



## 8 FINANCIAL AND COMMERCIAL ANALYSIS

### CHAPTER SUMMARY AND CONCLUSIONS:

- The total P90 risk-adjusted project costs are \$457.7m in nominal terms and \$369.6m in net present value (NPV) terms.
- Total P90 risk-adjusted project costs (\$457.7m) in nominal terms consist of \$391.7m capital costs, \$48.3m maintenance costs and \$17.7 lifecycle costs. These capital, maintenance and lifecycle components are also P90 risk-adjusted in nominal terms.
- The incremental freight access revenues are marginally negative (i.e. loss of revenues for TEARC). No quantifiable value sharing opportunities have been identified for TEARC. Projected freight demand is not expected to increase significantly as a result of TEARC, and as result of the more direct route to the PoT afforded by TEARC, NTKs will reduce, and hence, incremental revenue will reduce
- Therefore, the net P90 risk-adjusted project costs are \$458.9m in nominal terms and \$370.2m in NPV terms.
- The net P50 risk-adjusted project costs are \$429.6m in nominal terms and \$347.9m in NPV terms.
- Unless there is scope for the PoT and the Townsville City Council to contribute funds in the Project, the Australian Government and Queensland Government is to consider other opportunities to fund the Project. The final funding model for TEARC may contain a mix of contributions from various levels of government. The Australian Government has committed \$150m to TEARC and \$3m of this commitment has been approved to co-fund the development of this Detailed Business Case, with a matching contribution from the Queensland Government
- Initial discussions are taking place with the Australian Government and other levels of government regarding the quantum, timing or nature of contribution from these funding sources as part of the *Townsville City Deal (2016)*. Detailed negotiations will commence subject to approval of the DBC from the Cabinet Budget Review Committee (CBRC).

This chapter outlines the financial implications and budgetary impacts of TEARC. The financial analysis incorporates all costs and revenues associated with the construction and operation of TEARC over the evaluation period and quantify the estimated cash flows and NPV for TEARC. The chapter details:

- Approach to undertake the financial analysis
- Key assumptions and data sources
- Raw capital and ongoing (whole-of-life) costs associated with TEARC
- Revenues associated with TEARC
- Net non-risk-adjusted costs of TEARC
- Value of the risk adjustments and the subsequent net risk-adjusted costs of TEARC
- Potential funding sources for TEARC
- Key findings from the independent financial model review.

Please note that the financial analysis has a different purpose to the economic analysis (Chapter 7 – Economic Analysis); the financial analysis is focused on the financial costs (the net financial impact to the



Queensland Government including cash flow implications) from an internal government funding perspective, whereas the economic analysis is focused on the overall economic benefit to the community.

TEARC is a net cost project to the Queensland Government, and the terminology of Net Present Value (NPV) has been adopted to logically convey the numerical and graphical outputs of the business case i.e. the NPV conveys the sum of the present value of all costs over the evaluation period as positive numbers and revenues and cost saving benefits as negative numbers (that reduce the NPV).

## 8.1 Approach

A detailed financial analysis of TEARC is required by state and national guidelines, including:

- Building Queensland Business Case Development Framework (BCDF)
- Queensland Government Project Assessment Framework (PAF)
- National Public Private Partnership Policy and Guidelines.

The result of the financial analysis determines the likely net financial impact to the Queensland Government of undertaking TEARC and is facilitated by the development of a Public Sector Comparator (PSC) financial model ('the Financial Model'). The Financial Model is used to estimate the total and net risk-adjusted project costs of TEARC and also inform the affordability assessment (Chapter 16).

The financial analysis is informed by the options analysis (Chapter 5), which defined the following options:

- The **base case** includes the rail infrastructure from the Sun Metals Branch Line, via the North Coast Line to the Jetty Branch and associated road infrastructure. The Base Case excludes the Mt Isa Line to Townsville, the North Coast Line south of the Sun Metals Branch Line and north of the Jetty Branch. It also excludes the Port of Townsville to the port boundary. The existing Southern Port Road and other existing road infrastructure provides truck access to the Port. The base case will not be able to efficiently support the Port Expansion Plan in the longer term.
- The reference project (**project case**) is an 8.3km single line narrow gauge rail line to be constructed broadly within a defined corridor starting in the suburb of Cluden and connecting to the southern end of the Port of Townsville via a rail bridge over the Ross River. The project case will provide port access redundancy for rail, increase operational flexibility, and reduce the level of interaction between rail and road traffic, thereby improving urban amenity, safety and traffic flows. It has been designed to enable future staged infrastructure upgrades, including the proposed port expansion. The project case does not include the removal of the existing line described in the Base Case. It further does not include any connections within the Port of Townsville other than connection to the existing port minerals loop

The Financial Model assesses the financial impact of the incremental difference between the base case and the project case as described above. The incremental costs and revenues have been provided by TEARC's cost and economic advisors.



Table 8.1 sets out the key outputs of the financial analysis.

Table 8.1 Financial Analysis Outputs

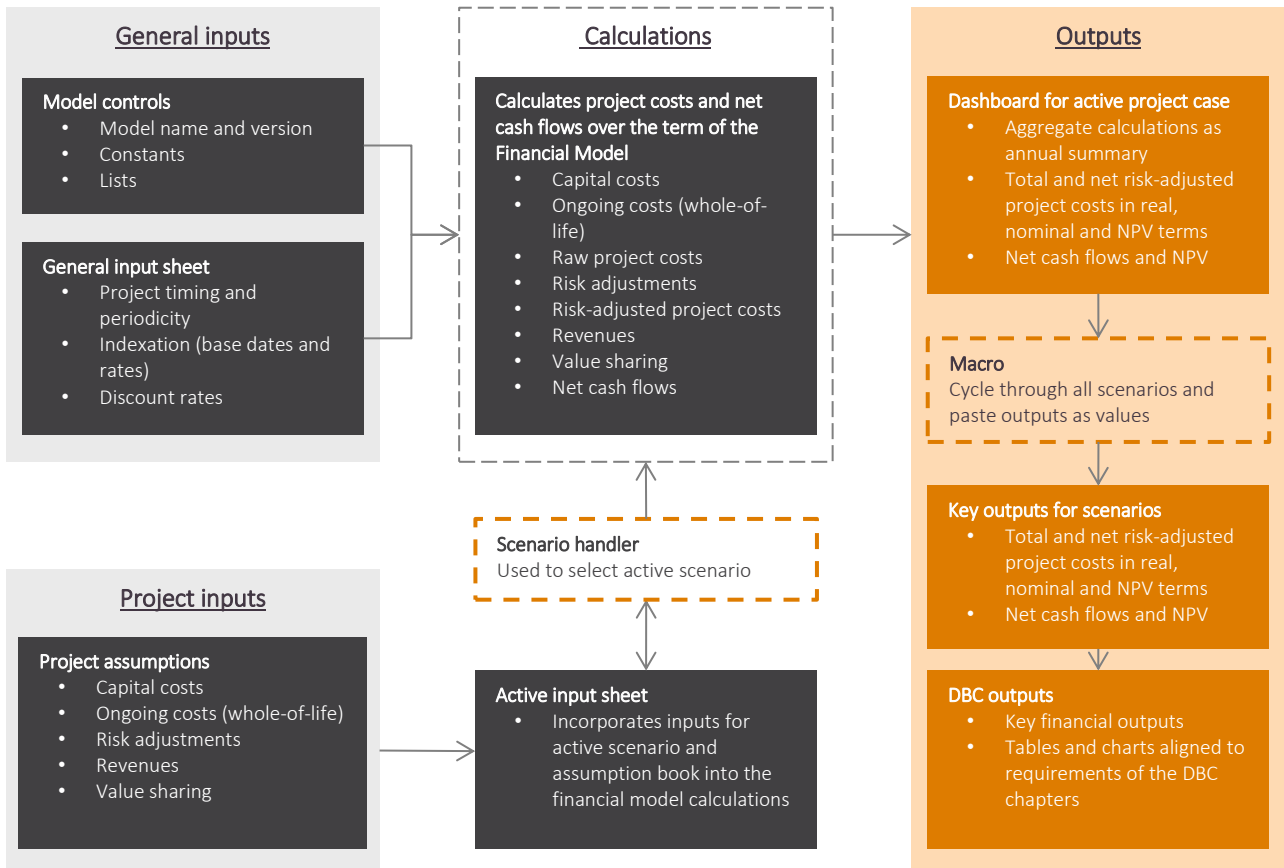
KEY OUTPUT	DESCRIPTION
<b>TOTAL RISK-ADJUSTED PROJECT COSTS</b>	
Raw project costs	The raw project costs include the direct and indirect raw capital and ongoing costs (whole-of-life) of delivering TEARC over the evaluation period.
Risk adjustments for raw project costs	<p>From the risk identification process (Chapter 6 – Risk Management), the project costs include an adjustment for the risks associated with TEARC being delivered through a traditional delivery model. These risks are identified as either:</p> <ul style="list-style-type: none"> <li>Planned risks – risks that relate to the potential for the cost of the construction and operation phases to differ from the base case estimates. These risks are identified by analysing the risks and opportunities in the project’s scheduled activities and are assessed during the determination of raw technical costs by considering the likely ranges in quantity, unit rate or price for the construction and operation phases</li> <li>Unplanned risks – other risks relating to potential changes in the Reference Project’s intended development, procurement, implementation, financing and operations. These changes may be triggered by actions of the Project Team, external stakeholders or the general market environment. These risks are assessed by analysing the likely impact ranges for these potential risks to the project, as well as the probability of the risks and opportunities occurring.</li> </ul>
Total risk-adjusted project costs	<p>The total risk-adjusted project costs include the raw project costs and risk adjustments over the life of the Financial Model.</p> <p><b><i>Total risk-adjusted project costs = Raw project costs + Planned risks + Unplanned risks</i></b></p>
<b>PROJECT REVENUES</b>	
Revenues	The revenues directly generated by TEARC have been included in the financial analysis and include incremental freight access revenues.
Value sharing	In addition to the revenues considered above, potential value sharing opportunities are assessed – no quantifiable value sharing opportunities have been identified for TEARC.
<b>NET RISK-ADJUSTED PROJECT COSTS</b>	
Net risk-adjusted project costs	<p>The net risk-adjusted project costs are derived by subtracting revenues that the Queensland Government would earn as a result of TEARC from the total risk-adjusted project costs.</p> <p><b><i>Net risk-adjusted project costs = Total risk-adjusted project costs – Revenues</i></b></p>

Figure 8.1 sets out the structure of the Financial Model outlining key inputs, calculation steps and outputs.

The Financial Model is populated with inputs reflecting the costs, risk adjustments and revenues associated with TEARC. The outputs from the Financial Model provide TEARC costs and affordability cash flows in real, nominal and NPV terms.



Figure 8.1 Structure of the Financial Model



### 8.1.1 Sources of information

The input data used to calculate TEARC costs and net cash flows have been sourced from various parties in the TEARC Project Team, advisors and key stakeholders.

Table 8.2 provides a summary of the sources of information used in the Financial Model.

Detailed assumptions are set out in Section 8.2.

Table 8.2 Sources of Information

INPUT	TEARC PROJECT TEAM ROLE
Construction period timing	Cost and risk advisor
Operations period timing	Cost and risk advisor
Capital cost escalation	Cost and risk advisor
Ongoing cost escalation	Project Team in consultation with QR
CPI escalation	Financial advisor / Economic advisor
Discount rate	Project manager
Capital costs	Cost and risk advisor
Maintenance costs	Cost and risk advisor / Economic advisor
Lifecycle costs	Cost and risk advisor / Economic advisor



INPUT	TEARC PROJECT TEAM ROLE
Incremental freight access revenue	Economic advisor
Value sharing	Financial advisor

## 8.2 Assumptions

This section documents the key assumptions used in the calculation of the TEARC costs, revenues and discounted cash flows in the Financial Model.

Furthermore, this section describes the road and rail regulatory/policy environment as it pertains to the impact of TEARC on modal shift.

### 8.2.1 Timing assumptions

Table 8.3 summarises the key timing assumptions that have been adopted in the Financial Model.

The Financial Model captures monthly cash flows during the construction period, and quarterly cash flows during the operations period. The construction of TEARC is assumed to be completed by 31 March 2022 and the operations period starts on 1 April 2022, as well as the revenue cash flows. The operation period is assumed to be 30 years, as agreed by the BQ project team pursuant to the BCDF, and as has been employed on previous rail projects in the State. The 30-year operating period also aligns with the TEARC maintenance and lifecycle cost forecast developed by the cost and risk advisor and is accepted by Queensland Treasury as a standard practice for rail projects. It has been assumed that all cash flows occur at the end of any given period (i.e. month or quarter) in the Financial Model.

Table 8.3 Timing Assumptions

ITEM	DESCRIPTION	ASSUMPTION
Model start date	Model and other project costs commencement date	1 January 2017
Model evaluation period	Model length, assessment period and periodic separation	Business case development and procurement period: 1 January 2017 – 31 December 2019 Construction period: 1 January 2020 – 31 March 2022 Operations period: 1 April 2022 – 31 March 2052 (30 years – refer reasoning above)
Capital cost commencement date	Construction and upfront capital cost phase commencement date	1 January 2017
Capital cost forecast base date	Base date for escalating real construction and upfront capital cost forecasts	30 June 2017
Capital cost phase periodicity	Model periodicity during construction and upfront capital cost phase	Monthly
Ongoing cost commencement date	Ongoing operating and lifecycle cost phase commencement date	1 April 2022



ITEM	DESCRIPTION	ASSUMPTION
Ongoing cost forecast base date	Base date for escalating real ongoing operating and lifecycle cost forecasts	30 June 2017
Operations phase periodicity	Model periodicity during operations phase	Quarterly
Revenue commencement date	Revenue forecast commencement date	1 April 2022
Revenue forecast base date	Base date for escalating real revenue forecasts	30 June 2017
Revenue phase periodicity	Model periodicity during revenue period	Quarterly
Discount date	Base date applied to discount cash flows to determine the NPV of TEARC	30 June 2017

### 8.2.2 Financial assumptions

This section details the financial assumptions including escalation assumptions and discount rate that have been applied in the Financial Model.

The Financial Model contains three escalation profiles. These profiles have been agreed between the TEARC Project Team and the cost and risk advisor and recognise that different cash flows are likely to escalate at different rates, depending on the nature of the cash flow.

Table 8.4 shows the three escalation profiles and the application of the escalation profiles to the project cash flow items in the Financial Model.

Table 8.4 Application of Escalation to Cash flows

ESCALATION PROFILE	ESCALATION ITEM	ESCALATION PERIODICITY
Capital cost escalation	Construction and project delivery costs and construction period risk adjustments	Annual
Ongoing cost escalation	Maintenance and lifecycle costs and operations period risk adjustments	Annual
CPI escalation	Revenues	Annual

Escalation in the Financial Model has been applied annually to all cash flows over the evaluation period.

Table 8.5 details the escalation assumptions applied in the Financial Model.

Table 8.5 Escalation Assumptions

DESCRIPTION	CAPITAL COST ESCALATION	ONGOING COST ESCALATION	CPI ESCALATION
FY2017	-	-	-
FY2018	4.65%	2.75%	2.5%
FY2019	2.69%	2.75%	2.5%
FY2020	3.14%	2.75%	2.5%
FY2021	2.79%	2.75%	2.5%



DESCRIPTION	CAPITAL COST ESCALATION	ONGOING COST ESCALATION	CPI ESCALATION
FY2022	3.03%	2.75%	2.5%
Thereafter rate	N/A	2.75%	2.5%

CPI escalation is based on the mid-point of the inflation rate of two to three percent targeted by the Reserve Bank of Australia and is consistent with the assumed escalation rate by economic advisor for the TEARC DBC.

The capital cost escalation profile is provided by the cost and risk advisor, in accordance with Department of Transport and Main Roads (TMR) guidance, which adopts the Department of Infrastructure and Regional Development (DIRD) Project Cost Breakdown (PCB) for Federally Funded project policy.

The ongoing cost escalation is aligned with the long-term capital escalation rate as advised by the cost and risk advisor and maintenance escalation rates used in precedent projects (e.g. Beerburrum to Nambour Rail Upgrade) and is consistent with the approach taken by QR to estimating these costs. The escalation of these ongoing costs is higher than CPI escalation but lower than capital cost escalation. Ongoing costs occur during the operations phase.

The discount rate (3.76% in annual, nominal terms) applied in the Financial Model has been provided by BQ (sourced from the Queensland Treasury Corporation) and accords with Queensland Treasury practice for assessing all infrastructure projects in Queensland. The rate represents a proxy for the Queensland Government assumed cost of financing, calculated using a five-year average of the 10-year zero coupon bond yields as a proxy for the risk free rate. Discounting in the Financial Model has been applied annually to all cash flows over the evaluation period.

### 8.2.3 Accounting Treatments

In addition to the cash flow timing, escalation and discounting treatments discussed in the previous sections (Sections 8.2.1 and 8.2.2), this section details other accounting considerations that have been agreed with the TEARC Project Team and applied in the Financial Model, which include working capital, residual value and tax treatments.

Working capital is assumed to be zero in the Financial Model. During the construction period, there is no revenue received (i.e. no accounts receivable). During the operations period, it is assumed that all the payments (i.e. accounts payable and receivable) are captured in the same quarterly cash flow period (i.e. working capital days net to zero).

It is assumed that there is no residual value for TEARC at the end of the evaluation period. This is because residual values are typically comprised of discounted free cash flows beyond the period of evaluation (as opposed to the depreciated value of the remaining asset as is applied in economic modelling). In the case of TEARC there is a negative value of \$3.7m in nominal terms in the final year of operation and no additional revenue or cost saving projected beyond the evaluation period. A residual value of zero is a common occurrence in net cost projects such as TEARC, and this approach is consistent with BQ practice.

GST has been excluded from the Financial Model in accordance with the Building Queensland BCDF.

### 8.2.4 Cost Assumptions

This section details the assumptions on capital costs, ongoing costs and risk adjustments that have been applied in the Financial Model.

Capital costs and expenditure profile during the construction period have been provided by the TEARC cost and risk advisor in real terms as at 30 June 2017. The capital costs include:



- Construction costs – the direct and indirect costs related to design and construction of TEARC
- Project delivery costs – the costs incurred by the Queensland Government for the delivery of TEARC including scoping, development, delivery and property costs.

These costs have been further categorised by a work breakdown structure (WBS) to provide a basis of structure for the construction schedule (Chapter 6). Capital costs have been escalated using the capital cost escalation profile on an annual basis in the Financial Model, which is aligned with the cost and risk advisor's approach.

Ongoing costs (whole-of-life) and timing during the operations period have been provided by TEARC's cost and risk advisor in conjunction with TEARC's economic advisor, and are in real terms as at 30 June 2017 for a 30-year period from 1 April 2022. The incremental ongoing costs include:

- Maintenance costs – the recurring, non-construction incremental costs borne by the Queensland Government to maintain the rail and road components of TEARC
- Lifecycle costs – the estimated incremental costs for major asset maintenance and refurbishment of TEARC infrastructure and including both rail and road components.

The maintenance costs (excluding variable below rail maintenance costs) and lifecycles costs have been provided by the cost and risk advisor and are the incremental costs between a with TEARC case and a without TEARC case.

The variable below rail maintenance costs have been provided by the economic advisor. Three sets of variable rail maintenance costs have been developed based on different demand forecasts (i.e. low, medium and high demand scenarios). Due to the reduced net tonne kilometres (NTK) of travel following TEARC's construction relative to the present number of NTKs, the variable below rail maintenance costs for all demand scenarios are actually shown as savings at the incremental level (between the with and without cases for TEARC).

The variable costs under the medium demand scenario have been adopted for the financial analysis as it represents the 'expected' position. The low and high demand scenarios have been separately assessed for the sensitivity analysis conducted in the TEARC affordability analysis (Chapter 16).

Note that the above rail operating costs associated with TEARC have been excluded from the financial analysis as these costs will be attributable to operators such as Aurizon and Pacific National. Above rail costs do not include train control and signalling costs (which are marginal), which were included in the below rail expenditure estimates provided by the cost advisor.

The Building Queensland BCDF requires the financial analysis to include an estimate of the cost of risks that may materialise over the life of TEARC. In order to estimate the cost of the risk for TEARC, the TEARC Team, together with the cost and risk advisor, prepared a risk register in accordance with the Building Queensland BCDF and undertook a detailed risk analysis with key stakeholders and advisors (Chapter 6).

For the purpose of this DBC, risk estimates at P50 and P90 have been quantified. These measures are defined as follows:

- P50 represents the cost of risks with a 50% level of confidence in the outcome meaning there is a 50% likelihood that the cost of risks will not be exceeded
- P90 represents the cost of risks with a 90% level of confidence in the outcome meaning there is a 90% likelihood that the cost of risks will not be exceeded.





P90 represents a conservative position, one that has only a 10% chance of being exceeded. This is also in accordance with the BCDF, the PAF and the IA National Guidelines. Thus, P90 risk adjustments have been adopted in the preparation of the risk-adjusted project costs and net cash flows. P50 risk adjustments have been reported in Section 8.4. All risk adjustments have been provided in real terms as at 30 June 2017.

### 8.2.5 Revenue and Funding Source Assumptions

This section details the revenue assumptions and other potential funding sources that have been applied in the Financial Model.

Incremental freight access revenues represent the additional freight access charges that will be received by the Queensland Government as a result of TEARC.

The incremental freight access revenues have been calculated by TEARC's economic advisor as the difference between access charge revenue with and without TEARC. The freight access revenues have been developed based on the current access pricing regime and the freight demand forecast administered by Queensland Rail. The tariff has been equated to the current tariff applying to trips between Mt Isa and the PoT. The revenues have been calculated using the price per NTK of travel (ntk – cents/ntk) multiplied by the forecast difference in NTKs between with and without TEARC. The access regime is commercial-in-confidence to Queensland Rail. This part of the Queensland Rail network is not regulated.

Three sets of incremental freight access revenue values have been developed based on different demand forecasts (i.e. low, medium and high revenue scenarios). The low, medium and high demand scenarios have assumed different population and gross domestic product (GDP) growth rates. For the purposes of this financial and commercial analysis, alternative revenue scenarios have not been modelled, as the difference between the net present value of TEARC under each scenario is negligible.

Incremental revenues under the 'with' TEARC case are negative. This is because there is no significant uplift in freight demand projected, no new trains expected, and NTKs for the purpose of user charging are reduced, meaning less revenues are recovered.

The medium demand scenario has been adopted in the preparation of the financial analysis and affordability cash flows as it represents the 'expected' position. The low and high demand scenarios have been separately assessed for the sensitivity of the TEARC Project's affordability (Chapter 17).

The TEARC Project Team has assessed potential value sharing opportunities, with no quantifiable value sharing opportunity being identified for TEARC. The reasons for this are as follows:

- It was agreed that as a freight rail only project, TEARC did not afford any significant benefits to beneficiaries such as local businesses or residents from increased amenity, foot traffic or uplift in land values.
- Land in the immediate vicinity of the TEARC corridor was predominantly State owned, special purpose zoned land within a rural, low density region, with limited scope for uplift in value
- Whilst the project involves some upgrades to the local road network, including the at-grade separation of level crossings, the roads affected have limited patronage and again, the low-density nature of the region was unlikely to defray the administrative costs of collecting a levy or applying any other form of value sharing mechanism.
- The southern portion of the TEARC corridor bisects the Townsville State Development Area, however, there is not expected to be significant benefit to the proposed industrial and commercial land uses as additional freight is more likely to use the existing road network.



- As there is no immediate freight demand resulting from the delivery of the Project, there are no private users from who a funding contribution may be sought, whether directly or by way of a levy.
- Furthermore, the removal of the existing Jetty Branch is not considered within the scope of the Reference Project, due to the existing Port operating constraints requiring it to be maintained. Were it to be removed, there may be some uplift in land values from the improved urban amenity in the vicinity of that track.
- It was considered that there was limited opportunity for land sales to fund a portion of the project, given the lack of commercial driver (for example, passenger stations) arising from delivery of the project.

## 8.3 Financial Net Present Value (Financial NPV)

### 8.3.1 Approach

The non-risk-adjusted financial NPV is an output of the Financial Model that projects the cash flow profile (i.e. costs) generated to plan, deliver and operate TEARC over the evaluation period. The Financial Model includes all capital costs, ongoing costs and residual value (which is nil). By calculating the net cash flow balances in each year over the evaluation period and discounting these at an appropriate rate, a non-risk-adjusted financial NPV has been produced for TEARC.

The non-risk-adjusted financial NPV represents the net financial impact to the Queensland Government in present dollar terms (as at 30 June 2017) from an internal financing perspective. The financial NPV calculated in this section is a non-risk-adjusted financial NPV, as it does not take into account the risk profiles of the cash flows. The risk-adjusted financial NPV is calculated in Section 8.4.

### 8.3.2 Raw Capital Costs

This section specifies the raw capital costs for TEARC, which includes the construction costs and project delivery costs to construct and deliver TEARC.

Table 8.6 sets out the raw capital costs of TEARC in real, nominal and NPV terms.

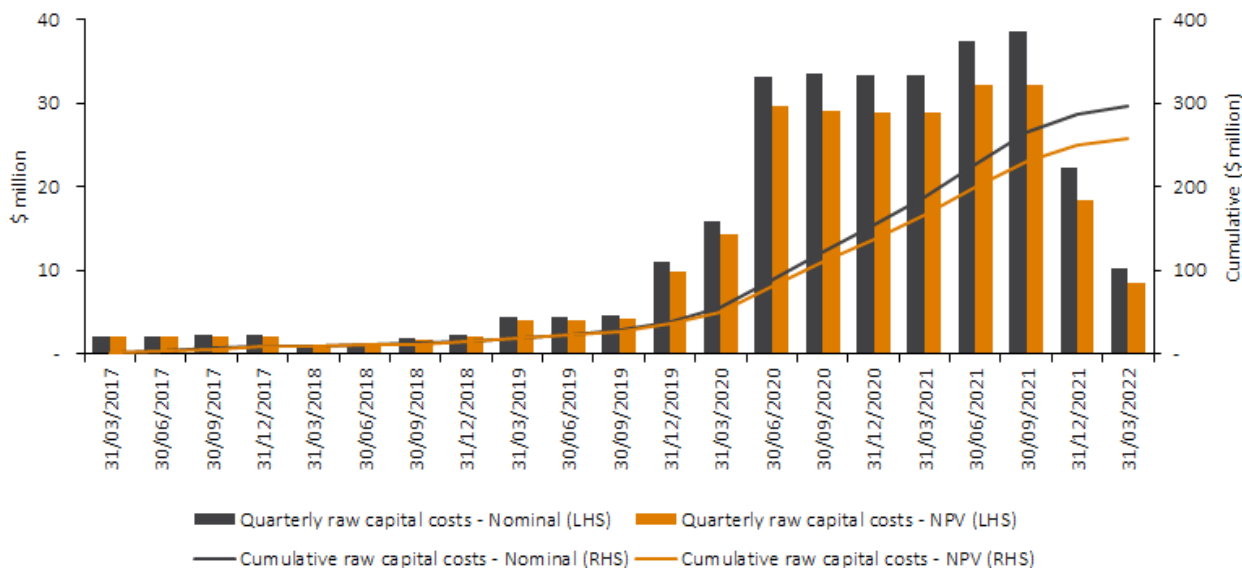
Table 8.6 Raw Capital Costs

RAW CAPITAL COSTS	REAL (\$M)	NOMINAL (\$M)	NPV (\$M)
Construction costs	214.7	245.2	211.1
Project delivery costs	47.7	51.9	47.4
<b>Total raw capital costs</b>	<b>262.4</b>	<b>297.2</b>	<b>258.5</b>



Figure 8.2 shows the quarterly and cumulative raw capital costs of TEARC during the construction period in nominal and NPV terms.

Figure 8.2 Raw Capital Cost Cashflow Profile (Nominal and NPV)



The cash flow profile indicates that the quarterly raw capital costs are low during most of the DBC development and procurement period (January 2017 to December 2019) and begin to rise at the end of the procurement period. This increase continues into the construction period that starts in January 2020 with a significant rise in the second quarter of 2020. The peak period of the construction spend is the third quarter of 2021, with this phase being completed at the end of 2022.

### 8.3.3 Raw Ongoing Cost (Whole-of-Life)

This section specifies the raw incremental ongoing (whole-of-life) costs for TEARC over a 30-year period post construction.

Table 8.7 sets out the raw ongoing costs of TEARC in real, nominal and NPV terms.

Table 8.7 Raw Ongoing Costs

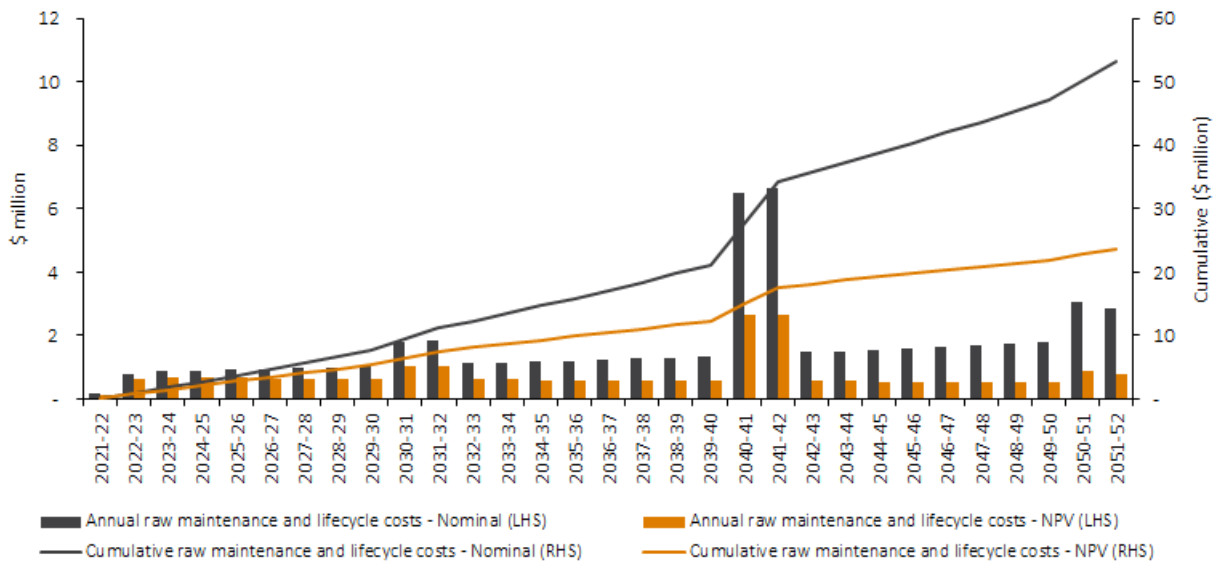
RAW ONGOING COSTS	REAL (\$M)	NOMINAL (\$M)	NPV (\$M)
Raw maintenance costs	21.8	38.9	17.9
Raw lifecycle cost	7.3	14.3	5.7
<b>Total raw ongoing costs</b>	<b>29.0</b>	<b>53.1</b>	<b>23.6</b>

The raw ongoing costs of TEARC are \$53.1m in nominal terms and \$23.6m in NPV terms.

Figure 8.3 shows annual and cumulative raw maintenance and lifecycle cost profile demonstrating the cost of TEARC during the operations period in nominal and NPV terms.



Figure 8.3 Raw Maintenance & Lifecycle Cost Cashflow Profile Illustrating the Cost of TEARC (Nominal & NPV)



The maintenance and lifecycle cash flows are divided by three distinct peaks of lifecycle expenditure at FY2031-32, 2041-42 and 2051-52 respectively. Whilst maintenance costs remain flat in real terms over the 30-year period of operations, lifecycle costs are scheduled at ten year intervals from the commencement of the operations.

### 8.3.4 Revenues

This section specifies the incremental revenues generated by the TEARC over the 30-year operations period, which includes the freight access revenues.

Table 8.8 sets out the raw revenues of TEARC in real, nominal and NPV terms.

Table 8.8 Revenues

REVENUES	REAL (\$M)	NOMINAL (\$M)	NPV (\$M)
Loss of freight access revenues	0.8	1.3	0.6
<b>Total loss of revenues</b>	<b>0.8</b>	<b>1.3</b>	<b>0.6</b>

The total incremental loss of freight access revenue from TEARC is \$1.3m in nominal terms and \$0.6m in NPV terms. As noted earlier in this chapter, projected freight demand is not expected to increase significantly as a result of TEARC, and as result of the more direct route to the PoT afforded by TEARC, NTKs will reduce, and hence, incremental revenue will reduce.

### 8.3.5 Analysis Summary

The net raw project costs are the raw project costs net any revenues from TEARC.

Table 8.9 sets out the net raw project costs and non-risk-adjusted financial NPV for TEARC.



Table 8.9 Non-Risk-Adjusted Financial NPV

NET RAW PROJECT COSTS	REAL (\$M)	NOMINAL (\$M)	NPV (\$M)
Raw capital costs (non-risk-adjusted)	262.4	297.2	258.5
Raw ongoing costs (non-risk-adjusted)	29.0	53.1	23.6
<b>Raw project costs (non-risk-adjusted)</b>	<b>291.4</b>	<b>350.3</b>	<b>282.1</b>
Revenues	0.8	1.3	0.6
<b>Net raw project costs (non-risk-adjusted)</b>	<b>292.2</b>	<b>351.6</b>	<b>282.7</b>

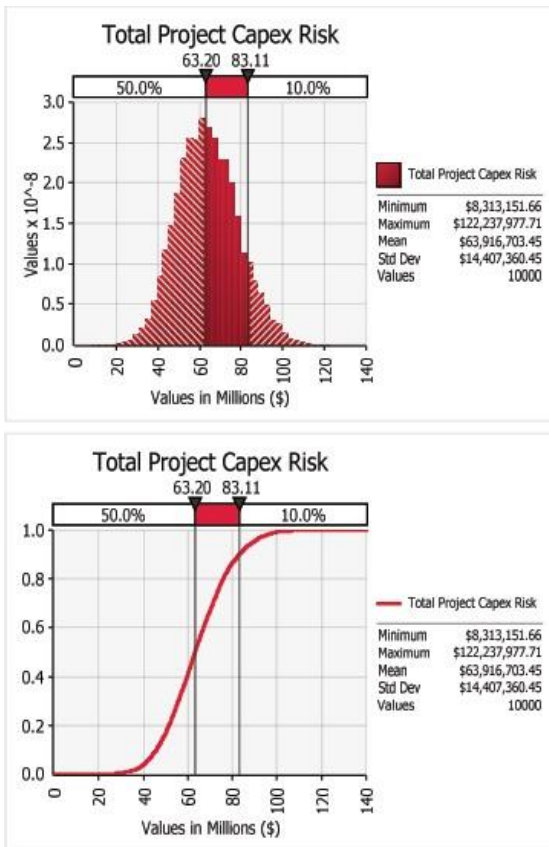
The net raw project costs are \$351.6m in nominal terms and \$282.7m in non-risk-adjusted NPV terms.

## 8.4 Risk-adjusted Financial NPV

### 8.4.1 Capital costs risk adjustments

Figure 8.4 sets out the distribution of capital cost risk adjustments at P50 and P90 confidence levels.

Figure 8.4 Capital costs risk adjustment profile

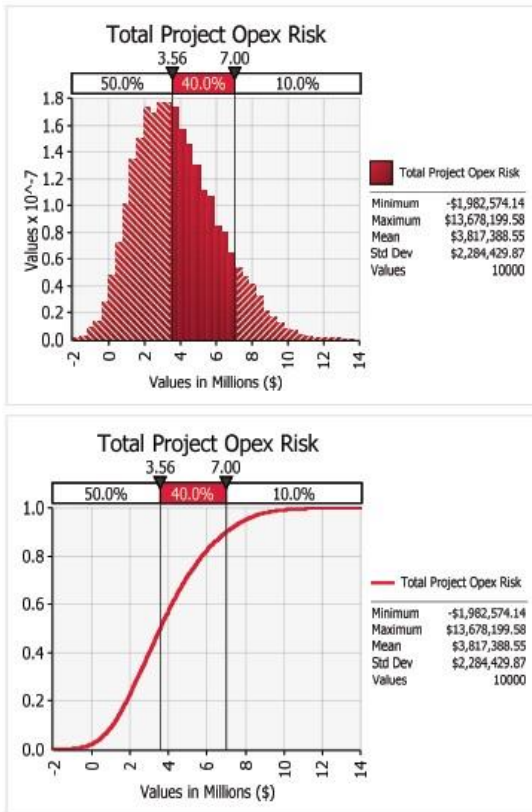




### 8.4.2 Ongoing costs risk adjustments

Figure 8.5 sets out the distribution of ongoing cost risk adjustments at P50 and P90 confidence levels.

Figure 8.5 Ongoing costs risk adjustment profile



### 8.4.3 Risk-adjusted project costs

The risk-adjusted financial NPV takes into account the risk profiles of the cash flows and includes risk adjustments on project costs for TEARC.

Table 8.10 sets out the net project costs and risk-adjusted financial NPV for TEARC at a P90 confidence level.

Table 8.10 P90 risk-adjusted project costs

NET RISK ADJUSTED PROJECT COSTS	REAL (\$M)	NOMINAL (\$M)	NPV (\$M)
Risk-adjusted capital costs (P90)	345.5	391.7	340.2
Risk-adjusted maintenance costs (P90)	27.0	48.3	22.2
Risk-adjusted lifecycle costs (P90)	9.0	17.7	7.1
<b>Total risk-adjusted project costs (P90)</b>	<b>381.5</b>	<b>457.7</b>	<b>369.6</b>
Revenues	0.8	1.3	0.6
<b>Net risk-adjusted project costs (P90)</b>	<b>382.3</b>	<b>458.9</b>	<b>370.2</b>

The total P90 risk-adjusted project costs are \$457.7m in nominal terms and \$369.6m in NPV terms. The raw project costs account for 76.3% of the total risk-adjusted project costs in NPV terms with the remaining 23.7% comprising risk adjustments at a P90 level. The net risk-adjusted project costs are \$458.9m in nominal terms and \$370.2m in NPV terms.



Figure 8.6 shows the percentage breakdown of the total risk-adjusted project costs in NPV terms.

Figure 8.6 Total Risk-Adjusted Project Cost Allocation (NPV, % of Total)

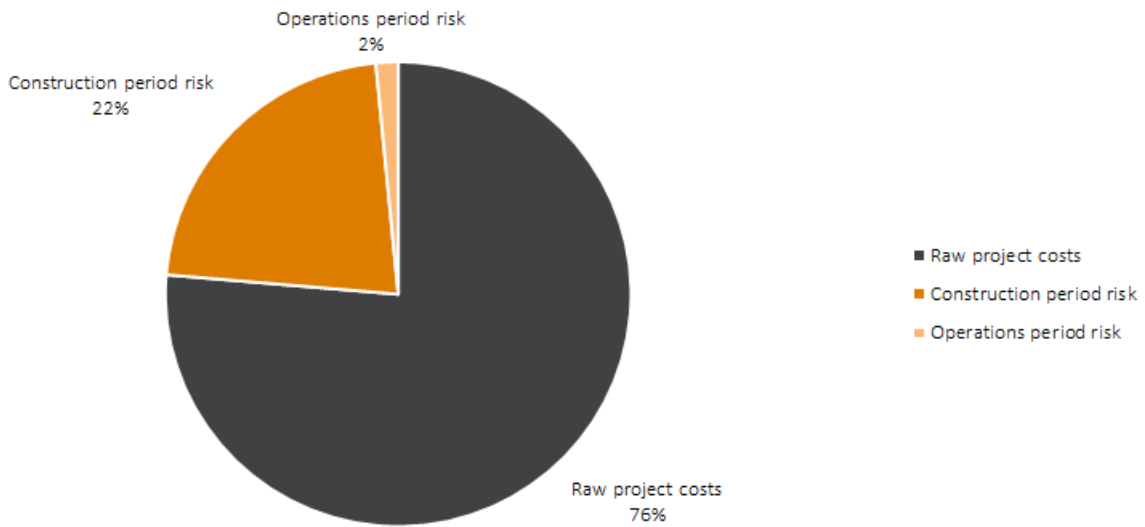


Table 8.11 sets out the net project costs and risk-adjusted financial NPV for TEARC at a P50 confidence level.

Table 8.11 P50 Risk-Adjusted Project Costs

NET RISK ADJUSTED PROJECT COSTS	REAL (\$M)	NOMINAL (\$M)	NPV (\$M)
Risk-adjusted capital costs (P50)	325.6	368.7	320.7
Risk-adjusted maintenance costs (P50)	24.4	43.6	20.1
Risk-adjusted lifecycle costs (P50)	8.1	16.0	6.4
<b>Total risk-adjusted project costs (P50)</b>	<b>358.2</b>	<b>428.4</b>	<b>347.2</b>
Revenues	0.8	1.3	0.6
<b>Net risk-adjusted project costs (P50)</b>	<b>358.9</b>	<b>429.6</b>	<b>347.9</b>

The total P50 risk-adjusted project costs are \$428.4m in nominal terms and \$347.2m in NPV terms. The raw project costs account for 81.2% of the total risk-adjusted project costs in NPV terms with the remaining 18.8% comprising risk adjustments at a P50 level. The net risk-adjusted project costs are \$429.6m in nominal terms and \$347.9m in NPV terms.



Table 8.12 sets out the net risk-adjusted project costs at a P90 confidence level.

Table 8.12 P90 Risk-Adjusted Project Costs with Risk Adjustment Split by Planned and Unplanned

NET RISK ADJUSTED PROJECT COSTS	REAL (\$M)	NOMINAL (\$M)	NPV (\$M)
Risk-adjusted capital costs (P90)	345.5	391.7	340.2
Risk-adjusted ongoing costs (P90)	36.0	65.9	29.3
Total risk-adjusted project costs (P90)	381.5	457.7	369.6
Revenues	0.8	1.3	0.6
Net risk-adjusted project costs (P90)	382.3	458.9	370.2

Table 8.13 sets out the net risk-adjusted project costs at a P50 confidence level.

Table 8.13 P50 Risk-Adjusted Project Costs with Risk Adjustment Split by Planned and Unplanned

NET RISK ADJUSTED PROJECT COSTS	REAL (\$M)	NOMINAL (\$M)	NPV (\$M)
Risk-adjusted capital costs (P50)	325.6	368.7	320.7
Risk-adjusted ongoing costs (P50)	32.6	59.6	26.5
Total risk-adjusted project costs (P50)	358.2	428.4	347.2
Revenues	0.8	1.3	0.6
Net risk-adjusted project costs (P50)	358.9	429.6	347.9

## 8.5 Public Sector Comparator

The purpose of this section is to present the results of the PSC for the Project if a public private partnership (PPP) has been identified as the preferred delivery model. The PSC estimates the risk-adjusted, whole-of-life cost of TEARC to the Queensland Government using a traditional delivery method. The PSC represents the most likely and efficient form of public sector delivery of the Project. The PSC provides a benchmark against which decision-makers can compare private sector bids for projects when delivered under a PPP.

### 8.5.1 Approach

Table 8.14 below sets out the approach to calculating the PSC for TEARC.

Table 8.14 Financial Analysis Outputs

KEY OUTPUT	DESCRIPTION
<b>RISK-ADJUSTED PSC COSTS</b>	
Raw PSC costs	The raw PSC costs include the direct and indirect raw capital and ongoing costs (whole-of-life) of delivering TEARC over the evaluation period, net of any quantifiable third-party revenue attributable to TEARC (for which there is none).
Competitive neutrality adjustments	These comprise adjustments for net competitive advantages that accrue to the Queensland Government by its public sector ownership. Adjustments for such factors are required to allow a like-to-like comparison between the PSC and PPP bids. There is no competitive neutrality adjustment for TEARC.
Risk-adjusted PSC costs	Under Building Queensland's Business Case Development Framework (BCDF), the risk-adjusted PSC costs are calculated by discounting the raw PSC costs, competitive neutrality adjustments and transferred risks over the life of the Project to arrive at the NPV of TEARC.





KEY OUTPUT	DESCRIPTION
	<i>Risk-adjusted PSC costs = discounted (raw PSC + competitive neutrality + transferred risks)</i>

### 8.5.2 Applicability

The PSC calculation is limited to those components that would be in the scope of services for the private sector to include in its PPP tender response. As the preferred delivery model for the Project is as a single package through a traditional delivery model, there is no need to establish a PSC for the Project from the overall Project costs when establishing value for money against a PPP delivery model. Given that TEARC is to be procured under a traditional delivery model, the total project costs would be equivalent to the raw PSC described above. A risk adjusted PSC, as would be applied in the case of a project delivered under a PPP is not applicable to TEARC.

### 8.6 Independent Financial Model Peer Review

To support a successful and robust project outcome, an independent peer review of the Financial Model has been undertaken to evaluate the soundness and appropriateness of the mechanical calculations of the Financial Model.

The independent peer review confirmed that there are no outstanding issues that would impact on the financial results.

### 8.7 Conclusion

The financial analysis summarises the risk-adjusted capital and ongoing costs and revenues associated with delivery of TEARC. The total P90 risk-adjusted project costs are \$457.7m in nominal terms and \$369.6m in NPV terms. The net P90 risk-adjusted project costs are \$458.9m in nominal terms and \$370.2m in NPV terms.

Incremental revenues under the 'with' TEARC case are negative. This is because there is no significant uplift in freight demand projected, and NTKs for the purpose of user charging are reduced, meaning less revenues are recovered.

There is no other funding source or quantifiable value sharing opportunity identified for TEARC.