimate. Private financing around 30% was considered to provide higher quality security to the Province throughout the construction period. While private financing exceeding 40% was not viewed as cost effective in light of higher private capital costs not justifying the excess security provided against construction period risks.

1.3 BACKGROUND

It is anticipated that the Contract #1 – Guideways portion of the full Project may be delivered through a single design-build-finance (DBF) contract with a private partner (Project Co). This report seeks to determine the optimal amount and timing of private financing for the Project by comparing the likely magnitude and timing of project risks to the security that private financing provides to the Province. The analysis for the construction period measures the Province's financial exposure by assuming that, upon occurrence of the risk event:

- Project Co fails to rectify the event and the contract is terminated;
- the Province must pay for the event to be rectified; and
- the balance of the contract is retendered.

1.4 PRIVATE FINANCING AS SECURITY DURING CONSTRUCTION PERIOD

During the course of construction, but only after an initial capital-at-risk accumulation period, the Province makes milestone and progress payments (Authority Funding) to Project Co. The progress payments represent a portion of the project costs already incurred by Project Co with the balance having been funded by private financing.

Project costs that are funded by private financing are paid by the Province to Project Co after substantial completion is achieved. If there is a termination event prior to substantial completion, the Province can net off the increased costs associated with achieving substantial completion from the payment to Project Co. The privately financed portion is referred to as '**Unfunded Value in the Ground**' in this report. It represents work that has been completed by Project Co but for which the Province has yet to pay.

As the cost of private financing tends to exceed that of public financing, it is common practice in B.C. to set the private financing amount at a level that provides protection from the key risks, but that is not so high as to add unnecessary costs to the project. This report does not attempt to determine the relative cost of private financing (which is done through a separate value for money exercise) but instead seeks to determine the minimum level of private financing required to secure the risk transfer.

1.5 OTHER SECURITY DURING CONSTRUCTION PERIOD

Most project risks are passed down by Project Co to its key subcontractors. Project finance lenders therefore require the key subcontractors to provide security to back their performance obligations – normally as a combination of letters of credit, performance bonds and/or parent company guarantees. Lenders will also require that any subcontractor liability caps are set at or above a prescribed level.

The subcontractor security can be called upon by Project Co (or by a party stepping into Project Co) if the subcontractor's performance has led to a claim for costs or damages and such amounts have not been paid by the subcontractor. It is particularly valuable to lenders because, without it, the debt principal is at risk if the Project is terminated.

Lenders will always have first right to the subcontractor security. Any security remaining after lender claims have been addressed may be called upon by the Province (provided the project documents have specifically contemplated this). In this report the amount of security that is estimated to be available to the Province is called '**Unspent Proponent Security**'. It is calculated by first estimating the amount of subcontractor security and then subtracting from it the amount that a lender might claim to repay its debt in a termination scenario.

This type of security is less valuable to the Province when compared to 'Unfunded Value in the Ground'. The ultimate provider of the security will resist any claims – particularly for parent company guarantees and performance bonds. Parent company guarantees would also be worthless if the parent is insolvent at the time of claim.

1.6 OVERALL FOCUS FOR THE CONSTRUCTION PERIOD

During the construction period, the report considers both 'Unfunded Value in the Ground' and 'Unspent Proponent Security'. However, due to the uncertain nature of 'Unspent Proponent Security', the report focuses more on comparing the 'Unfunded Value in the Ground' to the Province's potential liability in a termination event.

For simplicity, the analysis focused on three different amounts of private financing (20%, 30% and 40%). However, the Province may set the amount of private financing to any amount and is not limited to these three levels.

2 BASE PROJECT ASSUMPTIONS

The following tables provide details of the inputs which were used in the shadow bid (DBF) financial model, including inputs such as capital costs, financing and proponent security. These input assumptions are from the financial model as of March 21, 2022. All dollar values shown are in nominal dollars, unless otherwise stated.

2.1 CONSTRUCTION PERIOD ASSUMPTIONS

Table 1: Construction Period Assumptions for the Shadow Bid (nominal, $millions)

Cost Category	Assumptions
Capital Costs	[redacted]
Transferred Risks	[redacted]
Interest During Construction and Financing Fees	[redacted]
Special Purpose Vehicle (SPV) and Bid Development Costs	[redacted]
Total Costs to be Funded by Project Co	[redacted]
Total Months of Construction	[redacted]

Table 2: Private Finance Assumptions

Category	Assumption
General Assumptions	
Timing of private finance	• Private finance to fund 90% of construction costs until a cumulative value of 20% of total costs is reached. Provincial funding takes over at 100% from this point forward.
Total amount of private finance	Scenario dependent: approx. [redacted] (at 20% private finance)
Interest earned on cash balances	1%
Long Term Project Finance	
Debt Type	Bank (Revolving Credit Facility)

Base Rate (forward swap rate provided by Provincial Treasury)	1.95%
Credit Spread	1.50%
Interest Rate Buffer (for increases in base rate or credit spread)	0%
All-in Rate	3.45%
Debt Arrangement Fee	2%
Commitment Fee	0.45%

Table 3: Construction Period Performance Security Assumptions

Performance Security	Assumption
Limit of liability of DB contract (secured by a parental company guarantee)	
Proponent Security Discount	
Letter of Credit	of base construction costs
Bonding	

3 KEY CONSTRUCTION PERIOD RISKS

Total quantified construction period risks have been considered in the analysis. The team considered the anticipated timing of any risk event, measured as the number of months after financial close, as well as the potential financial consequence.

The analysis focuses on the possible financial impacts should any risk event lead to a Project Co default since it is then that the Province incurs the potential liability. Should a default occur, there are a number of additional costs that would transpire in order to rectify the situation and complete construction of the Project. The following table identifies and explains the cost items that have been quantified as part of the analysis:

Table 4: Additional Costs in the Event of a Project Co Default

#	Cost Item	Description	Calculation Methodology
1	Retender Premium	This is the additional premium that a private sector bidder would include into their bid due to a retender. A premium occurs since the bidder would have to spend additional funds to remedy any existing issues and also to provide an additional contingency for taking over a project which may now have a higher perceived risk.	
2	Delay Cost	A retender process can take many months to complete and as a result there is a delay in the completion of the project and an associated cost for this delay.	
3	Retender Cost	This is to account for Provincial costs associated with the retender process (project management, advisory, legal, etc.).	
4	Risk Value	The likely cost to rectify any or a number of significant risk events.	

[1] The 25% value of Transferred Risks included is lower than the 50% inclusion rate that is usually used in these types of analysis. The reason for this is that the capital cost estimator has excluded any contingencies from the base estimate. All of these contingency items are included in the Transferred Risk, thus making the risk calculation higher than for other projects.

4 ESTIMATED INCREMENTAL AUTHORITY COSTS AT RETENDER

The Project Team considered three construction period scenarios. These are described in **Table 7** below.

Table 5: Project Construction Period Scenarios

Construction Period Scenarios	

Table 8 provides a summary of the estimated incremental cost to the Province at the point of default and retender, taking into account the four cost categories identified in Table 6 above. The total incremental costs are shown for each cost scenario – low cost, medium cost, high cost.

Table 6: Estimated Incremental Cost to the Province: Likely Timing of Occurrence ($ millions)

Estimated Incremental Cost to the Province	Scenario 1	Scenario 2	Scenario 3
Low Cost ($ millions)			
Medium Cost ($ millions)			
High Cost ($ millions)			

5 CONSTRUCTION PERIOD ANALYSIS

5.1 OPTION 1: 20% OF PRIVATE FINANCING

The starting point for the analysis is based on the following private financing assumptions:

- 20% of private financing (in context of DBF this is short-term construction debt only); and
- private financing is drawn in a 90:10 ratio to Provincial funding until 20% of private finance reached.

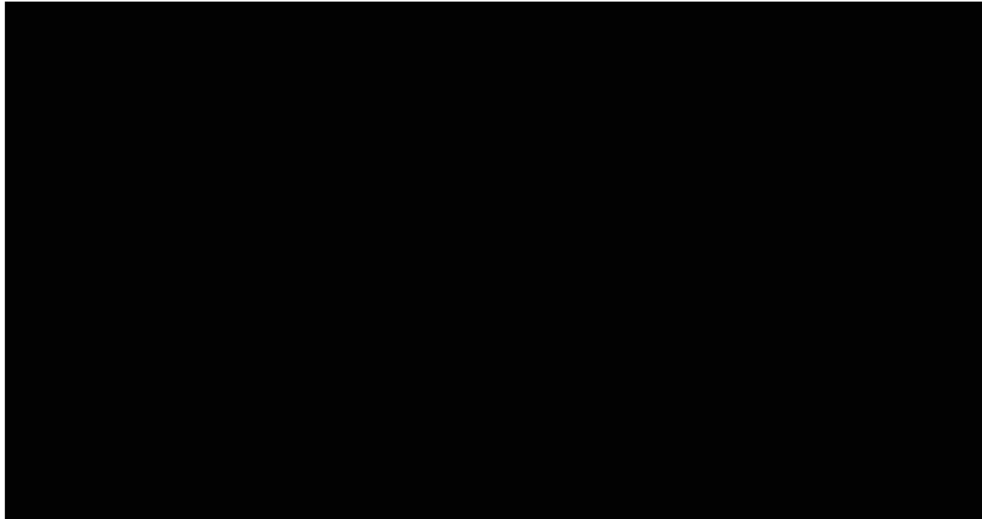
The following graph illustrates how the investment of private financing causes the 'Unfunded Value in the Ground' (shaded in green) to grow steadily over time. This is the amount that is financed with private capital (i.e. not funded by the Province) and is repaid by the Province's contributions during construction and substantial completion payment. The Province's contribution comes after significant accumulation of private capital at risk in the early part of the construction period. Note that the likelihood of an early termination is also higher during the early phases of construction and thus, deferring significant Provincial contribution until well into the construction period enhance the Province's security against such risks. Accordingly, the analysis assumes that the Province would commence making regular monthly payments to fully cover Project Co's costs after Project Co. has financed the first 20% of project costs (under the 90:10 split). The Province at substantial completion then makes a milestone contribution that is equal to the final value of Project Co's outstanding debt (that was incurred in financing the early 20% of project costs). Considering that private capital costs more than public capital and that the magnitude of risk is lower as one approaches the third risk scenario, the level of private finance in place at this time significantly covers the risk event.

The other forms of anticipated security are shaded in blue. This represents the 'Unspent Proponent security', i.e., security that could be available to the Province following lender claims. It is inversely related to the amount of private debt outstanding because, as private financing increases, so does the likely claim lenders will have against the security.

As described at the start of this report, the 'Unfunded Value in the Ground' is a high-quality security. The 'Unspent Proponent Security' is a much lower quality security as the quantum is uncertain due to the Province's claims being subordinate to those of the lenders making it much harder to claim.

The symbols represent the additional costs under each scenario. The overlay graph below compares the magnitude of costs associated with each scenario against the security offered by the presence of private financing.

Figure 1: Private Financing 20%



5.2 INCREASING PRIVATE FINANCING: 30% AND 40%

Based on the analysis carried out above and given that the level of private finance at 20% is adequate to cover construction period risk for the Project, it is evident that any level of private finance exceeding 20% will be able to provide sufficient coverage over the construction period as well. However, higher private capital costs may not be justified relative to the additional security afforded by higher levels of private finance (especially when increasing beyond the 40% level).

The figures below present risk coverage at 30% and 40% of private finance, respectively, for reference.

Figure 2: Private Financing – 30%

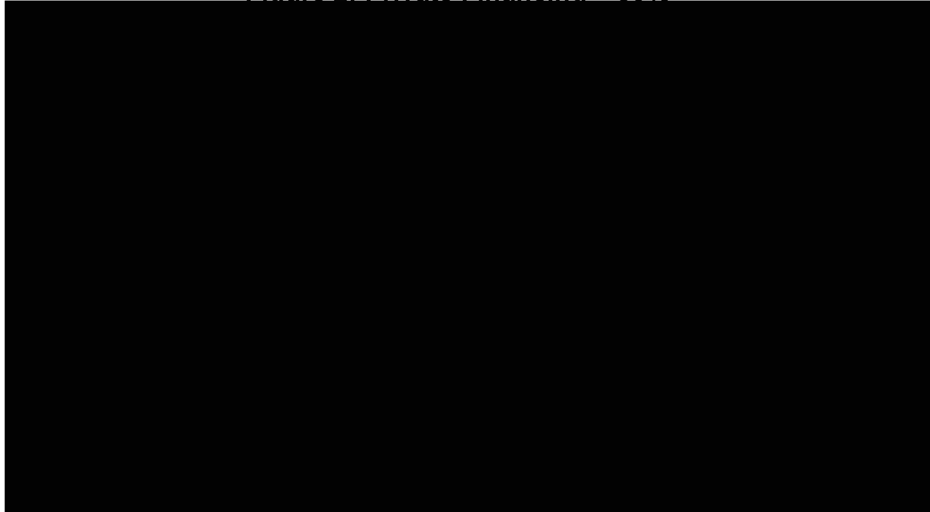
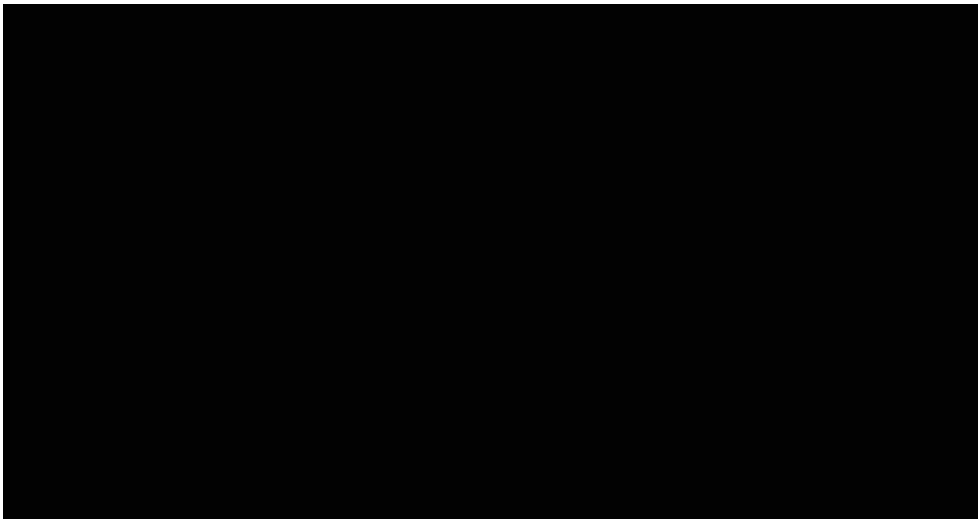


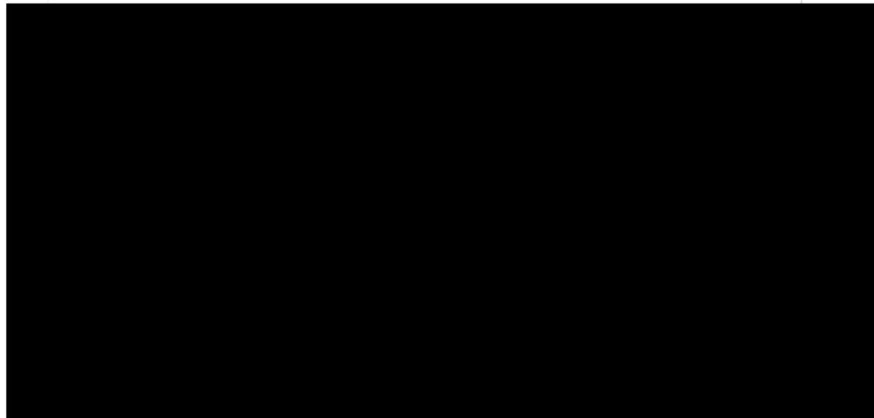
Figure 3: Private Financing – 40%



5.3 SUBSTANTIAL COMPLETION PAYMENT AND COMMISSIONING RISKS

A key risk not included in the risk events in the previous analysis is the [redacted]. It is anticipated that Project Co. will be responsible for the [redacted] such that Contract #2 and Contract #3 can proceed in this multiple contract approach to the entire Project. It is therefore desirable security for the Province to have a significant balance of Project Co. financing in place at the anticipated contract completion time to ensure performance. The figure below shows the balance of Project Co. outstanding finance in for each private finance level at completion.

Figure 7: Private Financing in Place at Completion of Contract #1



At the 20% level of private finance the Province will have approximately [redacted] of liquid security in the form of what is essentially a holdback. This amount should provide more than adequate security to ensure that Project Co. rectifies any final defects and Contract #2 and #3 are able proceed according the anticipated schedule. Additional amounts of private finance are likely over-securing these final Project Co. obligations and therefore not justifying the additional financing costs associated with larger outstanding debt balances.

5.4 SUMMARY OF ANALYSIS OVER CONSTRUCTION PERIOD

The Project team has identified the following based on the analysis carried out above:

- Early termination events prior to [redacted] into construction are likely to be heavily reliant upon 'Unspent Proponent Security' because of its timing.
- Any level of private finance exceeding 20% would be able to provide sufficient coverage for the additional costs associated with a termination event during the construction period.
- [redacted]
- [redacted]

6 QUALITATIVE ANALYSIS

In addition to the quantitative analysis, there are some key qualitative criteria to consider in drawing a final conclusion regarding the optimal level of public financing for a project. These are described below.

6.1 ATTRACTIVENESS TO INVESTORS

The analysis in this report has examined project-specific factors in order to recommend the optimal level of private finance. However, it is important to keep in mind market capacity and sentiment and past project precedents in order to ensure the recommendation will be well received by the market.

Active market participants have a significant amount of private capital available and are seeking investment opportunities in the BC PPP infrastructure market. Regular discussions with established lenders and equity providers suggest that in current market conditions, projects become less attractive when the private financing component falls below $100 million in debt. For a project of this size, there likely would be significant interest and little if any concern around capacity constraints given the current market environment; noting that the market's preference is generally for higher private finance levels. At the recommended 20% level of private finance the private finance debt required would be just under [redacted] million.

The project team has taken these factors into consideration but neither appears to be a limiting element in making a recommendation.

6.2 EFFICIENT PRICING

The amount of private capital should also be considered against the anticipated source of funds and the relative competitiveness of different markets. Larger total debt can access a wider range of market opportunities and is likely to result in in lower financing costs.

Given private financing in the range of [redacted] at any level, this project can be expected to achieve attractive pricing. Generally, as the size of the private investment increases beyond [redacted], the financing becomes more efficient, which benefits the Province. The level is also below the [redacted] [redacted] level where the finance market generally begins to constrict.

6.3 THIRD PARTY DUE DILIGENCE

The private investors in a project undertake extensive due diligence on the project prior to investing capital. Once invested, the interests of both lenders and equity investors are aligned with the Province and they will provide an additional level of oversight. Project Co has to carefully monitor the project and ensure it mitigates its risk exposure because it has limited resources beyond the equity investment to bear any risks.

7 OPTIMAL LEVEL OF PRIVATE FINANCE – PROVISIONAL CONCLUSION

The conclusions outlined below are considered to be provisional and may change as new information comes to light.

7.1 UPFRONT VS PRO RATA INJECTION

From a cost benefit perspective and based on the analysis carried out in Sections 5 and 6 above, private finance injected at a much more rapid pace than the Provincial contribution earlier in the project is warranted for the Project. Drawing the private capital early in the project allows higher quality security in the form of "Unfunded Value in the Ground' to accumulate substantially earlier during construction where risk is highest for early termination.

7.2 RECOMMENDATION ON AMOUNT OF PRIVATE FINANCE

Private financing of any level between 20% and 40% would provide adequate protection for construction period risks for the Project,

Private financing at the 40% level, or higher, may negatively impact the Project's debt cost effectiveness. As such, 20% of private finance is considered most appropriate for the Project.

Private financing at a level of 20% allows for sufficiently large investment to attract strong interest in private capital markets, affords efficient financing solutions, and ensures robust investor oversight in Project Co's delivery of the Project.

Based on these analysis and expected outcomes, the Project Team recommends a 20% level of private financing for the Project.