



9 DELIVERY MODEL ANALYSIS

CHAPTER SUMMARY AND CONCLUSIONS:

- The delivery model analysis consisted of a three phased approach – firstly a high level Value for Money (VfM) assessment was conducted, secondly a workshop which identified evaluation criteria and weightings for shortlisted delivery models, and thirdly a workshop where those models were evaluated.
- Workshop attendees agreed that a PPP was not viable, that the works were best delivered as a single package, and that Construct Only (CO) and Design and Construct (D&C) traditional delivery models were the most appropriate for assessment. In addition, the market sounding process confirmed that the market would be equally content to bid for either a D&C or CO delivery model.
- A Public Sector Comparator assessment is not required as the delivery of the project via a PPP is not viable.
- The assessment concluded that while a CO model scored marginally higher than a D&C model, either model is considered to be a viable choice for delivering TEARC.

The purpose of this chapter is to outline and assess the range of potential delivery models to procure and deliver TEARC. The objective of this assessment is to identify a preferred delivery model that is likely to provide the best Value for Money (VfM)³⁵ in meeting the identified service need.

This chapter provides an overview of the packaging and delivery model options considered and the outcomes of the delivery model workshop. It considers:

- The approach and analysis methodology regarding packaging.
- The delivery model options analysis methodology.
- The qualitative VfM methodology.
- The evaluation criteria defining the State’s objectives and against which the different delivery models are assessed (“the Delivery Model Evaluation Criteria”).
- Key features of relevant traditional and partnership delivery models, including precedent transactions in Queensland (where available).
- Assessment of the advantages and disadvantages of each model, in the context of TEARC.
- Evaluation of each model against the Delivery Model Evaluation Criteria as agreed at the delivery model workshop.
- The preferred traditional models resulting from the assessment, and the rationale for the exclusion of PPP models from assessment.
- Conclusions drawn following the delivery model workshop.

³⁵ Note that VfM in this context refers to VfM between PPP and traditional delivery models. Where the term “value for money” is used, this denotes value for money more generally.



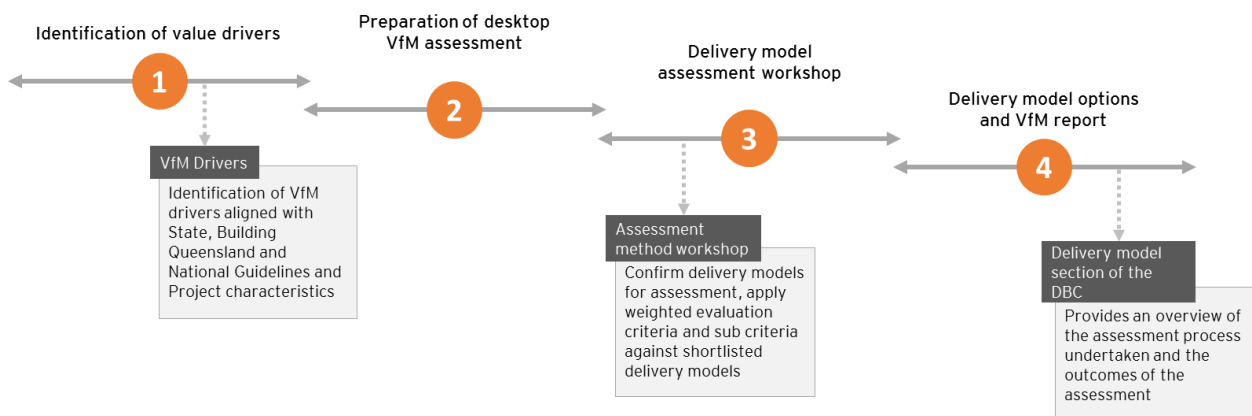
9.1 Assessment Methodology

The methodology for assessing the preferred delivery model for TEARC was prepared to build upon best practice, the work undertaken to date on TEARC and is based on State and National guidelines including:

- Queensland Government Project Assessment Framework (PAF)
- Building Queensland Framework
- National PPP Guidelines (the National Guidelines).

Figure 9.1 sets out the sequence of activities in a qualitative delivery model assessment.

Figure 9.1 Delivery Model Assessment Components



The purpose of the qualitative delivery model assessment is to subjectively test whether the objectives, service needs and proposed structure of TEARC are likely to provide the private sector with sufficient scope to access and employ the key value drivers and deliver value for money for TEARC. It tests the extent to which the value drivers are applicable to TEARC and whether the potential exists for these drivers to deliver a VfM outcome to the State under a PPP or traditional model.

A three-phase process was undertaken for the purposes of TEARC to complete the delivery model assessment:

- **Phase 1: High Level VfM Assessment:**
Identification of potentially suitable delivery models (traditional and PPP) via desktop analysis to provide focus for subsequent stakeholder workshops to undertake the qualitative assessment. This assessment considered that TEARC did not present a prima facie case for viability as a PPP project. Further details of this outcomes of this scoping are contained in Section 9.2.1.

- **Phase 2: Delivery Model Methodology Workshop:**

Key stakeholder workshop to identify and agree evaluation criteria, sub-criteria and weightings to be applied to agreed delivery models. The workshop also reviewed the outcomes of the high-level scoping (Phase 1) of traditional and PPP models in the context of TEARC, and concluded that prima facie, there was no potential for VfM under a PPP model. As a result, the delivery model workshops did not assess PPP delivery models.

- **Phase 3: Delivery Model Assessment Workshop:**

Key stakeholder workshop to re-confirm the evaluation criteria, sub-criteria and weightings, and perform a two-step assessment of traditional delivery model options involving a short-listing process, then evaluation of short-listed options to confirm a preferred approach.



The following key assumptions were taken into consideration during the assessment process:

- Design and construction are for TEARC only (e.g. rail line only, not including removal of existing line, port upgrades).
- Maintenance and lifecycle costs were to be undertaken by Queensland Rail given the size of TEARC relative to the rest of the network currently operated by Queensland Rail (e.g. ongoing maintenance and lifecycle replacements of below rail assets).

Table 9.1 outlines the proposed responsibilities assumed in the assessment for maintenance and operations of a Construct Only and Design and Construct delivery models.

Table 9.1 Delivery Model Assumptions and Limitations

MODEL	MAINTENANCE	OPERATIONS
Construct Only	Delivered by the State	Controlled / delivered by the State*
Design & Construct	Delivered by the State	Controlled / delivered by the State

* A private operator could be appointed by the State in accordance with existing arrangements

9.2 VfM Assessment

The VfM Assessment is conducted to assess the suitability of a project being delivered through a PPP compared to a traditional delivery model. PPPs can deliver VfM when there is opportunity for risk transfer, whole-of-life costing and innovation, higher asset utilisation and integration of design, construction and operations.

The following section summarises outcomes of the assessment of the Phase 1a: High Level Scoping of the suitability of PPP delivery model (Section 9.2.1) and the subsequent confirmation of Phase 1a outcomes in the Phase 1b: Delivery Model Methodology Workshop (Section 9.2.3).

9.2.1 High Level Assessment of PPP Suitability

In advance of Market Sounding and Delivery Model for the DBC, a high-level assessment of VfM was carried out in order to determine whether a PPP model could be a potentially viable delivery model, and whether to include financiers in the market sounding process.

This assessment considered that TEARC did not present a prima facie case for viability as a PPP project, and therefore a high-level assessment was conducted in order to determine whether a more detailed assessment of PPP delivery models was appropriate. The prima facie case against a PPP delivery model was based on the following:

- Expected value of \$300m was on the lower end of typical PPP project values. As a result, bid costs, typically in the order of \$20m to \$40m for a bidder, may preclude market interest in TEARC, particularly where bid costs were not reimbursed. The procurement cost for Government would also be significant relative to a traditional project.
- TEARC is of limited technical complexity, limited to a defined corridor and design and build outcomes are highly prescribed under regulation and technical specification. As such there is limited scope for innovation to drive VfM outcomes. For example, there is limited opportunity for risk transfer and therefore the performance regime would be hard to construct.
- Given the limited opportunity for risk transfer, the cost of private finance will not be justified by the transfer of systematic and project risks.
- Operations are likely to be conducted by Queensland Rail and are expected to be of very low value relative to capital costs. Therefore, there was limited scope for a PPP model to drive whole of life savings.



- The maintenance component of TEARC is limited, given the rail line length of 8 kilometres. The difficulties associated with interfacing with Queensland Rail maintenance operations on adjoining rail assets preclude any costing efficiencies from bundling maintenance with the design, construction and financing. In addition, the economies of scale are not significant enough to justify removing the maintenance and lifecycle obligations of TEARC from QR.
- There is insufficient revenue for a Build Own Operate and Transfer model or any option that involves the private sector taking market demand risk.
- Queensland Rail already manages access and charging and to carve out any revenue stream from this integrated system would be complex and potentially flawed.
- The Port of Townsville is likely to be upgraded and the existing Port Branch Rail Line may eventually be closed down. This would introduce variations for any TEARC PPP that would be difficult for the State to implement, as PPP models tend to limit post contractual close flexibility.

It was concluded that whilst a Design, Build, Finance and Maintain PPP model could offer an alternative financing solution for TEARC, it would likely deliver limited VfM benefits for the State considering it provides no additional risk transfer relative to traditional models, has limited prospect of driving increased innovation and incurs higher financing, tendering and transaction costs compared to a State funded delivery model.

9.2.2 VfM Assessment Evaluation Approach, Criteria & Scoring

The following section outlines the evaluation approach, criteria and scoring mechanism used to assess for the VfM assessment.

▪ Evaluation Approach

PPPs can be appropriate for projects where combining construction and operations or maintenance activities within a single project delivery contract can result in synergies or whole of life cost savings. As described in Section 9.2.1, there is a prima facie case against the viability of all PPP delivery models for TEARC.

On that basis, the VfM assessment was conducted not on a specific PPP model but on PPPs at a conceptual level, relative to traditional models at a conceptual level. Based on TEARC characteristics, objectives and outcomes sought, the following evaluation criteria were utilised during the VfM assessment.

▪ Evaluation Criteria

Table 9.2 identifies the VfM drivers used to compare the suitability of PPP and traditional delivery models. These drivers are derived from the PAF and the National PPP Guidelines.

Table 9.2 VfM Drivers

VFM DRIVER	DESCRIPTION
Output based service requirement encouraging innovation	<ul style="list-style-type: none"> ▪ Does the delivery model or Project allow for setting the output, but not the means of delivery of that output (e.g. specific dimensions or engineering or fit out)? ▪ Is the output easily described and understood by bidders? ▪ Is there any scope for innovative delivery?
Risk allocation	<ul style="list-style-type: none"> ▪ Optimal risk allocation is about allocating the potential Project risks to the party (either the public sector, or contractors) that is best placed to manage them. For instance, a construction firm that is operating a site is best placed to manage work health and safety considerations.



VFM DRIVER	DESCRIPTION
	<ul style="list-style-type: none"> VfM is contingent upon understanding the risks and determining whether risks are better managed by the private sector under a PPP. This also requires consideration of how well risk can be transferred (built into pricing), without significant scope changes or variations. Pricing of risk requires a consideration of the premium that the private sector would likely command under a PPP project.
Whole of life costing	<ul style="list-style-type: none"> Does integration between design, construction, operations and maintenance under PPP delivery provide the incentive to achieve lower whole of life costs? Is an efficient mix of operating and capital expenditure offered under a PPP solution? Will TEARC attract a significant operating expenditure? (This typically delivers higher value for money).
Asset utilisation	<ul style="list-style-type: none"> Does the asset offer the opportunity to achieve additional revenue?
Competitive market	<ul style="list-style-type: none"> Will the delivery model offer a competitive bidding process? That is, is there sufficient private market depth and market interest in TEARC?
Other factors	<ul style="list-style-type: none"> All other factors that may arise throughout the session.

▪ Scoring Mechanism

The PAF, BQ Framework and National PPP Guidelines each provide alternative illustrative scoring mechanisms used to assess the scope for value generation for each assessment criteria. Table 9.3 illustrates the proposed scoring mechanism for the qualitative VfM assessment for TEARC, as described in the PAF.

Table 9.3 VfM Driver Ratings

RATING	DESCRIPTION
×	Represents no scope for value generation.
✓	Represents some scope for value generation.
✓✓	Represents reasonable scope for value generation.
✓✓✓	Represents excellent scope for value generation.

9.2.3 VfM Assessment Outcomes

The VfM assessment of traditional and PPP delivery models for TEARC is detailed in Table 9.4 to Table 9.8.

The other factors evaluation criterion was not applicable to the assessment and was recorded as “N/A” for both the PPP and traditional delivery model assessment.

Table 9.4 Output Based Service Requirements Encouraging Innovation Assessment

PPP DELIVERY	TRADITIONAL DELIVERY
<ul style="list-style-type: none"> Uses a clear output specification to communicate the project requirement. However, the nature of TEARC limits scope for innovation in delivery. 	<ul style="list-style-type: none"> Uses a clear output specification to communicate the project requirement. However, the nature of TEARC limits scope for innovation in delivery.
<ul style="list-style-type: none"> Development of output based specification may require larger lead times and can be complex 	<ul style="list-style-type: none"> Proponents have the potential to be motivated by price drivers, resulting in the delivery of a less innovative design.



PPP DELIVERY	TRADITIONAL DELIVERY
<ul style="list-style-type: none"> Operations aspect not a part of TEARC limiting opportunity for innovation. Construction must be performed in accordance with highly specific QR requirements, within a defined corridor. 	<ul style="list-style-type: none"> Operations aspect not a part of TEARC limiting opportunity for innovation. Construction must be performed in accordance with highly specific QR requirements, within a defined corridor.

Table 9.5 Risk Allocation Assessment

PPP DELIVERY	TRADITIONAL DELIVERY
<ul style="list-style-type: none"> High level of risk transfer PPP providers are incentivised to finish TEARC on time (depending upon contract form) relative to traditional delivery as a result of bearing financial obligations to financiers. Premium applied for transfer of risk to the private sector, including for on time delivery and penalties for not achieving this High cost of contract variations limiting flexibility if requirements change or route extension is required Assumed that demand risk is borne by State. 	<ul style="list-style-type: none"> Range of traditional delivery models from CO to D&C provides State with choice over who is best placed to bear relevant risks Simpler model to secure variations given the absence of financing. High level of retained risk to the public sector.

Table 9.6 Whole of Life Costing Assessment

PPP DELIVERY	TRADITIONAL DELIVERY
<ul style="list-style-type: none"> None identified. Operations and maintenance unlikely to be bundled into Project due to small Project size and operating constraints due to QR asset ownership, so limited whole of life opportunities. 	<ul style="list-style-type: none"> None identified. Operations and maintenance unlikely to be bundled into Project due to small Project size and operating constraints due to QR asset ownership, so limited whole of life opportunities.

Table 9.7 Asset Utilisation Assessment

PPP DELIVERY	TRADITIONAL DELIVERY
<ul style="list-style-type: none"> None identified. Potential for lack of freight demand. 	<ul style="list-style-type: none"> None identified. Potential for lack of freight demand.



Table 9.8 Competitive Market Assessment

PPP DELIVERY	TRADITIONAL DELIVERY
<ul style="list-style-type: none"> ▪ PPP market is mature, although size of this Project is less likely to be of interest than others in the market. 	<ul style="list-style-type: none"> ▪ D&C market is mature ▪ Broader range of bidders, with both second-tier market participants potentially able to deliver on model.
<ul style="list-style-type: none"> ▪ Potential for reduced market interest due to capacity of market (e.g. significant projects currently underway in NSW and VIC) ▪ Bidding costs of \$20m-40m may limit interest relative to small contract size (circa \$300m). 	<ul style="list-style-type: none"> ▪ None identified.

9.3 Market Feedback

A market sounding process was undertaken to inform the TEARC procurement strategy through the packaging and delivery model analysis. The key themes arising from the market sounding include packaging, delivery model and value for money considerations.

9.4 Packaging Assessment

Following discussions on the potential benefits and challenges of packaging, it was concluded that a single packaging approach would be utilised for the purposes of the delivery model workshop.

Given the small scale, geographic localisation and limited technical complexities of TEARC and taking market sounding feedback into consideration, it was considered it would be possible to deliver TEARC as a single package to minimise interface risk, maintain competitive tension and drive the best value for money outcomes. Many market sounding participants were of the view that the scale of TEARC, at approximately \$300m in value was well sized for interest by both Tier 1 and Tier 2 contractors, and that a split of works into packages would diminish market interest, given the likely low value of discrete packages. It was also considered that there was limited technical complexity associated with the build that would warrant a split by discipline.

This approach does not preclude the utilisation of sub-contractor involvement or separation of early works packages to deliver the scope of work. Most market sounding participants identified that public utilities and plant and preloading works may be delivered as early works packages.

9.5 Traditional Delivery Model Assessment

The following section summarises outcomes of the assessment of different traditional delivery model options undertaken as part of the Phase 1b: Delivery Model Methodology Workshop and Phase 2: Delivery Model Assessment Workshop.

9.5.1 Evaluation Approach, Criteria & Scoring

The following section outlines the evaluation approach, criteria and scoring mechanism used to assess traditional delivery model options.

- Evaluation Approach



The Delivery Model Assessment Workshop included a two-step approach to evaluate the suitability of different traditional delivery model options. This involved:

- **Options Scoping and Shortlisting:**
High level scan of potential traditional delivery models including investigation of different options for alliances, design, construction and operate and maintenance (Refer Section 9.5.2).
- **Short List Detailed Assessment:**
Detailed evaluation of short-listed options against the endorsed evaluation criteria (Refer Section 9.5.3).
- **Evaluation Criteria for Short Listed Detailed Assessment**

The evaluation criteria were initially developed and endorsed by workshop participants at the Delivery Model Methodology Workshop and later reconfirmed at the Delivery Model Assessment Workshop.

The criteria have been tailored to take into consideration the scope, key risks, stakeholders, timing, financial issues and policy matters specific to this Project. At the Delivery Model Methodology Workshop, a “build outcomes” sub criterion was originally included in the “Quality” criterion, with a weighting of 6%. During the subsequent Delivery Model Assessment Workshop, participants decided to remove this sub criterion, on the basis that build outcomes were prescribed under each contract model, and therefore there was no means to differentiate delivery models. The 6% weighting applied to that sub criterion was transferred to the “Design outcomes” sub criterion, reflecting participant’s views that design outcomes would be a significant point of difference between the delivery models

The evaluation criteria used for the delivery model assessment is outlined in Table 9.9.

Table 9.9 Delivery Model Scoring Mechanism

CRITERIA	SUB-CRITERIA	CONSIDERATIONS	WEIGHTING
Cost (70%)	Capital costs (60%)	<ul style="list-style-type: none"> ▪ Competitive tension ▪ Innovation on cost ▪ Price certainty (at contract award). 	42%
	Transaction and contract management (5%)	<ul style="list-style-type: none"> ▪ Reduced capital, transaction and contract management costs. 	3.5%
	Lifecycle and maintenance costs (5%)	<ul style="list-style-type: none"> ▪ Competitive tension ▪ Reduced operations and maintenance costs ▪ Innovation on cost ▪ Price certainty (at contract award). 	3.5%
	Risk transfer (30%)	<ul style="list-style-type: none"> ▪ Potential for ‘gaps’ in responsibilities ▪ Optimised risk allocation ▪ Interface risk outcomes (delivery model) ▪ Interface risk outcomes (operations). 	21%
Quality (30%)	Design outcomes (60%)	<ul style="list-style-type: none"> ▪ Potential to upgrade/expand ▪ Innovation in design. 	18%
	Timeliness (20%)	<ul style="list-style-type: none"> ▪ Ability to meet required timeframe ▪ Procurement period ▪ Development period ▪ Certainty of timing. 	6%
	Flexibility and stakeholder control (20%)	<ul style="list-style-type: none"> ▪ Expansion / variations over construction period 	6%



CRITERIA	SUB-CRITERIA	CONSIDERATIONS	WEIGHTING
		<ul style="list-style-type: none"> Responding to changing operational requirements / incidents Stakeholder control on design and construction Stakeholder control on maintenance. 	

Overall, workshop participants concluded that due to TEARC’s limited technical complexity, relatively small scale, and low level of interface risks with operating elements of the rail and port networks, and reasonably long project lead time (2018-2022), cost would be the primary driver of the delivery model consideration. Quality related sub-criteria were weighted lower overall, given the highly prescriptive nature of TEARC design and build, which precluded significant design innovation and the need for substantial ongoing stakeholder control, and the generous timeframe for delivery, which limited the relative importance of timeliness in project delivery. As a result, “Cost” related sub criteria including capital costs and appropriate risk transfer were considered to be the primary drivers of differentiation between delivery models. Transaction costs, contract management and lifecycle and maintenance cost sub-criteria were considered of lesser importance, given their likely low-cost implications for TEARC in relative terms to capital cost.

- Scoring Mechanism for Short Listed Detailed Assessment

The PAF, Building Queensland Framework and National PPP Guidelines each provide alternative illustrative scoring mechanisms used to assess the scope for value generation for each assessment criteria.

Table 9.10 illustrates the scoring mechanism agreed during the Delivery Model Methodology workshop for the delivery model analysis for TEARC.

Table 9.10 Delivery Model Scoring Mechanism

RATING CRITERIA	RATING
Delivery model option satisfaction of the criterion is very high	5
Delivery model option satisfaction of the criterion is high	4
Delivery model option satisfaction of the criterion is neutral	3
Delivery model option satisfaction of the criterion is low	2
Delivery model option satisfaction of the criterion is very low	1

9.5.2 Traditional Delivery Model Options (Long List)

Table 9.11 outlines the justification for short-listing the preferred traditional delivery models, where they underwent further assessment on their ability to deliver value for money outcomes for the State.

Table 9.11 Traditional Delivery Model Long List

DELIVERY MODELS	SHORTLISTED	JUSTIFICATION FOR PROGRESSION TO SHORT LIST
Alliance	✘	Workshop participants considered that the lack of project complexity, highly prescribed design and build outcomes and limited interface risks, particularly given the low volumes of freight at the connection point to the existing rail network did not lend themselves to a risk sharing arrangement such as an Alliance model. Market sounding feedback also suggested that an Alliance model was not appropriate for TEARC.
Construct Only (CO)	✓	Workshop participants agreed to shortlist the CO model to undergo further assessment. This was due to the view from the market



		sounding process that this may be a viable candidate for project delivery, given TEARC’s lack of technical complexity, highly prescribed design and build outcomes and limited interface risks.
Design & Construct (D&C)	✓	Workshop participants agreed to short list the D&C model to undergo further assessment. This was due to the view from the market sounding process that this may be a viable candidate for project delivery, given TEARC’s lack of technical complexity, highly prescribed design and build outcomes and limited interface risks.
Design & Construct plus Operate (DC+O)	✘	A DC+O was considered not to provide value for money, as operations were expected to be undertaken by QR given the scale of TEARC relative to the rest of the QR operated network.
Design, Construct and Maintain (DCM)	✘	A DCM was considered not to provide value for money if it were included in the procurement process, as maintenance was expected to be undertaken by QR given the scale of TEARC relative to the rest of the QR maintained network.
Design, Construct, Maintain and Operate (DCMO)	✘	A DCMO was considered not to provide value for money if it were included in the procurement process, as maintenance and operations were expected to be undertaken by QR given the scale of TEARC relative to the rest of the QR operated/maintained network.
Managing Contractor (MC)	✘	Workshop participants considered that the Managing Contractor model was not appropriate for TEARC. Managing Contractor models are best suited to agencies who have limited in-house capability to oversee project delivery. TMR, the agency likely responsible for contract management, has significant in-house capacity to deliver projects and manage contractors. Further, TEARC is considered not technically complex, primarily greenfield construction in nature, and has highly prescribed design and build outcomes with limited interface risks, further simplifying the contract management process. This conclusion was supported by the outcomes of the market sounding process.



9.5.3 Traditional Delivery Model Options (Short List Detailed Assessment)

Two traditional delivery model options were taken forward to the shortlist for detailed evaluation against the pre-agreed evaluation criteria. These included:

Construct Only (CO)

Design and Construct (D&C)

- Construct Only

The CO delivery model, as depicted in Figure 9.2, involves a construction contractor contracted under a lump sum / fixed price arrangement for the delivery of project construction. As part of the CO delivery model, design, performance and quality requirement specifications are developed prior to procurement, with changes in possession regimes and scheduling potentially causing contractual variations.

Figure 9.2 Construct Only Delivery Model

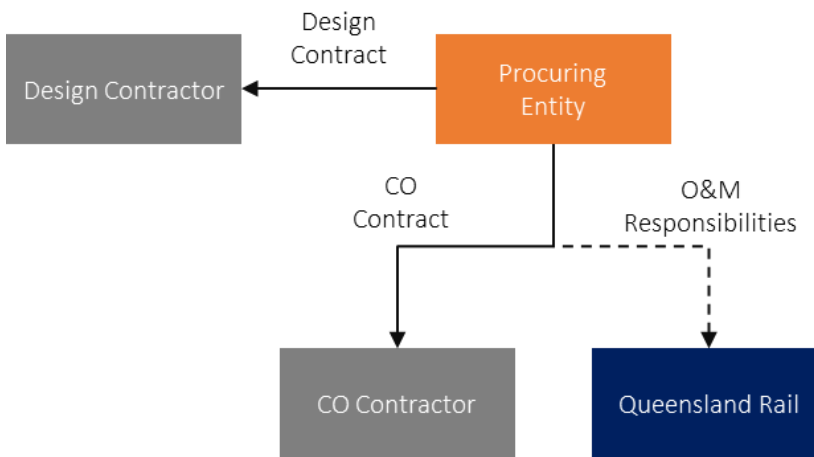


Table 9.12 sets out the advantages and possible challenges in applying the CO delivery model in the context of TEARC.

Table 9.12 Construct Only Delivery Model Advantages and Disadvantages

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"> ▪ Procuring entity retains more control over design outcomes and quality compared to D&C. This would allow QR/State to drive the design and reduce the integration risk for existing operations ▪ Simple for market to understand and tender and doesn't requires any contractor to team with a design expert, which would likely increase tenderer competition ▪ Competitive market exists as both Tier 1 and Tier 2 contractors would tender based on market sounding feedback ▪ Reduced pricing risk for contractors, as risks would be more clearly identified through the design process. 	<ul style="list-style-type: none"> ▪ Procuring entity retains design risk ▪ Having procuring entity as the sole input into the design may drive less optimal value for money outcomes as innovation and new techniques may not be sufficiently considered ▪ Longer lead time for procurement through separate design and construct procurement processes.



▪ Design and Construct

The D&C delivery model involves a D&C contractor been contracted under a lump sum / fixed price arrangement for the preparation of detailed design and project construction. As part of the D&C delivery model, performance and quality requirement specifications are developed prior to procurement, with changes in design / possession regimes and scheduling potentially causing contractual variations.

Figure 9.3 D&C Delivery Model

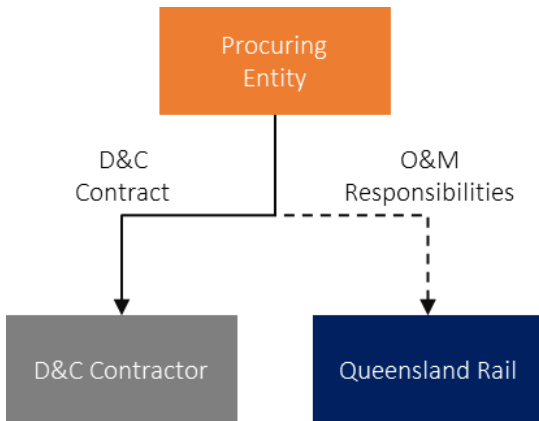


Table 9.13 sets out the advantages and possible challenges in applying the D&C delivery model in the context of TEARC.

Table 9.13 D&C Delivery Model Advantages and Disadvantages

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"> ▪ Contractor has the opportunity to contribute construction experience into the design, resulting in innovation and efficiencies ▪ Single point of accountability for design and construction ▪ Fast track - time saving because construction can commence ahead of full design documentation (provided there is adequate control over design quality) ▪ Contractor normally warrants design, including ‘fitness for purpose’. 	<ul style="list-style-type: none"> ▪ Principal may pay a premium to transfer design risks to the contractor ▪ Doesn’t allow procuring authority to input into the design past following the design brief, unless it seeks a post contract variation ▪ Requires in-house design expertise or for a contractor to subcontract to a designer ▪ Procuring authority doesn’t get the opportunity to separately choose the ‘best’ designer and the ‘best’ contractor.



9.5.4 Traditional Delivery Model Assessment

Under all traditional delivery models, funding is provided by the public sector and the asset is transferred back to the State at the end of the construction period. The following section summarises the assessment of each selected traditional delivery model against the evaluation criteria.

Table 9.14 and Table 9.15 detail the assessment of Construct Only and Design and Construct delivery models.

Table 9.14 Construct Only Delivery Model Evaluation

CRITERIA	SUB-CRITERIA	ASSESSMENT	EVALUATION
Cost	Capital cost	(+) CO model provides fixed price contractual arrangements and good value for money where the scope is defined and set. (+) Higher competition from Tier 2 contractors may drive better pricing. (-) Full consideration may not be given to construction alignment during design, although this is not considered likely due to the highly prescriptive nature of the regulation and specifications governing TEARC, the fixed corridor and the low technical complexity of the build.	5
	Transaction and contract management costs	(+) CO model has a simple contractual structure that is well understood by the market. (-) Procuring entity needs to procure design separately, which may increase the time taken and add complexity and cost to TEARC, although the design is of limited technical complexity and offers little scope for innovation.	4
	Lifecycle and maintenance costs	(-) CO model is unlikely to incentivise consideration of lifecycle and maintenance cost. (-) Procuring entity still retains the whole-of-life asset risk.	3
	Risk transfer	(+) The procuring entity is able to transfer construction, pricing and timing risks to the contractor. (-) Procuring entity retains design risk. (-) Risk of change in scope post CO award lies with procuring entity. (-) Generically, the procuring entity may not be the most suitable party to manage design-construction-operations interface risk, however, this is offset by TMR's experience in projects of this nature, and the relative technical simplicity of TEARC.	3
Quality	Design outcomes	(+) Procuring entity retains control over design outcomes and quality, which may be relevant to later upgrade and expansion projects affiliated with TEARC. (-) CO model restricts ability for the contractor to innovate due to limited nature of the scope, however, there is limited scope for innovation due to the nature of TEARC. (-) Delinking operations and maintenance contracts removes the opportunity to achieve whole-of-life benefits.	4
	Timeliness	(+) Prescriptive design provides certainty for project delivery. (+) Ability to pay to accelerate construction (-) decoupling design and construction potentially limits efficiencies in construction scheduling.	4



	Flexibility and stakeholder control	(+) Procuring entity retains control of performance and quality requirement specifications. (+) Single point of accountability through construct period. (-) Limited flexibility to adapt to changes in Project requirements – e.g. change in scope, staging.	3
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Table 9.15 D&C Delivery Model Evaluation

CRITERIA	SUB-CRITERIA	ASSESSMENT	EVALUATION
Cost	Capital cost	(+) D&C model provides fixed price contractual arrangements and good value for money where the scope is defined and set. (-) May ultimately pay more given bundled design and construction and potential premium and profit margin charged by private sector designers.	4
	Transaction and contract management costs	(+) D&C model has a simple contractual structure, very common and well understood by the market. (-) Shortage of D&C contract administrators may reduce efficiency of contract management under this delivery model. (-) Greater role for contract administrator requiring additional resources, given inclusion of design component.	3
	Lifecycle and maintenance costs	(-) D&C model is unlikely to incentivise consideration of lifecycle and maintenance cost. (-) Procuring entity still retains the whole-of-life asset risk.	3
	Risk transfer	(+) The contractor manages the risk of design and design-construction coordination. (+) The procuring entity is able to transfer pricing and timing risks to the contractor. (-) Risk of change in scope post D&C award lies with procuring entity. (-) Procuring entity may pay a premium to transfer design risk to contractor. (-) Procuring entity may not be the most suitable party to manage construction-operations interface risk, however, this is offset by TMR’s experience in projects of this nature, and the relative technical simplicity of TEARC.	4
Quality	Design outcomes	(+) Contractor normally warrants design including ‘fitness for purpose’ of asset. (-) Procuring entity may not have adequate control over design outcomes and quality, which may be relevant to later upgrade and expansion projects affiliated with TEARC. (-) Delinking operations and maintenance contracts removes the opportunity to achieve whole-of-life benefits. (-) Nature of TEARC precludes significant opportunities to drive innovation through design.	4
	Timeliness	(+) Certainty of time due to warranties and guarantees on performance. (+) Onus on the contractors to effectively manage delays and technical risk in D&C interfaces.	3



		(-) Required scope variations to optimise whole-of-life considerations may increase project design and construction period. (-) Longer tender period is needed to allow tenderers to assess design risk.	
	Flexibility and stakeholder control	(+) Procuring entity retains control of performance and quality requirement specifications. (+) Single point of accountability through design and construct period. (-) Limited flexibility to adapt to changes in Project requirements – e.g. change in scope, staging.	3

9.5.5 Preferred Traditional Delivery Model

The overall value generation scores for the traditional delivery models are summarised in Table 9.16.

Table 9.16 Traditional Delivery Model Assessment Summary

EVALUATION CRITERIA AND WEIGHTING	CO SCORE UNWEIGHTED	CO SCORE WEIGHTED	D&C SCORE UNWEIGHTED	D&C SCORE WEIGHTED
Capital cost (42%)	5	2.10	4	1.68
Transaction and contract management costs (3.5%)	4	0.14	3	0.11
Lifecycle and maintenance costs (3.5%)	3	0.11	3	0.11
Risk transfer (21%)	3	0.63	4	0.84
Design outcomes (18%)	4	0.72	4	0.72
Timeliness (6%)	4	0.24	3	0.18
Flexibility and stakeholder control (6%)	3	0.18	3	0.18
Weighted overall score	N/A	4.12	N/A	3.81

Based on the traditional delivery model assessment undertaken, it may be concluded that there is only marginal difference between the two delivery models assessed. Both models provided neutral or better alignment to all sub criteria. Notwithstanding that CO was computed as the more viable delivery model, it is arguable that TEARC could be delivered under either model and achieve similar value for money for the State.

Primary and secondary differentiators (by weight) were as follows:

- CO scored “very high” under the capital cost sub criterion relative to D&C, which scored “high”. Workshop participants agreed that TEARC scope reflected minimal opportunity for design innovation to drive improved value for money, given the highly defined corridor, prescriptive regulation over design/build specifications and low technical complexity of TEARC. As such, it was considered that D&C would afford no significant advantage over CO in respect of delivering a lower price, whereas construct only would likely drive the highest competitive tension between bidders. This was the primary driver of differentiation between delivery models, given the 42% weighting applied.
- CO scored “neutral” under the risk transfer sub criterion relative to D&C, which scored “high”. Workshop participants agreed that CO created a new interface between design and construction, and left the State to manage design risk, CO was viewed as scoring lower than D&C. Both models also create interface risk with operations and maintenance. This was the secondary driver of differentiation between delivery models, given the 21% weighting applied



Other, less heavily weighted differentiators included:

- CO scored “high” under the transaction and contract management costs sub criterion relative to D&C, which scored “neutral”. Construct only was expected to cost less to procure due to the lack of requirement to develop and run a tender process for the design component, and the shorter procurement lead-time. In addition, it was observed that there was a shortage of skilled D&C contract managers relative to CO contract managers, which may have implications for the efficiency of the contract management process.
- CO scored “high” under the timeliness sub criterion relative to D&C, which scored “neutral”. The workshop participants were of the view that CO, given the prescriptive nature of the procurement, allowed most flexibility to ensure project delivery by a specific date, assuming willingness to pay for accelerated delivery.

Whilst both models scored the same on Design Outcomes, which on its face is unusual given the lack of design component in the CO model, workshop attendees considered that the scope of TEARC provided very little opportunity for innovation in design to differentiate bids. As such, it was viewed that there was little to differentiate the models. CO scored highly as the State retained ability to influence design, which was considered important in the context of associated projects, including upgrades to the PoT and the existing North Coast Line.

9.6 Conclusions and Recommendations

9.6.1 Packaging

As highlighted previously, the TEARC Project Team considered the preferred approach to deliver TEARC would be as a single package, to minimise interface risk, maintain competitive tension and drive the best value for money outcomes.

9.6.2 Delivery Model Assessment Results and Recommendation

The delivery model assessment concluded that CO was the preferred delivery model. Notwithstanding that there is not a significant difference between the CO and D&C delivery models in respect of potential value for money delivered to the State, and either model is likely to be a viable choice for delivering TEARC. In addition, the market sounding process confirmed that the market would be equally content to bid for either a D&C or CO delivery model.

It must be noted that the qualitative delivery model assessment had been conducted at a ‘point in time’ (mid 2017) and concluded a D&C model would suffice for the project. This was carried out to allow the development of the construction program and the cost estimate for the DBC and it was decided to retain the D&C model for the cost estimate purposes. The delivery model workshop was attended by the project cost estimator thus utilising the delivery model assessment to conduct a final check of the program and estimate. The delivery model selection did not impact the design of the Reference Project.

The timeframe for procurement to commence is late 2018 and in the intervening period between delivery of this DBC and procurement, the market conditions may change. It is therefore recommended that additional market engagement be conducted at a later date to confirm the appropriate delivery model for project delivery.



9.6.3 Outcomes of the VfM Assessment

The results of the VfM assessment concluded that a PPP Delivery Model of any form was unlikely to deliver a VfM outcome for the State relative to a traditional model. Key differentiators were the lack of opportunity for a PPP model to drive innovation, which would be required in order to offset the higher financing costs associated with PPP models. It was further expected that market interest in TEARC from the PPP market would be limited, whereas the interest from the traditional market was expected to be significant, as confirmed by market sounding.

The results of this VfM assessment were discussed and agreed with participants at the Delivery Model Methodology and Delivery Model Assessment Workshops. Workshop participants concluded that further analysis of individual PPP delivery models was highly unlikely to result in improved VfM outcomes for the State. A Public Sector Comparator assessment is not required as the delivery of the project via a PPP is not viable.