Queensland Audit Office

Traveltrain renewal: Sunlander 14

Report 8 : 2014–15

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ISSN 1834-1128

Queensland Audit Office

Your ref:
Our ref: 11144

December 2014

The Honourable F Simpson MP
Speaker of the Legislative Assembly
Parliament House
BRISBANE QLD 4000

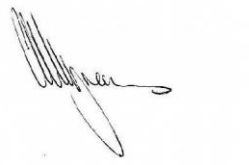
Dear Madam Speaker

Report to Parliament

This report is prepared under Part 3 Division 3 of the *Auditor-General Act 2009*, and is titled *Traveltrain renewal: Sunlander 14* (Report 8: 2014–15).

In accordance with s.67 of the Act, would you please arrange for the report to be tabled in the Legislative Assembly.

Yours sincerely



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Summary

The Sunlander 14 project was initiated to replace the existing Sunlander diesel-hauled locomotive train with a new tilt train and to upgrade the two existing Cairns tilt trains.

The scope of the Sunlander 14 project, from which it derived its name, was for delivery of three, 14-car 'consists', or trains, through:

- acquiring 25 cars:
  - two new power cars and 12 new carriages to create a third new Cairns tilt train (CTT)
  - one new spare power car
  - 10 new carriages for the two existing CTT
- upgrading the 14 carriages, but not the power cars, for the two existing CTT.

In August 2011 the Shareholding Ministers (SHM) —the Treasurer and Minister for Trade, and the Minister for Transport—approved an investment of $195 million for these acquisitions and upgrades, of which $189 million related to a fixed-price supply contract. The Queensland Rail (QR) Board had entered into this contract ten months earlier, after obtaining approval to proceed in July 2010.

By February 2012, the QR Board had approved a total project capital budget of $221.3 million, with the additional costs approved to obtain a fourth power car, to upgrade seating and infotainment systems, and for an automatic train protection system.

On 14 June 2013, the QR Board wrote to the two SHM to advise them of the outcomes of a review into the Sunlander 14 project. QR conducted the review in consultation with the Department of Transport and Main Roads (DTMR).

In that letter, QR requested that the two SHM endorse a revised project scope and a revised capital investment of $204 million. This amount was $9 million more than the $195 million that had been originally approved by the then SHM in August 2011, but $17 million less than the Board capital budget of $221.3 million.

QR's revised project scope proposed for SHM endorsement was to deliver a fleet of three, 9-car consists. This request to de-scope, which the SHM approved, had the effect of removing 15 new cars, five from each train: three 'luxury' sleeper cars, one 'first class' lounge car and one restaurant car. It meant that only ten new cars were required from the original $189 million contract: three new power cars and seven new carriages.

QR proposed that each of the three 9-car trains would now comprise:

- two 'power cars' to drive the train and also supply power to carriages
- two 'railbed' sleeper cars with airline-style lie flat seating
- three premium economy sitter cars
- one luggage/staff car
- one lounge/galley/club car.

The QR Board advised the two SHM that the de-scoping would achieve *'approximately $50 million in direct capital savings*' and *'negate the need to construct a dedicated Traveltrain maintenance facility (to maintain the longer 14-car trains) which has estimates in the order of $70 million'*.

What the June 2013 letter to the responsible Ministers did not advise on were $13.3 million of other known associated costs.

On 24 February 2013 the Premier and the Minister for Transport and Main Roads had already represented the decision to reduce the scope of the project as a saving of 'almost $50 million' in a media release.

In April 2013 QR had determined that costs it had incurred toward building the 15 new carriages did not need to be written off. They revised this position in September 2013, and a write off of $54 million of project costs was disclosed in QR's financial report for 2012–13.

Conclusions

The Sunlander 14 project is a case study in obfuscation and ill-informed decision making.

While the capital outlay of $195 million to acquire and upgrade the cars for the Sunlander 14 project was reasonable, the case presented to invest in Sunlander 14 did not demonstrate value for money. As with the existing service, the project was also to deliver more capacity than warranted, and it omitted significant costs which understated the total cost of the solution.

The three 14-car train solution exceeded requirements based on patronage, which was declining. Market research did not support QR's expectation that a luxury travel experience could stimulate greater demand and from higher paying customers: in this respect it represented more an aspirational desire than a grounded reality.

While the case to de-scope the project was presented as a cost saving, it too also did not demonstrate that value for money was optimised. It is a false economy to 'save' $50 million when this means writing off over $50 million already spent or committed.

The parties involved ignored or did not want to advise government on the full costs of the project, preferring instead to communicate costs in what they perceived to be more palatable portions. On the evidence available to us, we could not establish whether information was withheld intentionally: the distinction is important, as it is the difference between maladministration and possible malfeasance.

This speaks to a serious failure to communicate effectively, particularly in the advice from the public service to the government, which is the common thread that characterises the Sunlander 14 project from its inception through to the decision to de-scope. During this time public servants did not fulfil their obligations to provide full and frank advice to the executive government of the state.

It is a positive sign that the Board acted quickly and appropriately to fully investigate the project once it became aware of the need to write off a significant part of its capital investment. The Board's investigation into the Sunlander 14 project procurement processes concluded in November 2013 and identified a range of issues that we have confirmed and expanded upon during this audit. Since the Board investigation, governance, project management, communication and reporting reforms have been implemented and the Board has made commitments to further reform strategic asset management and project management frameworks.

These latter reforms are important as our investigation pointed to systemic weaknesses with the QR strategic asset management and project management frameworks, which have put at risk the timely and cost effective renewal of the rollingstock servicing long-distance train passenger services in regional and rural Queensland. QR had not matched its strategic intentions with its actions; and it has yet to secure certainty about its management of the entire Traveltrain network. This exposes the remaining long-distance passenger train travel network to the same risks the Sunlander 14 project encountered.

Key findings

Original investment decision

The financial analysis of the Sunlander 14 project included key assumptions on growth in demand, fares and the proportion of full fare paying guests. Neither market research nor actual experience supported these assumptions.

Patronage data show the Sunlander and the Cairns tilt train services had historically operated with surplus capacity in both directions. Demand for long-distance train services was declining. There was no market testing undertaken that supported expectations of a two per cent growth per annum in passenger patronage. Applying actual and expected patronage data, we estimate the Sunlander 14 project would not operate at full capacity until 2027.

DTMR and the QR Board should have challenged the optimism bias evident in the assumptions supporting the original project about future patronage and revenues, but did not. Challenging the data would have revealed the lack of rigour behind the assumptions at the feasibility and asset acquisition planning phases of the project.

DTMR engaged consultants to advise it on options to replace the Sunlander rollingstock. The design DTMR approved contradicted the consultant's recommendations. Most notably, the consultants recommended replacing the Sunlander service by adding carriages to the existing Cairns tilt train and working the trains much harder. The recommended option did not include a third train, a fourth power car, or the refurbishment of existing Cairns tilt train carriages.

DTMR later engaged another consultant to assess whether the indicative contract price proposed for the Sunlander represented value for money, and that the rollingstock could be delivered within the required timeframe. This consultant advised DTMR in July 2010 that key QR assumptions were not adequately supported; there were numerous risks with the proposed approach; the project time frame was ambitious; and one quarter of train procurement projects exceeded budgets and time frame expectations.

This consultant raised significant concerns about the effects of unresolved safety management system issues on the value for money assessment. Neither DTMR nor QR decided to refresh the business case when the effects of these issues became clear.

Both QR and DTMR also understated the operational and safety risks associated with using the current maintenance facility at Mayne for the longer 14-car consists.

De-scoping decision

Despite QR and DTMR identifying other necessary costs during the project planning phase, activity was well into the construction phase (March 2012) before the QR Board formally acknowledged that the full capital costs would exceed the Board approved budget. This was when QR applied greater rigour to establishing the service need and the likely full outturn costs.

The project budget was then capped by QR at $221.3 million, based on advice from Queensland Treasury and Trade to constrain the total project cost. Accordingly the QR Board approached their de-scoping decision by trying to minimise cost, and they did not consider whether reducing the scope was the optimal commercial decision in the long term.

Of three de-scoped options QR evaluated, the preferred option was the only option that came within the approved capital budget of $221.3 million—it was not necessarily the most cost effective option from a value for money perspective. A cost saving implies less money was spent to achieve a prior commitment. In this case, costs had not been correctly budgeted nor approved and the 'cost saving' was in fact an avoidance of additional future spending.

The decision can be defended as pragmatic; in effect, a shorter train is better suited to the existing QR facilities and to historical patronage trends. But in practical terms, the de-scoping decision has meant that, under its fixed price construction contract, QR has acquired rollingstock for three, 9-car train sets for just $22.5 million (11.9 per cent) less than the original fixed price contract of $189.1 million, which was for the delivery of rollingstock for three 14-car train sets.

The fixed price construction contract will pay to build ten new cars—15 fewer or 40 per cent of that contracted—for 88 per cent of the original price. The average cost per car has increased from $4.5 million to $6.5 million, and the average cost per carriage is now $10.1 million, an increase of 91.7 per cent from the original fixed cost of $5.27 million.

Without the external cost cap QR could have extracted greater value for money from its fixed price contract, and also positioned itself better to achieve significant economies of scale and operating efficiencies for the remainder of its travel train fleet as they become economically obsolete and require replacement.

Governance issues

The shortcomings of the Sunlander 14 project are in part attributable to broader governance issues that existed at QR during the project's development and delivery phases.

Timing was a contributing factor. Several key decisions relating to the Sunlander 14 project were made either shortly before or in the 12 months after the separation of QR National from QR, which lost a significant amount of corporate knowledge, key staff, and a number of Board members. Corporate documents, such as Board minutes and submissions were now held by QR National.

The lack of effective communication at QR impeded the Board's ability to discharge its duties effectively. QR did not provide key information to the Board from DTMR's consultants' reports and from three internal Investment Advisory Team reports, each of which raised significant concerns about the project. Had the Board been fully informed—or taken action to inform itself—of these issues, it would have been better placed to discharge its oversight duties.

The failure to inform decision makers of the full cost of the train sets or the infrastructure changes, during asset planning and acquisition, exacerbated the situation. QR repeated this experience in advice to the government about the de-scoping decision. In particular:

- The SHM and the government were not informed about the full cost when approving the investment in the Sunlander 14 project.
- Project submissions presented to government did not outline the full, accurate costs to refurbish the maintenance facility or to build a new one to accommodate a 14-car consist. QR's assessments of the extent of work required and the associated cost varied from $2 million in 2006 to $155 million by 2011. By mid-2010, the generally agreed estimate of the cost for a new maintenance facility was in the range of $50 million to $70 million.
- QR and DTMR did not agree on the need for a new maintenance facility; DTMR did not fully inform the SHM and the government about this impasse.
- QR and DTMR did not bring known funding risks to government's attention, but assumed risks would be addressed and mitigated as part the annual transport service contract funding agreement between DTMR and QR.
- QR and DTMR did not attribute additional unplanned costs to the Sunlander 14 project, nor communicate this to stakeholders. Costs include consulting fees paid to five entities (total value $391 400) and termination costs (total value $420 600) to terminate three temporary employees involved in managing the Sunlander 14 project.

QR's remedial action

In 2013, the QR Board reviewed the Sunlander 14 project procurement processes and identified systematic project and governance failures.

The Board developed an action plan in response, which addresses five recommendations made in the review. These actions are to review procurement policies; implement procurement compliance certifications; review project team skills and experience; subject significant projects to a 'stage gate' evaluation; and define the QR / DTMR relationship better in significant procurement projects.

The Board's action plan is supplemented by reforms implemented in project governance, management, reporting, communication and further commitments to implement strategic fleet management planning and strengthen interactions with DTMR on major project roles and responsibilities.

We noted that the action plan does not address the need for succession planning or a comprehensive induction program for Board members.

Traveltrain renewal program

In considering its de-scoping options, QR lost sight of the strategic intent for the Sunlander and of the overall direction of their Traveltrain renewal program. A new maintenance facility would make more sense if the Sunlander, Spirit of the Outback and Inlander services had been converted to tilt train (as had been recommended to DTMR in 2009 by consultants).

There is no comprehensive, strategic asset plan for the Traveltrain fleet.

Recommendations

It is recommended that Queensland Rail:

1. **implements, for all proposed major capital investments, a total net present cost of ownership which includes all initial and subsequent capital, operating, maintenance and disposal costs based on the most likely mode of operation of the asset; and which identifies and costs all infrastructure interdependencies and ancillary costs**
2. **implements an integrated strategic fleet asset management plan for the Traveltrain program**
3. **implements independent assurance over the newly implemented project management framework and on individual projects.**

Reference to comments

In accordance with section 64 of the *Auditor-General Act 2009*, a copy of this report was provided to QR and DTMR with a request for comments.

Their views have been considered in reaching our audit conclusions and are represented to the extent relevant and warranted in preparing this report.

The comments received are included in Appendix A of this report.

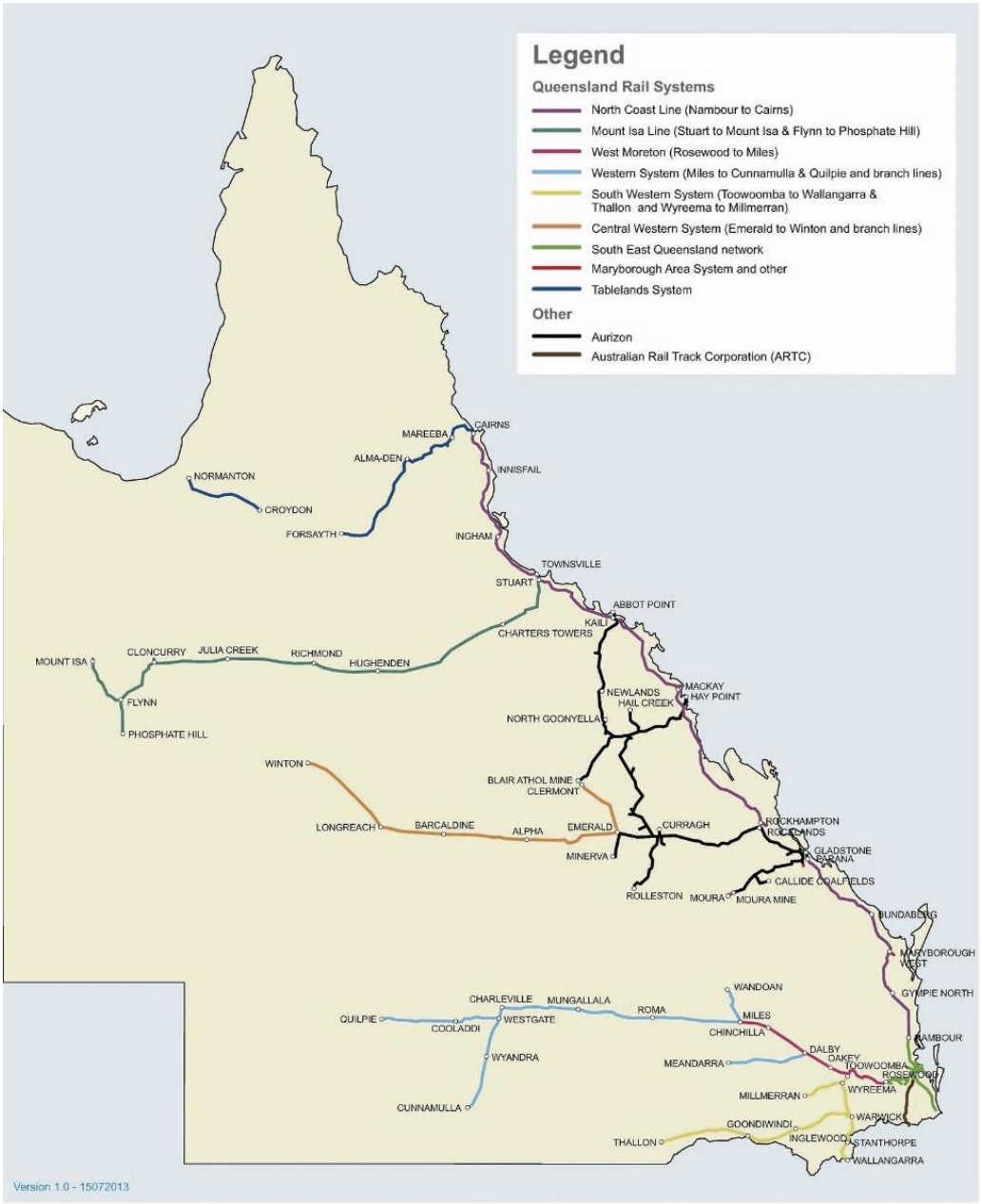
1 Context

1.1 Queensland Rail

Queensland Rail (QR) is an integrated rail passenger transport and rail infrastructure business servicing the passenger, tourism, resources and freight customer markets in south-east Queensland, as well as over its regional freight rail network.

As network manager of over 7 000km of freight and passenger railway track, QR provides statewide rail access for passenger trains, agricultural products, intermodal and general freight and bulk minerals. Figure 1A provides an overview of the QR rail network.

Figure 1A
QR rail network overview



Source: QR (http://www.queenslandrail.com.au)

1.1.1 Legal status

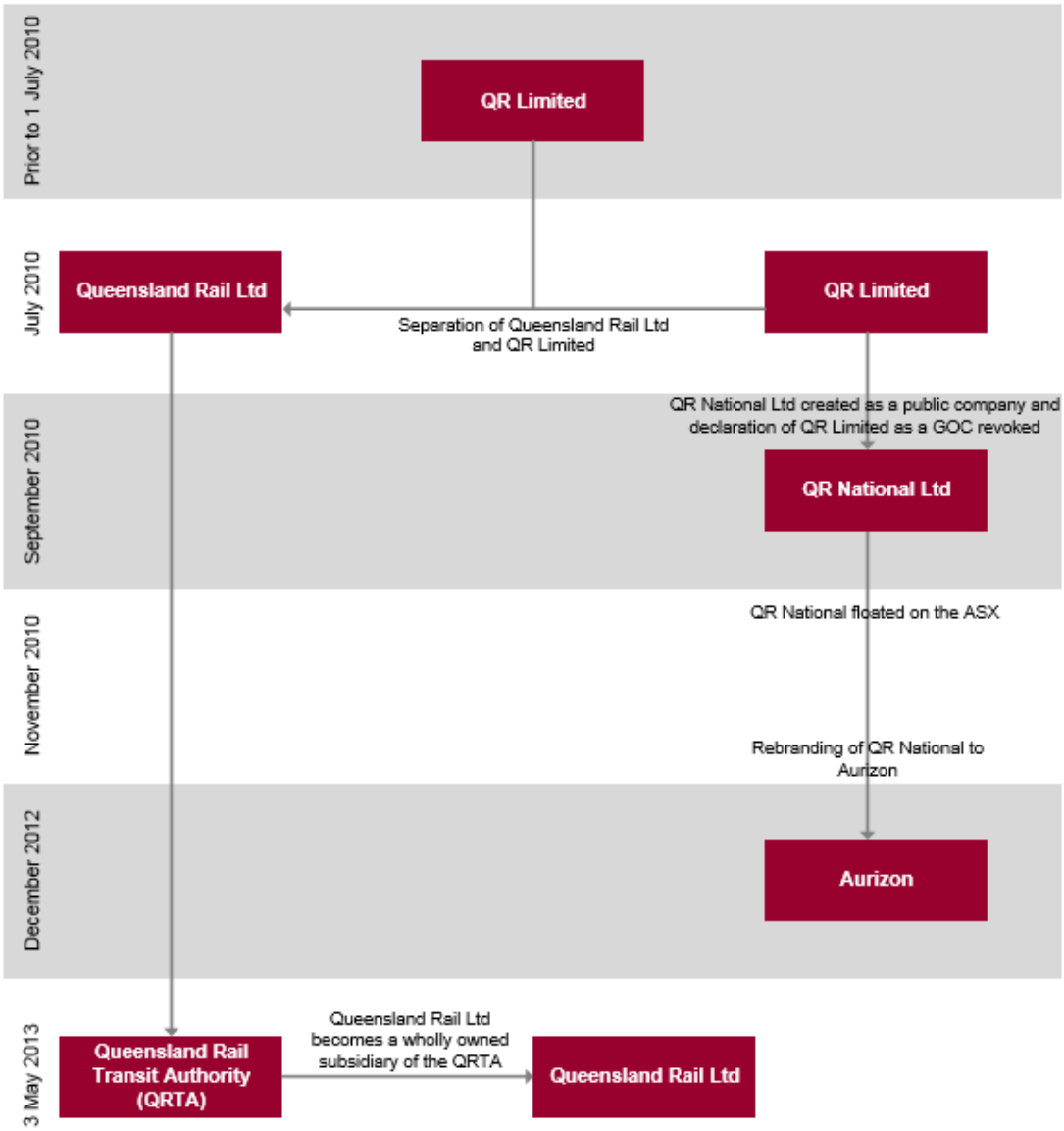
On 30 June 2010, the intrastate rail freight business, QR National (subsequently Aurizon) separated from Queensland Rail.

The remainder of the government owned corporation, Queensland Rail Limited, operated the residue of business that remained in government ownership from 1 July 2010 to 3 May 2013.

On 3 May 2013, Queensland Rail Limited ceased as a government owned corporation and became a wholly-owned subsidiary of the Queensland Rail Transit Authority (now known as Queensland Rail or QR), a statutory authority established under the *Queensland Rail Transit Authority Act 2013*.

Figure 1B summarises the key changes in QR's legal status and business undertakings over this period.

Figure 1B
Changes to QR structure and business



Source: Queensland Audit Office

1.1.2 Funding

The Department of Transport and Main Roads (DTMR) subsidises and regulates long-distance rail passenger transport services to regional and remote Queensland.

QR provides long-distance rail passenger transport services for DTMR under a transport service contract (TSC), which is a procurement contract for the transport outcomes government purchases. A TSC is a one-year contract with an option to renew. QR must ensure the investments it makes in rail infrastructure will suit the services the TSC requires.

QR delivers most passenger services under a rail transport service contract (Rail TSC). The Rail TSC focuses QR on efficient and effective delivery, improved performance and reduced overall cost of transport services.

The Rail TSC also specifies a capital plan, setting out QR's capital program to deliver the services it is contracted to provide. Under the Rail TSC, DTMR makes annual service payments to QR and oversights the capital plan to assure the efficiency of QR investments. DTMR is responsible for making funding submissions to the state government for the ongoing service payments and for the capital requirements for rollingstock replacement and upgrade.

The *Investment Guidelines for Government Owned Corporations* (the guidelines), first issued in April 2003 and last updated in April 2013, set out the key principles for government owned corporations (GOCs) to adopt when undertaking investment activities.

Principle 2 of the guidelines requires approval by shareholding Ministers (SHM) for all non-financial investments or major contracts exceeding a defined threshold. Thresholds are defined by the total value of a project and its future capital cost obligations (for example, an asset acquisition that requires substantial refurbishment).

Current SHM-approved financial delegations enable the QR Board to approve capital and operating expenditure up to $50 million. This limit does not apply to projects which TSCs cover or which the Cabinet Budget Review Committee has confirmed and approved under the South East Queensland Infrastructure Plan and Program (SEQIPP).

Principle 3 of the guidelines states that *'GOC boards are accountable for their investment decisions. As such, investment proposals requiring shareholding Ministers' approval must be approved by a GOC board before being submitted to shareholding Ministers for their consideration*'.

1.2 The Traveltrain network

QR provides commuter passenger services on its City network (servicing south-east Queensland) and long-distance passenger services on its Traveltrain network (servicing the regions).

At the end of October 2014, the Traveltrain fleet comprised seven long-range passenger services and three tourist trains, as Figure 1C details.

Figure 1C
Traveltrain network October 2014

Service	Operating summary
	Long-range passenger
Sunlander	One 19-car train set operating twice weekly for most of the year in both directions between Brisbane and Cairns.
Spirit of Queensland	The first refurbished Cairns tilt train (subsequently rebranded as Spirit of Queensland service) was introduced on 28 October 2013, operating twice weekly between Brisbane and Cairns, replacing one existing Cairns tilt train service. The second refurbished Cairns tilt train / Spirit of Queensland was introduced from 13 October 2014, operating four services per week between Brisbane and Cairns with a fifth service commencing from 15 December 2014. The third new Spirit of Queensland will be introduced on 15 December 2014, after which the original Sunlander will be retired from service.
Rockhampton Tilt Train	Travels between Brisbane and Rockhampton six days a week.
Bundaberg Tilt Train	Travels between Brisbane and Bundaberg seven days a week.
Spirit of the Outback	Travels between Brisbane and Longreach twice a week.
Westlander	Travels between Brisbane and Charleville twice a week.
Inlander	Travels between Townsville and Mount Isa twice a week.
	Tourist trains
Gulflander	Travels between Normanton and Croydon each Wednesday.
Savannahlander	Travels between Cairns and Forsayth each Wednesday with a duration of 35 hours, including overnight stop. The Savannahlander is operated by a private company on behalf of DTMR.
Kuranda Scenic Railway	Travels between Cairns and Kuranda seven days a week.

Source: Queensland Audit Office

1.2.1 The Traveltrain renewal program

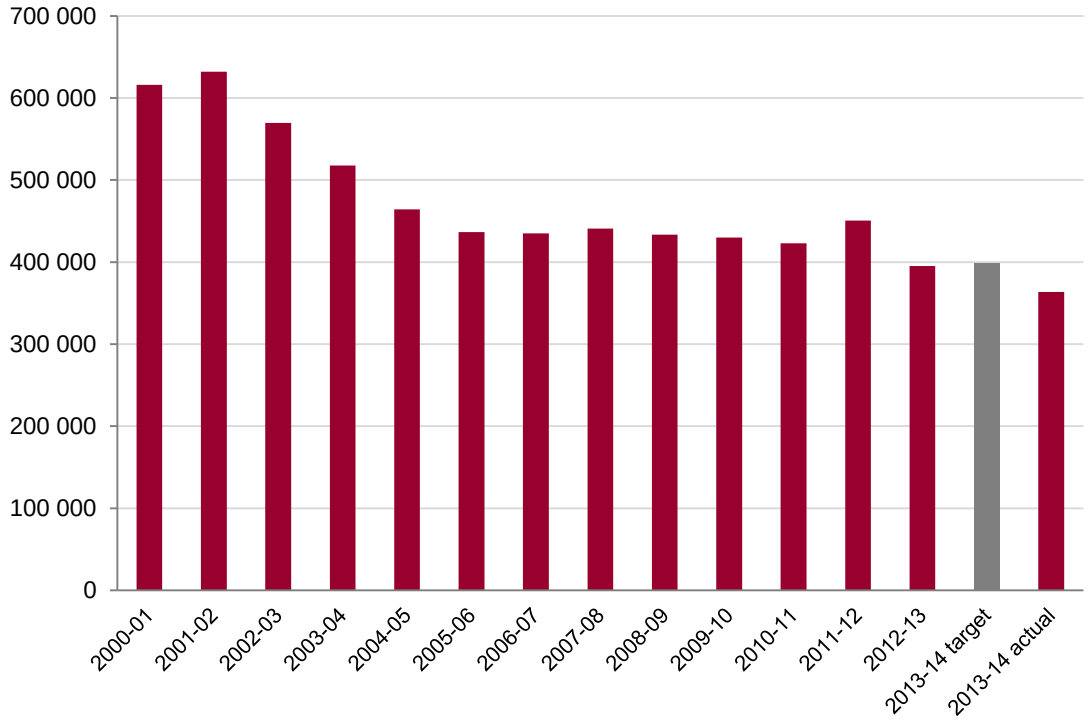
QR developed the Traveltrain renewal program (TRP) in response to ageing rollingstock, some of which was 60 years old.

In 2007 and again in 2010, QR projected that, from its total rollingstock of 110 locomotive hauled carriages used in the Traveltrain fleet, its 80 'M'-series carriages would have to be removed from service by December 2013. The balance of 30 'L' series carriages could operate for a further 15 years, if they were refurbished.

Rollingstock also needed to be replaced progressively to comply with the *Disability Standards for Accessible Public Transport 2002*, under s.31 of the *Disability Discrimination Act 1992* (Cth).

As well as an ageing, noncompliant fleet, QR was facing declining Traveltrain patronage, shrinking by two per cent per annum to 2010. In 2009, QR attributed this decline to changing customer expectations; deteriorating rollingstock reliability and appearance; and increasing competition from the airline sector. Figure 1D illustrates the decline in Traveltrain patronage since 2000–01.

Figure 1D
Traveltrain annual patronage—numbers



Source: Queensland Audit Office

In 2009, DTMR (then called Queensland Transport) commissioned a consultancy to produce a report, *'Traveltrain Rollingstock Review'*, which assessed rollingstock options for the Sunlander, Inlander, Westlander and Spirit of the Outback, for three different configurations:

- 'like for like'–same quantity and variety of cars
- 'hybrid'–simplified service with less variety
- 'low cost'–sitting only service similar to the existing tilt trains.

From 36 options, the consultants analysed 16 options further, including calculating for each:

- operating and maintenance costs, based on the costs in the Rail TSC model
- asset lifecycle costs in net present value terms over 25 years
- the effect on the 2012–13 Rail TSC payment by DTMR to QR.

The consultants recommended a 'hybrid' fleet configuration to replace rollingstock—which cost less than a 'like for like' configuration, but more than the 'low cost' configuration—because it *'improved services at a reasonable cost*'.

The consultants concluded leasing would be more expensive than buying.

They were concerned about the reliability of overseas manufactured locomotives that would cost less than buying locally. They did not raise similar concerns about carriages and recommended imported carriages as the preferred option.

The consultants regarded integration of Sunlander sleeping compartments into the Cairns tilt train service as a very attractive option, as it had the lowest lifecycle costs in net present value terms.

They also noted that it made sense to use tilt trains where possible for the Spirit of the Outback and Inlander services and proposed integrating tilt trains into these services. This would update and rationalise the fleet so maintenance facilities could be customised to better accommodate such fixed-consist trains.

The Westlander service was the only one where the consultants considered tilt trains could not be used, because they could not traverse the Toowoomba range.

QR did not pursue this opportunity to streamline the entire Traveltrain fleet, being uncertain whether the Westlander and Inlander services would continue and their frequency and capacity if so.

In August 2012, a presentation by QR's Travel Network Renewal Program Office to DTMR noted that the renewal program had developed into a suite of 16 projects established to *'ensure QR can continue to provide world-class long distance rail travel for our customers'.*

That presentation noted that the major project elements of the program at that time were:

- Sunlander 14 project—announced in October 2010, total approved capital budget of $195 million, with the major component being a fixed-price contract for $189.4 million to construct a new 14-car tilt train and to upgrade and extend the two existing 9-car Cairns tilt trains to 14 cars
- Cairns tilt train fourth power car—approved budget of $8.56 million
- Cairns tilt train seating and infotainment—install flat bed and premium economy seats and infotainment systems, into the existing Cairns tilt train fleet and into the new Sunlander 14 rollingstock fleet with an approved budget of $5.73 million
- Cairns tilt train overhaul—overhaul of soft furnishings and major components of current Cairns tilt train consists with an approved budget of $12 million
- Spirit of the Outback—approved in August 2011, refurbishment of 'L' series carriages estimated to cost $24.35 million, with a target delivery date of December 2014.

One of the 16 projects in the TRP was to *'review and propose maintenance facilities upgrades or new facilities*', requiring a separate business case. The presentation to DTMR noted the TRP was based on assumptions including:

- funding would be provided for maintenance facilities that suited the new train consist
- modifications to existing facilities would be ready before new services launched or, failing this, funding would be made available for alternative arrangements until permanent facilities were ready.

The 2009 consultant's report had noted the Traveltrain maintenance facility at QR's Mayne depot in Bowen Hills was *'just long enough to house a complete 9-car tilt train in its present formation, but was not long enough for a complete rake of carriages for services such as the Sunlander*'. It had been upgraded in 1999 specifically to accommodate the existing Cairns tilt train.

This limitation of the Mayne maintenance facility meant that any train configuration longer than nine cars would require decoupling and shunting. The consultants noted a depot upgrade would offer cost and safety benefits.

QR's 2011 cost estimates for maintenance alternatives ranged from $10 million to $155 million.

The Traveltrain renewal program identified another project to make expected *minor upgrades* to facilities for fuelling, watering and decanting once the new Cairns tilt train long-distance service schedules and train performance were known. The cost estimates in 2011 for these upgrades were up to $20 million.

1.3 The Sunlander 14 project

The Sunlander 14 project established a fixed-price contract for three new and refurbished trains (rebranded as *'Spirit of Queensland*'). The contract was to upgrade two existing diesel powered Cairns tilt trains (CTT1 and CTT2, commissioned in 2003) and to build an entirely new third diesel tilt train (CTT3).

The project was named Sunlander 14 because it was intended to build one new 14-car consist (CTT3) and to extend both CTT1 and CTT2 to 14-car consists.

Trains like the Cairns tilt trains are referred to as 'push-pull' as they have diesel locomotives at each end which also supply the 'hotel' power to the train carriages. They operate as a 'fixed consist' that is semi-permanently coupled together. The number of carriages is not extended or reduced: while they can be separated, it takes significant time and resources to decouple them.

The two existing Cairns tilt train 9-car consists to be refurbished comprised:

- two power cars
- a baggage car
- a lounge car
- five 'sitter' carriages.

Each of the three new and refurbished 14-car consists was to be configured in this way, but with five new 'luxury' carriages added—three sleeper cars, a 'first class' lounge car and a restaurant car. The five sitter carriages would include two 'railbed' carriages, similar to airline lie flat seating.

The government first approved the project in November 2010 and SHM approved it in August 2011. QR was to self fund the expected capital cost of $195 million.

QR had already entered into a fixed-price contract for $189 million in October 2010 to deliver the new and upgraded rollingstock for the trains. QR had been negotiating with the contractor since March 2010 about this and had obtained approval from the government in July 2010 to proceed.

The contractor was required to:

- construct:
  - three new power cars—two for the new train and one spare
  - 22 new tilt train carriages—12 for the new train, and five each for two existing trains
- upgrade 14 existing carriages—seven each for two existing trains.

The contract comprised six separable portions:

- the extension and refurbishment of the existing CTT1
- The extension and refurbishment of the existing CTT2
- the short consist for the new CTT3 to replicate the existing two (CTT1, CTT2)
- the extension for the new CTT3
- spare parts
- the third spare power car.

Approximately $74.3 million of the $189 million contract price related to the new Cairns tilt train (CTT3).

The contract was extended in November 2010 to build an additional power car, bringing the total to four new power cars. This was so new power cars could be used as the leading car on all three services to increase safety. It also minimised the risk of disruption to services in the event that an incident occurred when a power car was being maintained.

1.3.1 De-scoping decision

The QR Board first wrote to the shareholding Minister on 1 March 2012, requesting additional investment approval of $22.6 million to complete the original Sunlander 14 project. This followed cost analysis and QR deliberations between December 2011 and February 2012.

The Director-General of DTMR responded on behalf of the SHM with a letter to the QR CEO on 8 March 2012 advising that, due to the caretaker conventions of government, it would be inappropriate for government to consider the request for additional investment approval.

The QR Board resubmitted the request for additional investment approval to the new SHM on 21 May 2012, after the state election. They followed this with a letter on 9 July 2012 asking that any consideration for additional investment approval be paused while the Sunlander 14 scope was reviewed with the *'emphasis on the construction of shorter train consists with reduced requirements for enabling capital infrastructure*…'.

In October 2012, the QR Board approved the de-scoping of the Sunlander 14 project to delivery of three 9-car consists. In doing so, they removed the requirement to build 15 new luxury carriages. Each of the three 9-car trains would now comprise:

- two 'power cars' to drive the train and also supply power to carriages
- two 'railbed' sleeper cars with airline-style lie flat seating
- three premium economy sitter cars
- one baggage car
- one lounge/galley car.

QR decided to de-scope the project to achieve a new cost objective that had been placed on them by Queensland Treasury and Trade—to constrain the full cost of the project to no more than the budget of $221.3 million the QR Board had approved.

On 14 June 2013, the QR Board wrote again to the responsible Ministers to advise the Board's decision to change the scope of the project and that the capital cost to deliver the three 9-car consists was now expected to be $204.0 million. That letter advised of *'approximately $50 million in direct capital savings from the project as well as ongoing operational savings*' and that the decision had *'negated the need to construct a dedicated Traveltrain maintenance facility which has had estimates in the order of $70 million*'.

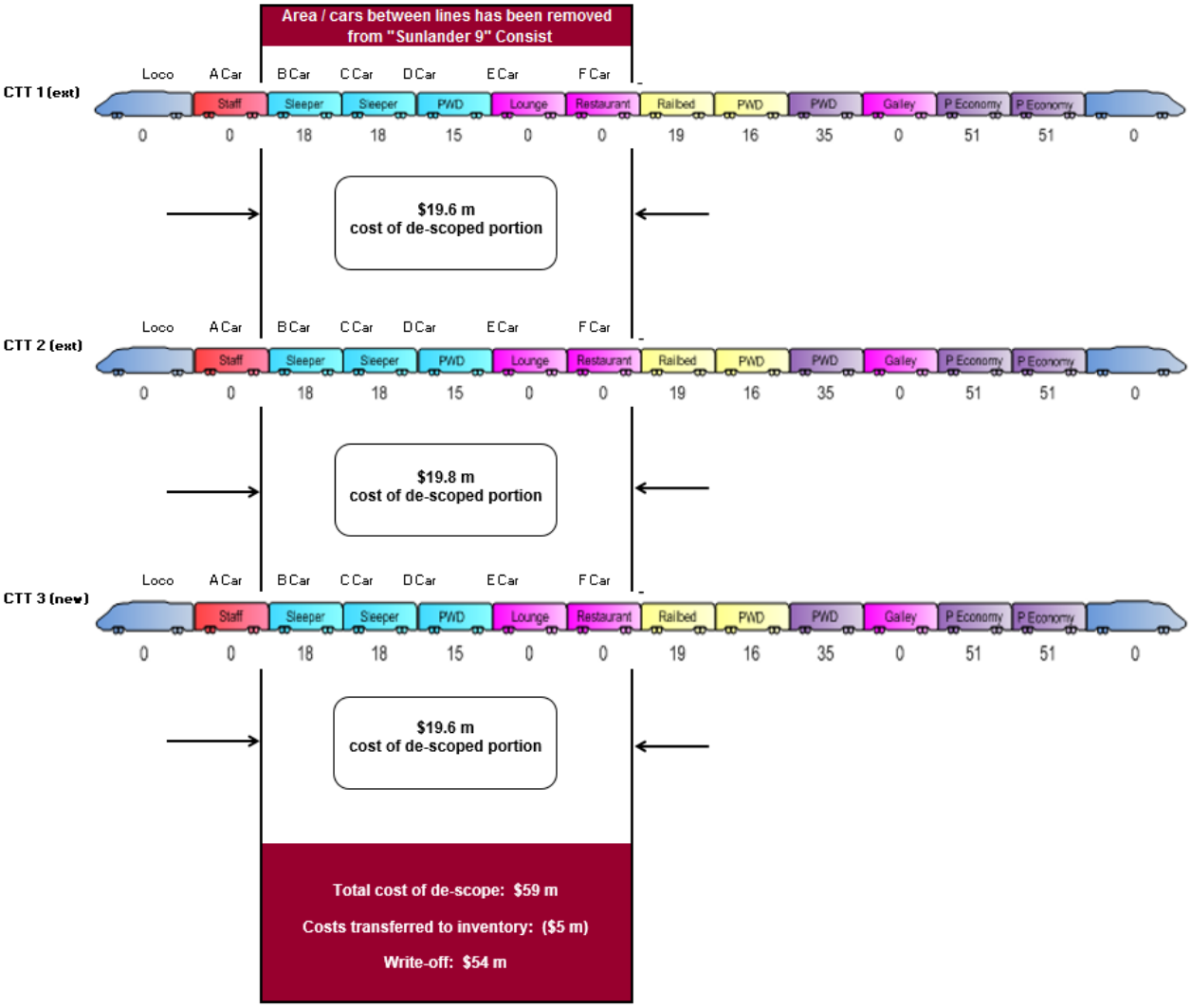
The advice to the responsible Ministers did not include additional known costs of $13.3 million.

After the decision to de-scope in October 2012, QR held the view that it would not be necessary to write off costs that had already been spent toward building the 15 new passenger carriages that it was now proposing to de-scope. However this position was revised in September 2013, resulting in a write off of $54 million of costs in QR's financial report for 2012–13.

Figure 1E summarises the effect of the decision on the configuration of each train and the value lost in costs already incurred. The QR Board approved the write off of these costs on 19 November 2013, offset by a transfer to inventory of $5 million.

In effect, a decision to avoid spending more than the QR Board approved cap of $221.3 million has cost the state $54 million in lost economic value. This indicates clearly that something went wrong with the project at its inception, during its delivery and/or in the decision to de-scope.

Figure 1E
Effect of decision to de-scope Sunlander 14 project



Source: Queensland Audit Office

This report examines whether what went wrong points to any systemic weaknesses in QR strategic asset management frameworks; asset acquisition and procurement policies and practices; or capital project monitoring and reporting.

1.4 Report structure and cost

The remainder of the report is structured as follows:

- Chapter 2 examines the original investment decision
- Chapter 3 examines the de-scope decision
- Appendix A contains responses received from QR and DTMR
- Appendix B contains a timeline of key events
- Appendix C contains a glossary

The cost of our investigation and in preparing this report was $165 000.

2 Original investment decision

In brief

Background

Queensland Rail (QR) knew as early as 1998 that the Sunlander fleet would need to be retired around 2013, when the age of the Sunlander 'M' class carriages reached 60 years. Also, these carriages do not comply with disability discrimination legislation.

After considering a range of options to replace the Sunlander, QR decided in October 2010 to upgrade the two existing Cairns tilt trains and rebrand the Brisbane to Cairns Traveltrain services as the *Spirit of Queensland*, operating three 14-car trains.

Conclusions

The original decision to invest in three 14-car trains did not demonstrate value for money because they would have delivered significantly more capacity than was warranted, and they excluded the significant costs for ancillary works and maintenance facilities.

While the approved capital cost to acquire the three train sets was reasonable, decisions about whether the project in its entirety represented value for money were not fully informed. QR and DTMR knew about other significant costs needed to deliver the solution but at times ignored these, and omitted to include that information in deliberations. This failure to provide or act on information about the total cost of the project, even arguing only partial investment approval was sought, is maladministration, at best.

Key findings

- DTMR approved a more costly three 14-car train option contradicting consultancy recommendations by opting to add carriages to the existing Cairns tilt train and working the trains much harder
- QR did not undertake comprehensive market or other analysis to support its expectations of patronage and full fare growth. Even if this hoped for growth was achieved, the trains would not have been operating at their full capacity until 2027.
- Market research and actual experience did not support other key assumptions on fares and the proportion of full fare paying guests.
- Optimism bias was evident in the original project assumptions about future patronage and revenues; the QR Board and DTMR did not challenge this bias.
- Both QR and DTMR knew the current maintenance facility at Mayne would not be suitable for longer consists and that the interim solution proposed ignored significant safety risks, the effect on the Traveltrain schedule and possible interference to the City train fleet.

Recommendation

It is recommended that Queensland Rail:

1. **implements, for all proposed major capital investments, a total net present cost of ownership which includes all initial and subsequent capital, operating, maintenance and disposal costs based on the most likely mode of operation of the asset; and which identifies and costs all infrastructure interdependencies and ancillary costs.**

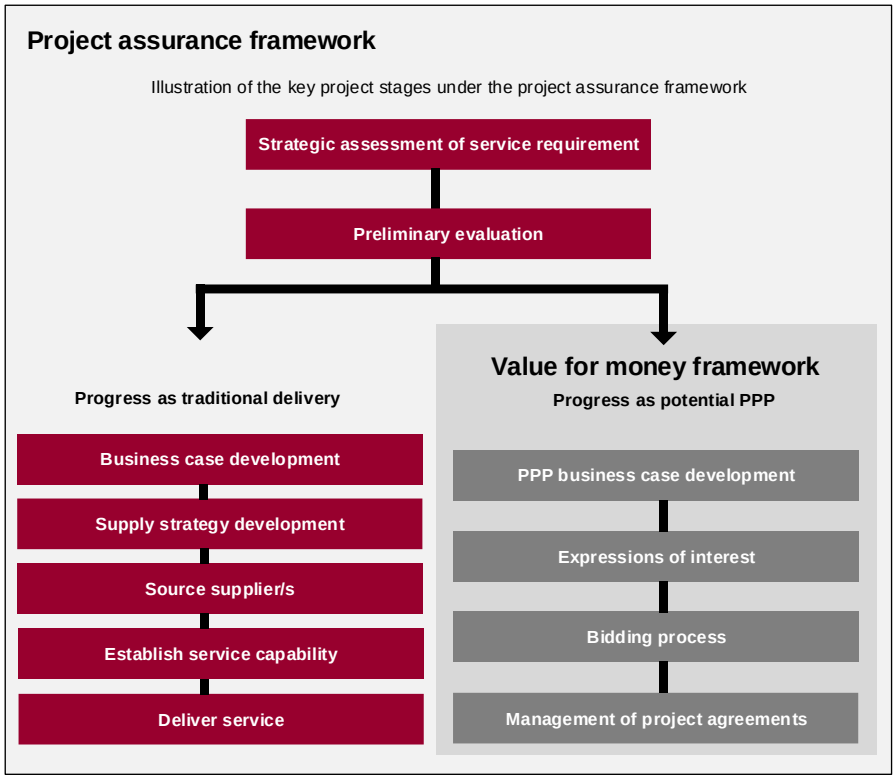
2.1 Background

Queensland Rail (QR) knew as early as 1998 that the Sunlander fleet would need to be retired around 2013, when the age of the Sunlander 'M' class carriages reached 60 years. Also, it was known these carriages do not comply with the *Disability Discrimination Act 1992* (Cth).

The locomotives used to pull the fleet also faced commercial obsolescence, as newer, more reliable and comfortable train travel options such as the Cairns tilt train fleet became available. Increased competition from low cost air travel also increased the need for more efficient locomotives with a lower operating cost base.

Large scale capital projects, such as the replacement of the Sunlander service, must comply with the requirements of the Queensland Government's project assurance framework (PAF). Figure 2A illustrates the key elements of the PAF and its relationship to the value for money (VfM) framework.

Figure 2A
Project assurance and value for money frameworks



Source: Queensland Treasury and Trade

We assessed the original investment decision for the Sunlander 14 project against the requirements of the PAF.

2.2 Conclusions

The original investment decision did not demonstrate value for money, because it would deliver more capacity than warranted and because it omitted significant costs, which understated the total cost of the solution.

QR and the Department of Transport and Main Roads (DTMR) should have challenged the optimism bias evident in assumptions about future patronage and revenues; they did not. Challenging this bias would have revealed the lack of rigour behind the assumptions at the feasibility and asset acquisition planning phases of the project.

It was only when it became evident that the full capital costs of the project would exceed the Board approved budget that QR applied more rigour to establishing the service need and the likely full outturn costs.

QR's failure to make clear to the Board, the shareholding Minsters and the government, the full cost of the train sets or of other changes needed to rail infrastructure exacerbated the situation.

On the evidence available to us, we could not establish whether the withholding of this information was intentional. The distinction of intent is important, as it makes the difference between maladministration and possible malfeasance.

2.3 Establishing the service need

The end of life of major infrastructure is a critically important juncture in the asset lifecycle. It provides the opportunity to reevaluate the service need, to ensure alignment of the entity's assets with its desired outcomes and to reestablish and test the most cost effective solutions to meet future service needs.

Before any major capital project is approved, the Queensland Government's project assurance framework (PAF) requires a strategic assessment of the service requirement. This allows government to make decisions based on the service outcomes sought, rather than on a narrower, entity-specific view.

The key activities during strategic assessment of a service requirement are:

- define the need to be addressed and outcome sought and identify its contribution to government priorities and outcomes
- scope the outcome sought
- identify potential solutions to achieve the outcome
- develop a detailed plan and budget to evaluate the potential solutions
- seek approval to proceed.

2.3.1 Existing services

The existing Sunlander service offered four classes of travel: the Queenslander class (a premium tourist product); first class sleepers; economy class sleepers; and economy seats. The Cairns tilt train offered business class seats only.

Patronage data

Operational data available to the QR Board showed the Sunlander and the Cairns tilt train services had historically operated with surplus capacity in both directions.

These two passenger services between Brisbane and Cairns had a total combined weekly capacity of 1 380 seats and average maximum demand load per week of 1 232 seats. In other words, an average of 1 232 passengers boarded and disembarked the train at some point between Brisbane and Cairns each week.

This measure of load does not take into account that not all passengers will remain on the train for the full journey from Brisbane to Cairns. Some of these passengers may have travelled just a short portion of the journey: for example, from Maryborough to Rockhampton.

Figure 2B summarises the patronage of the two services in 2009–10, before the Sunlander 14 project was approved.

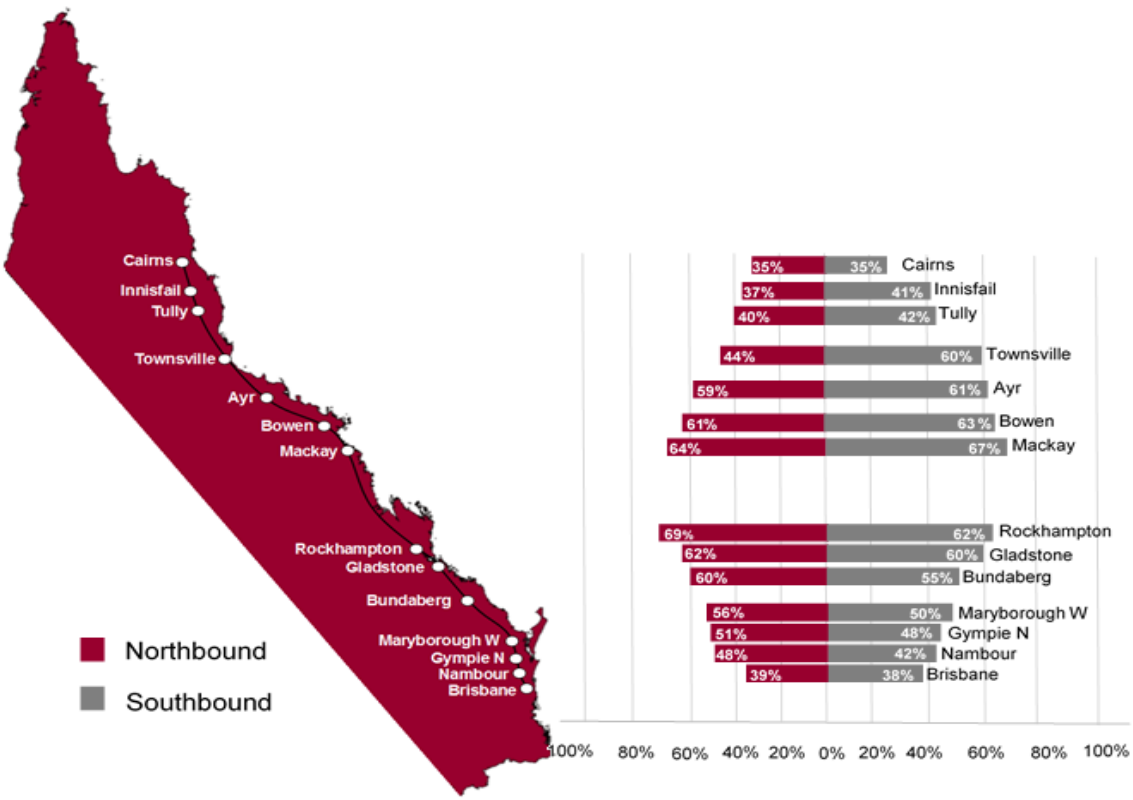
Figure 2B
Capacity and patronage of rail services between Brisbane and Cairns in 2009–10

2009–10	Sunlander	Cairns tilt train
Number of trains	2	2
Number of services per week	3	3
Return journeys per week	2	3
Patronage	85 875	42 143
Average passengers per service	338	265
Passenger capacity per service	282	173

Source: Queensland Audit Office

Figure 2C shows the average passenger loads for the Sunlander service between stops, as a percentage of total passenger capacity during 2008–09. It shows that occupancy rates only exceeded 60 per cent between Gladstone and Ayr in both directions; and that the maximum occupancy rate was 67 per cent southbound between Mackay and Rockhampton.

Figure 2C
Sunlander train: average load as a percentage of train capacity in 2008–09



Note: In 2008–09 occupancy rates only exceeded 60 per cent between Gladstone and Ayr in both directions

Source: Queensland Audit Office

Net operating costs

Although passengers pay to travel on the Traveltrain services, the government subsidises their costs. Historically, these services cost triple the money passengers paid.

Figure 2D shows the level of subsidy required to operate the Traveltrain services between Cairns and Brisbane in 2009-10.

Figure 2D
Subsidy of rail services between Brisbane and Cairns - 2009-10

	Sunlander	Cairns tilt train
Total government subsidy per annum	$36.8 million	$34.9 million
Average subsidy ($/passenger)	$429	$829

Source: Queensland Audit Office

2.3.2 Sunlander 14

The Traveltrain renewal program (TRP) assumed the rail passenger service between Brisbane and Cairns would continue. QR did not consider alternative transport options such as coach, unlike other routes.

With the ongoing service need assumed rather than rigorously examined, the options QR analysed focused only on considerations of required capacity, framed against the strategic objectives for the service.

Establishing required capacity

The new diesel tilt train was to be part of the extended Cairns tilt train service, which was to include three classes of seating:

- a luxury sleeper tourism product
- a flatbed seat (similar to airline first class seating)
- premium seating (similar to airline business class seating).

Reaching this decision as the preferred option involved DTMR's incomplete evaluation of proposed options, poor communication between QR and DTMR and a lack of timely engagement with stakeholders inside QR.

A 2009 consultant's report DTMR (then Queensland Transport) commissioned, evaluated the total cost of ownership and associated risks of numerous options to replace the ageing Traveltrain fleet. This report comprehensively examined the rollingstock options for most of the Traveltrain fleet, including assessing the life cycle costs of various fleet configurations. It recommended replacing the existing trains by extending the length of the two existing 9-car Cairns tilt train consists to 15 cars and working the trains much harder.

The report proposed an 'integration model' of adding five additional sleeper carriages and a new lounge/buffet car to each of the two Cairns tilt trains, extending their original design length of 15 cars (two power cars and 13 carriages).

The rationale for two 15-car trains was that integrating sleeping compartments from the Sunlander (to be decommissioned) into the Cairns tilt train:

- provided a similar number of seats and beds as the existing two 9-car services combined
- reduced journey times from 36 hours (Sunlander) and 24 hours (Cairns tilt train) to 22 hours and 15 minutes
- offered the ability to implement a regular daily timetable, with a one hour and 45 minute turnaround in Brisbane and Cairns.

The proposal would also produce the lowest cost outcomes in net present value terms, after taking into account capital, operating and maintenance costs. This modelling was based on acquiring 12 new carriages and a spare power car.

In May 2010, QR introduced the option of three 14-car Cairns tilt train consists delivering six return services between Brisbane and Cairns per week. Former DTMR staff involved in this stage of the project asserted to us that the move from two consists to three was necessary to maintain under the transport services contract the frequency of service the government desired. QR staff involved in this stage of the project asserted to us that senior QR executives with a focus on tourism formulated this option.

QR's written representations to their shareholding Minister about this option were in part misleading, as they stated incorrectly that DTMR's consultants recommended the option of four consists. QR then presented the three 14-car consist option as a more efficient solution. The consultants recommended two 15-car consists; we found no evidence the consultants advised three 14-car consists would be more efficient.

Although DTMR had earlier engaged consultants to evaluate the options, DTMR opted to approve the three 14-car train design but did not demonstrate to the shareholding Ministers that the proposed infrastructure was fit for purpose, had a total cost of ownership comparable to that of the other options and that value for money would be achieved.

The September 2010 report *Stage Gate Process: Capital Expenditure—Prefeasibility Investment Approval Request*: recommended an expanded Cairns tilt train option of three 14-car consists and, again, incorrectly referenced the work of DTMR's consultants in 2009, stating that *'fleet size and configuration has been based around [consultant's] report – option to tailored to fit current demand on the coastal route'.*

Future patronage assumptions

The Sunlander 14 project would have resulted in three 14-car trains operating six services a week, with a total weekly capacity of 1 320 seats, similar to the existing service load capacity. The service would be delivered differently, using three consists instead of four. All three consists would include three classes—premium sleeping compartments; flat beds and seats, whereas previously the Cairns tilt trains only provided seats.

In supporting a three train 14-car consist, QR adopted unsupported and optimistic assumptions, based on the revenue potential of the proposed high quality consists.

These assumptions included:

- increased patronage of two per cent per annum from 2009–10 for all classes of travel; up to this date, QR data indicated passenger numbers were declining
- expected occupancy rates to be the same as the current average occupancy level of 61 per cent for each new class of travel, despite other reports noting occupancy rates would decline.

As the analysis of patronage was based on historical data, such as average peak use per service, it provided no indication of any future market for 'luxury' long distance train travel.

QR approved the project in a climate where demand for long-distance train services was declining and with no market testing to support growth expectations. Had the decline in passenger numbers reversed and passenger patronage grown two per cent per annum, we estimate that the Sunlander 14 project still would not have been operating at full capacity until 2027.

Net operating costs assumptions

In contrast to the negative net present value (net present cost) of existing services, financial analysis of the Sunlander 14 project found an expected positive net present value of $4.85 million.

This positive net present value relied on key growth in demand assumptions, more full fare paying guests and increased fares. Neither market research nor actual experience supported any of these assumptions:

- Revenue figures were based on the untested assumption that fares could be increased each year for the first five years. A comparison of fares displayed on the QR website shows a small increase of 2.7 per cent for one fare class and a significant decrease of 29.9 per cent for the other fare class from the calendar years of 2012 to 2013.
- Pensioners were to receive heavily discounted travel in the luxury sleepers (40 per cent discount) and the flat beds (70 per cent discount). In 2010, pensioners represented 49 per cent of total Traveltrain patronage. There is no evidence that the effect of this discounting on the brand and the product differentiation of the premium classes was addressed. QR did not undertake market research of the proposed new classes of travel; customers' willingness to pay for new classes of travel; or the demographics likely to be attracted to the service.

QR did not evaluate whether the premium service, which included luxury sleepers and flatbed classes of seating, would itself be commercially viable and profitable without subsidy under the rail transport service contract (Rail TSC). QR did not perform a net present value analysis for these classes of travel separately; so it is also not clear how the seating classes would contribute to the net present value of the solution as a whole.

The value for money assessment included pricing comparisons with QR's competitors, but comparisons were limited to one rail and one bus service on one route. QR should have conducted competitor pricing of other rail services and airline competitors.

2.4 Capital cost and project funding

Under the Rail TSC QR self funds its initial infrastructure investments and recoups this once an asset is commissioned, through the annual TSC payments it receives from DTMR. The TSC revenue QR receives includes a component for depreciation and an estimated return on cost of assets for TSC funded assets.

2.4.1 Board approved capital cost components

While QR self funded this major asset acquisition it was required also to obtain investment approval for the project by their shareholding Minister.

In September 2010, the QR Board approved an initial capital budget of $195.0 million for the Sunlander 14 project, comprising three major components:

- rollingstock, including three power cars—$189.4million
- seating and infotainment systems—$2 million
- project management—$3.6 million.

The shareholding Minister granted investment approval in August 2011 for $195.0 million.

The QR Board subsequently approved additional costs, which brought the total Board approved QR capital budget for the Sunlander 14 project to $221.3 million.

- in November 2010 the rollingstock contract was varied to add a fourth power car at a cost of $8.75 million
- in June 2011 approval was obtained to purchase automatic train protection (ATP) at a cost of $2.653 million
- in April 2012 the rollingstock contract was again varied for the contractor to fit seating and infotainment systems in the two existing tilt trains at a cost of $7.95 million.

Additionally, a project to upgrade the seating in the existing Cairns tilt train fleet to lie flat seating, with a budget of $4 million had already been approved by the Board in March 2010 (i.e. it preceded the Sunlander 14 project) and remained as a separate project.

Figure 2E summarises the Board approvals for each capital component.

Figure 2E
Sunlander 14 project—Board approved capital budgets

Element	September 2010 $ m	February 2012 $ m	Difference $ m
Rollingstock contract—initial	189.395	189.395	—
Seating and infotainment	2.000	7.730	5.730
Project management	3.650	3.650	—
Fourth power car	—	8.750	8.750
Automatic train protection (ATP)	—	2.653	2.653
Rollingstock contract—variation 5	—	9.156	9.156
Total	**195.045**	**221.334**	**26.289**

Note: SHM = shareholding Ministers
Rollingstock contract—variation 5 was estimated at $9.156 million but was approved and contracted at $7.95 million in April 2012.

Source Queensland Audit Office

Rollingstock contract—initial

During 2010, QR negotiated with a local supplier on indicative prices to construct its upgraded tilt trains.

DTMR also engaged its own consultant to assess the feasibility of QR's proposal to replace its Traveltrain rollingstock and to review the indicative prices the local supplier offered for value for money.

The DTMR consultant reported in July 2010 that the proposal represented value for money against international benchmarks, with a forecast cost to QR of around $181 million.

The consultant also concluded:

- key QR assumptions were not adequately supported
- there were numerous risks with the proposed approach
- the project time frame was ambitious
- one quarter of train procurement projects exceeded budgets and time frame expectations, so QR should enter into a fixed-price contract to mitigate this risk.

In October 2010 the QR Board approved engaging the local manufacturer for a fixed price of $189 million, without going to open tender. It supported its decision not to go to market by noting:

- going to market to introduce more competition would delay delivery of rollingstock past December 2013; this would require alternative—perhaps reduced—services
- the supplier owned intellectual property for the tilt train mechanism to be used in any replacement of the Sunlander; the technology used was a 'known' risk, where other technologies proposed through a tender process may introduce unknown risks
- the then Department of Employment and Economic Development raised significant concerns for employment in the Maryborough region if the preferred supplier was not successful.

DTMR and QR consultants respectively reported that a reasonable cost per carriage would be $5.39 million and $6 million. The contract price was within three per cent and 14 per cent of these benchmarks respectively and, as such, represented reasonable value for money, given that the July 2010 benchmark was based on carriages manufactured overseas.

Seating and infotainment

Under the build contract with the local supplier, the infotainment system, lie flat seats and sitter seats were 'purchaser supplied' items, meaning QR was responsible for procuring the necessary items and had to provide them to the contractor by 31 December 2011. The contractor was responsible for fitting the new Cairns tilt trains with these items, while QR was responsible for fitting the items to the two existing trains.

The original Board approval allowed $2 million for seating and infotainment. The Board queried the relationship between QR and the contractor for the fit out, how this would work, the associated risks and whether the costs of fit out had been approved. The Board accepted QR's explanation that there was a separate Cairns tilt train seating project with a budget of $5.7 million, fully funded and approved in the transport service contract.

There is no evidence the QR Board, DTMR or QR's internal project oversight committees clarified whether:

- the $2 million related to the purchase of the seats, screens and infotainment systems or the labour related to QR fitting the items to the two existing trains
- the budget was reasonable and sufficient, given the 2009 consultant's report estimated a cost of $60 000 to $75 000 per lie flat seat—a budget of $2 million would buy, at most, 33 lie flat seats
- the Cairns tilt train seating project should be consolidated with the Sunlander 14 project to provide a holistic view of the full cost of the project.

Ultimately, the initial budget for seating and infotainment proved to be insufficient, with the seating provider proposing $19 000 to $23 000 per seat—significantly higher than the original estimate of $9 000 per seat. Delivery of the seating and infotainment as originally planned required a further $5.4 million.

Project management costs

The original project budget the QR Board approved included $3.65 million for costs described as 'project management cost; contract management; project management / engineering costs and rollingstock engineering contract management costs'.

It is not clear whether the $3.65 million related to the cost of QR's project management office coordinating project delivery, or to the internal QR engineering costs of performing work on the existing fleet. There is no evidence the QR Board, DTMR or QR's internal committees questioned the makeup, rationale and adequacy of this activity and budget.

In March 2012 QR estimated that project management required a further $5.5 million and internal QR engineering required a further $2.05 million, but there is no evidence that this was approved by the Board.

Addition of a fourth power car

The 2009 DTMR consultant's report identified the benefits of a spare power car, due to reduced maintenance. The initial contract included the acquisition of three power cars, resulting in one spare power car. In October 2010, QR determined a fourth new power car was necessary to provide spare capacity for faster turnaround times, uninterrupted services during maintenance and reduced disruption in the event of an incident.

We have not identified any documents contesting the benefits of the fourth power car within QR, by DTMR or by consultants. QR treated the acquisition of a fourth power car as a separately approved project.

Addition of Automatic Train Protection

The July 2010 DTMR consultant's report highlighted significant uncertainty arising from the influence of QR's revised safety management system. The consultant considered the undefined implications of the safety management system to affect all elements of the project's design, cost and schedule. QR did not address this uncertainty or its possible effect on the consultant's value for money assessment in their offer to the build contractor.

Given the consultant's significant concerns about the unresolved effect of the safety management system on the value for money assessment, both DTMR and QR should have updated the value for money assessment and business case as soon as the safety management system issue was resolved. There is no evidence this was considered or done.

Rollingstock contract—variation 5

Under the original contract with the local build supplier, QR was to fit seats and infotainment to the existing Cairns tilt train consists. In February 2012, it was estimated that the cost of this additional work would be $9.156 million. In April 2012, QR approved a contract variation and outsourced this work to the contractor for $7.95 million.

It is not clear why QR did not adopt a holistic approach to the project cost in September 2010, as QR had identified and documented many of the costs subsequently submitted for approval much earlier in the life of the project.

2.4.2 Non-approved capital costs

The original budget for the Sunlander 14 project was not complete; it did not clearly show the Board and the shareholding Minister the likely total capital costs of ownership.

The QR investment framework manual (IFM), and the requirements of the *Investment guidelines for government owned corporations* make it clear that thresholds for obtaining shareholding Minister approval are based on the total value of a project, including any future capital cost obligations associated with the initial investment (for example, an asset acquisition that requires substantial refurbishment or any other attendant future commitments).

The early proposals to replace Sunlander trains indicated the government would approve a project investment of $192.4 million; the TSC would fund costs for minor improvements to existing infrastructure. These 'minor improvements' referred to the maintenance facility for the extended Cairns tilt train and to upgrades along the route for provisioning and decanting.

'Minor improvements' to facilities did not contemplate the cost of a new maintenance facility, which QR estimated by January 2010 at $60–70 million, equating to a third of the budget government approved.

A change in QR management in early 2012 increased scrutiny of the Sunlander 14 project and QR reevaluated the project budget from which the QR Board identified and approved costs additional to the original investment the shareholding Minister approved.

QR wrote to their shareholding Ministers in March 2012 requesting a further $22.63 million for 'contingency', seating and the automatic train protection. QR knew of estimates of more project costs of $52.9 million at the time, but did not communicate these costs in the documents government considered.

Figure 2F shows the project costs that had been included in the original investment approval by the shareholding Ministers, the additional amounts QR requested for approval by the Minister; and the amounts known of but for which no request for approval was made.

Figure 2F
Sunlander 14 project—approved and unapproved investment budgets

Approval status	Project cost element	$ million
Original SHM investment approval	Rollingstock contract	189.395
	Seating and infotainment	2.000
	Project management	3.650
	Total	**195.045**
QR request to SHM—approved by QR Board	Contingency	14.600
	Seating and infotainment (existing)	5.444
	ATP II	2.586
	Total	**22.630**
Revised investment approval requested		**217.675**
Known project cost estimates not included in either the original investment approval or board approved request for further investment approval	Fourth power car	8.750
	Rollingstock contract—variation 5	9.156
	Mayne maintenance facility upgrade	20.000
	En route provisioning	15.000
	Total	**52.906**
	Total all costs	**270.581**

Note: the cost estimates for the seating and infotainment and automatic train protection system (ATPII) had increased marginally from the Board approved budget in February 2012.

Source: Queensland Audit Office from QR Board papers

QR had treated the fourth power car as a separate Board-approved project, implying they would self fund this. The contract variation number 5, to fit and supply seating and infotainment systems in the existing tilt trains, in effect substituted for QR internal engineering costs. Both were significant cost elements to the total Sunlander 14 solution that should at least have been made transparent to the government when requesting additional investment approval.

Maintenance facility

Before the prefeasibility studies, both QR and DTMR knew the current maintenance facility at Mayne for the existing Cairns tilt train 9-car consists would not suit a longer 14-car consist and that this would need to be addressed by December 2013.

As early as 2006, QR advice to government indicated the Rail TSC was to fund allowances up to $35 million for refurbishment of the existing facility.

The 2009 DTMR consultant's analysis excluded costs to upgrade the maintenance facility and improve the *en route* facilities. The report instead proposed adding an automatic de-coupler between the seventh and eighth carriages to enable reliable, simple, automated decoupling; this would enable maintenance activities without significant changes to the maintenance shed. Based on this advice, DTMR adopted the position that an automatic de-coupler would address the issues and a 14-car train could be maintained at the existing facility without the need for a significant upgrade, and so avoiding the need for a new facility.

In January 2010, QR prepared a *Stage gate process: capital expenditure concept approval request* for a new maintenance facility for Traveltrain rollingstock with an indicative cost of $68 million. QR stated that the *'concept had been presented to DTMR in the preceding 18 months and that the facility was required for the Traveltrain fleet because Citytrain rollingstock will require extra stabling capacity in Mayne, and to remove safety risks by eliminating need to shunt. The project was to create a shed that can handle a 20-car consist'*.

DTMR and QR failed to agree on the need for further capital investment in the maintenance facility. QR believed the risks associated with decoupling were unacceptable; particularly, there was concern about the risk of disruption to the CityTrain network by the Cairns tilt train blocking the balloon loop at the facility, which was used each day by the CityTrain fleet.

Staff of the contractor engaged to build the new trains attested to us that, while decoupling of carriages could technically occur for maintenance purposes, in their view it was highly unlikely QR would do so; the train was operationally designed to be maintained as a single consist.

However, in September 2010, QR advice to DTMR then supported the view that the upgraded Cairns tilt trains could be maintained at the existing Mayne facility to the effect that '*trains will contain couplings that allow the train to be split in two so that maintenance can occur at the existing facility. Minor improvements at the Mayne facility will be managed through ongoing capital component of the Rail TSC'.*

There is no evidence QR and DTMR took adequate steps to resolve the misalignment in their views on the requirement for a maintenance facility. There is no evidence QR advised the QR Board or the shareholding Minister of the misalignment between the preferred solutions of QR and DTMR. Rather, each party initially progressed its individual solution.

Concurrently, in September 2010, QR prepared the *Stage gate process: capital expenditure – prefeasibility investment approval request* which, in recommending an expanded Cairns tilt train option of three 14-car consists notes that ' *a master plan is being drafted for Mayne Maintenance Facility, which looks at its long term viability and maintenance and stabling requirements of Traveltrain and Citytrain fleets; [and] highlights two scenarios—new facility $69M; extension of existing Mayne facility $10M'.*

QR's Investment Advisory Team (IAT) and Strategic Control Group (SCG) meetings in August 2011, October 2011, and November 2011 continued to discuss the maintenance facility, with cost estimates varying from $60 to $152 million.

In December 2011, the preferred option of QR's SCG of a dedicated maintenance facility changed to an interim solution with a budget of $1.3 million. QR's IAT and SCG continued to discuss various options to address maintenance issues associated with the length of the train in the months leading up to the decision to de-scope.

In February 2012, QR proposed upgrading the maintenance facility. The maintenance upgrade, estimated to cost $20 million, depended on a reduced service schedule and would require blocking CityTrain facilities while checking full length trains for faults. The upgrade was also needed to allow sufficient access to other maintenance facilities and to increase flexibility. QR estimated interim works could be done by September 2012 and would be effective for three to four years. Under this scenario, QR assessed the safety risk associated with splitting and reforming as acceptable.

En route provisioning

QR identified in May 2012 the length of the upgraded Cairns tilt trains would require modifications to the *en route* facilities at stations between Brisbane and Cairns, including additional refuelling, water and decanting facilities. In October 2010, DTMR advised the government that progressive stops would fit trains into the shorter platforms along the route from Brisbane to Cairns. The government-approved budget of $195.2 million made no allowance for improvements to *en route* facilities. QR estimated the cost of the required work being $10–$20 million, but there is no evidence of QR making a submission for QR Board or shareholding Minister approval of the required investment.

2.5 Recommendation

It is recommended that Queensland Rail:

1. **implements, for all proposed major capital investments, a total net present cost of ownership which includes all initial and subsequent capital, operating, maintenance and disposal costs based on the most likely mode of operation of the asset; and which identifies and costs all infrastructure interdependencies and ancillary costs.**

3 De-scoping decision

In brief

Background

In 2012, Queensland Rail (QR) sought $22.63 million additional government investment approval, but ultimately withdrew the request and it chose to reconsider the scope of the Sunlander 14 project.

The decision to de-scope reduced by 15 the total number of new carriages to be constructed; delivering three 9-car trains instead of three 14-car trains

Conclusions

QR's focus on delivering the project within the approved budget led to false economy, predicated on incomplete analysis and advice. By reducing the investment in the project by $50 million, QR wasted a similar amount.

It also lost sight of the broader objectives of the Traveltrain renewal program and subordinated strategic asset management considerations to short term cost imperatives and financial exigencies. In doing so, it lost opportunities for greater economies of scale that could also have created more certainty for other Traveltrain projects.

Time is running out on options to renew or replace the rollingstock on other Traveltrain services. QR efforts to generate a product strategy for Traveltrain that will feed into the asset management plan are encouraging and demonstrate QR has already learned from the failings of the Sunlander 14 project.

Key findings

- QR and DTMR had identified other necessary costs during the project planning phase, but it was not until well into the construction phase (March 2012) that the QR Board formally acknowledged the full capital costs would exceed the Board approved budget.
- The removal of 15 new carriages from the project scope impeded QR's strategic intent to deliver a premium rail travel product. The decision however can be rationalised in part because a shorter train suited QR's existing facilities and historical patronage trends better.
- QR selected the most financially affordable of the three options it evaluated and the only option that came within the Board approved funding envelope of $221.3 million.
- Cost was not decreased to match the reduced project scope, with the average contracted cost per car (power cars and carriages) increasing from $4.5 million to $6.5 million.
- The QR Board's decision was not fully informed in that, although the adopted option would have the lowest initial capital outlay, it did not evaluate whether reducing the scope was the optimal asset management strategy over the longer term for the entire Traveltrain fleet.

3.1 Background

Early in 2012, Queensland Rail (QR) critically evaluated the cost of completing the Sunlander 14 projects, including all associated costs and identified that $22.63 million of additional investment approval was required to cover costs of seating/infotainment ($5.5 million), automatic track protection ($2.6 million), and contingency costs ($14.6 million).

The QR Board sought urgent approval from the shareholding Ministers on 1 March 2012. In response, the Director-General of the Department of Transport and Main Roads wrote to the acting Chief Executive Officer of QR on 8 March 2012, advising that because the election was close and *'in accordance with the caretaker conventions, it would be inappropriate for shareholding Ministers to consider and / or approve Queensland Rail's request for additional funding of $22.63 million at this time'*.

The Department of Transport and Main Roads (DTMR) and Queensland Treasury and Trade (QTT) briefed the shareholding Ministers in July 2012 that both QR investment approval requests had insufficient information for support as there was no business case and no detailed costing.

QTT asked QR to consider project maximisation and efficiencies, including potential cost savings that could help to fund additional components omitted from the original project scope. QR later advised it had subsequently identified savings to deliver the project within the $195 million budget. It was at this time QR wrote to the shareholding Minister to request a pause in the earlier request for additional investment approval. QR subsequently withdrew its request for additional investment approval.

QR interpreted DTMR's March response as a lack of government support for further investment approval of $50–$70 million for a new maintenance facility.

On 9 July 2012, the QR Board wrote to the shareholding Minister again to request a pause on the investment approval request and, in October 2012, QR decided not to pursue the additional funding required (estimated to be $131.7 million) to achieve the original scope of the Sunlander 14 project. Instead, it changed the scope of the project to focus on affordability. In this context, 'affordability' meant constraining the total project cost to within $221 million.

We assessed whether the decision to de-scope the Sunlander 14 project to meet the cost cap was cost effective and represented value for money.

3.2 Conclusions

When required to reconsider the configuration of the original design due to funding constraints, QR opted for the lowest cost option; but this produced a false economy, predicated on incomplete analysis and advice.

In effect, QR procured three 9-car trains for not much less than the price it originally contracted to procure three 14-car trains. QR also missed opportunities to extract greater economies of scale and improved operating efficiencies for its entire Traveltrain fleet.

3.3 Revised train capacity

QR's decision to de-scope the Sunlander 14 project reduced by 15 the total number of new carriages to be constructed, delivering three 9-car trains instead of three 14-car trains. The 15 new carriages removed in the de-scope comprised six sleeper cars; three lounge cars; three restaurant cars and three accessible cars for people with disabilities.

QR's removal of the 15 new carriages from the project scope impeded its strategic intent to deliver a premium rail travel product.

The decreasing demand for high end long-distance rail services supports QR's decision to remove five cars per train; and a shorter train suits QR's existing facilities and historical patronage trends better.

At the time of resolving the configuration of the 9-car trains, QR undertook market research. The research suggested the vast majority of current and future customers of long-distance rail travel between Brisbane and Cairns were concession travellers and adults travelling to visit friends or family.

Market data indicated between two and four per cent of domestic and international arrivals used trains; but only five per cent of the domestic market was willing to pay more for premium services and only seven per cent of the domestic market stayed in five star accommodation.

Barriers to rail travel are affordability, speed, length of journey (with 16 hours considered as the pain point), reliability and noise from other passengers. These barriers reduce demand from full fare paying customers for first class train travel.

QR's research showed it was less likely customers would opt for first class travel and more likely they would opt for a rail bed. The target markets therefore would continue to be concession travellers, backpackers, and those travelling to visit friends and family. These target markets would be unlikely to pay full fare for a first class suite in favour of a rail bed.

This market analysis supported the revised design configuration which removed first class sleepers.

3.4 Revised train cost

Figure 3A summarises the costs approved as part of the original $195 million budget and the additional costs the QR Board subsequently endorsed up to February 2012 to increase the value of the project to $221.3 million.

Figure 3A
Sunlander revised scope—cost components

Cost component	Approved budget $ m	De-scoped budget $ m
Original contract	189.39	165.97
S14 seating (initial funding)	2.00	—
QR engineering (internal)	3.65	2.19
Investment approved by SHM	**195.04**	
Spare Cairns tilt train power car	8.75	8.75
Existing Cairns tilt train seat upgrade	5.73	—
Additional existing seat upgrade (included in variation 5 to the contract)	9.16	7.98
Seating and infotainment (total)	—	11.20
ATP and traction upgrade	2.65	3.55
Minor variations to original contract	—	2.70
Onboard equipment	—	1.00
Foreign exchange	—	0.41
Prolongation costs	—	0.25
Investment approved by QR Board	**221.33**	**204.00**

Source: Queensland Rail Board Minutes—30 October 2012 and Letter to the responsible Ministers—14 June 2013

The approved budget splits the cost of seating and infotainment ($16.89 million)) into initial funding, funding for the existing CTT seat upgrade and variation 5 to the contract. The de-scoped budget splits the cost of seating and infotainment ($19.18 million) into variation 5 to the contract and seating and infotainment (total).

3.4.1 De-scoping options analysis

The scope review included a financial evaluation of three potential reduced scope options. QR adopted the option it considered the most affordable to deliver.

The option QR chose was the only one of the three it costed within the funding cap, but it was not the most cost effective option from a value for money perspective.

Figure 3B shows the financial analysis of the three de-scoped options.

Figure 3B
Cost comparison of revised scope options

2014	Option A (3 x 11-car consist with suites) (5 services/week) $ m	Option B(1) (3 x 9-car consist with suites) (6 services/week) $ m	Option B(2) (3 x 9-car consist with railbeds) (6 services/week) $ m
Revenue	(30.07)	(23.58)	(27.08)
Operating costs	73.12	76.40	78.88
Capital component	46.23	43.93	43.93
Net cost per annum	89.27	96.75	95.73
Net present value (cost)	(441.6)	(476.2)	(471.7)

Source: Queensland Rail Board Minutes—30 October 2012

A 10-year net present value analysis highlighted vacancies in first class suites (options A and B1) would have a disproportionate effect on the revenue performance of these options, in that a decrease of five per cent in the ticket sales for first class suites has a far greater financial effect than a five per cent decrease in the ticket sales of seats and railbeds. This is due to the much higher fares QR collects for first class suites.

QR rejected the 11-car consist (Option A) despite having the lowest net present cost over ten years, because QR considered it unachievable within the cost cap.

Contrary to its position in February 2012, the QR Board also considered it a significant risk to operate rollingstock which must be split and maintained in tandem at a facility which can only accommodate a 9-car consist. QR also identified the untested costs associated with refuelling and water decanting facilities *en route* as a risk for this option.

QR chose the rail bed (three x 9-car) option (Option B2) primarily because it was the lowest cost, supported by market research that pointed toward the rail bed/premium economy consist as best suited to its target market.

As at June 2013, total approved and additional identified costs to deliver the de-scoped project was budgeted at $217.4 million—within the cost cap.

3.4.2 Cost optimisation

While the option chosen had the lowest initial capital outlay, and would return a net present value comparable with the other 9-car option QR evaluated, QR did not consider whether reducing the scope was the optimal commercial decision.

QR considered other options to optimise value for money outcomes, but as none came within the new funding cap they were not pursued. As a result QR did not consider if it would recover the higher initial investment of delivering to the original scope, or to a modified scope with costs greater than the cap, by generating higher revenues.

Option to consider an additional tilt train

When QR decided to reduce the size of the trains to be built, it considered the sunk investment of the design, engineering and construction costs and noted, given the advanced stage of the project, any reduction in carriage numbers would not be fully reflected in substantial financial savings from the contract with the builder. To minimise the effect of these sunk costs, QR investigated whether a fourth tilt train should be built and added to the Traveltrain fleet.

Feedback to the QR Board from the Traveltrain Renewal Program strategic control group indicated a fourth train would not be feasible as it could not be achieved under the cost cap of $221.3 million. QR advised its Board the contractor had quoted an additional $28 million to construct a fourth train, increasing total revised contract costs from $185.6 million to $211.9 million. Although this quote incorporated refurbishment of existing consists and construction of new consists, it did not include costs for seating and infotainment, foreign exchange, on board equipment, and automatic train protection. Estimated at the time as an additional $15.7 million, these costs were omitted from the quote when presented to the QR Board on 30 October 2012.

In response, the QR Board held discussions on 30 October 2012 to consider other options to maximise the value of the materials and funding already committed to the project, whilst remaining within the available capital budget. The aim was to deliver the project, but within the approved budget to avoid having to request additional investment approval.

QR also considered delivering four trains for the North Coast and Central Western lines. These included an additional carriage for premium economy seating, which the contractor estimated would bring the contract cost to $237.9 million.

QR's Board revisited the decision for the fourth train on 5 December 2012, but concluded it was not possible to approve its inclusion for the Central West Line, until the government finalised its policy position on the future of the Western services.

QR also considered options to reconfigure the consist design to accommodate sleeper berths but, the 9-car Railbed option offered lower levels of risk of project time delay and market research suggested strong and reliable levels of support among current and potential customers for the rail bed format. As the 9-car sleeper option increased the potential for costs to exceed the approved capital budget, the QR Board agreed to retain the three 9-car railbed/premium economy option, excluding an additional train, for which the contractor honoured the original fixed-price quote of $183.399 million.

The general need for an upgrade to the Mayne maintenance facility

QR originally raised the need for a maintenance facility, in its concept to prefeasibility business case, to maintain the Sunlander fleet and rollingstock for the *Spirit of the Outback* and Westlander trains.

After the decision to re-scope, QR did not revisit the need for a maintenance facility. Its decision to downsize to three 9-car trains eliminated issues about length associated with the original Sunlander 14-car option. QR gave no further thought to the benefits of a new maintenance facility to future tilt train fleets or the Citytrain Network at Mayne.

DTMR consultants reported in 2009 that the *'present facility is very cramped, and an upgrade of the depot would be of benefit, whatever decisions are taken regarding the rollingstock'*. QR has not considered or communicated the benefits and efficiencies to be gained by upgrading the maintenance facility in its decision to de-scope.

By focusing solely on one service, and making the project design fit the budget, QR missed an opportunity to gain economies of scale, should the Traveltrain renewal program move to a tilt train fleet, thus requiring a fit for purpose maintenance facility.

3.4.3 Costs saved and foregone

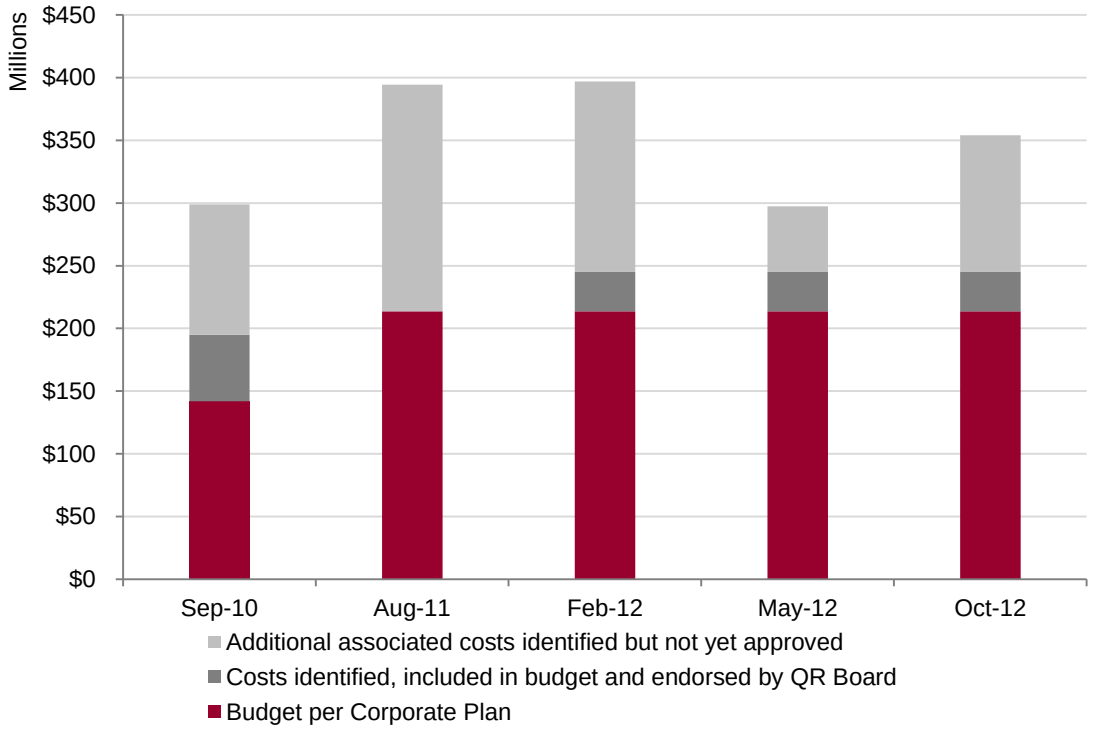
QR's submission to its Board in October 2012 identified de-scoping would likely reduce the total direct and indirect costs relating to the Sunlander 14 project by $79.1 million.

By 2012, internal QR reporting on total project costs showed a funding shortfall of $137.3 million. The total cost to complete the delivery and operational readiness of the Sunlander 14 project in its original form was conservatively estimated in the range of $358 million to $404 million. This level of costs was double the investment approval the shareholding Ministers approved.

The main components of the additional costs were those the QR Board had not previously approved for a new maintenance facility and for *en route* provisioning.

QR and DTMR knew of these significant project costs as shown in Figure 3C but did not include them in the Board approved project cost.

Figure 3C
Sunlander 14 (original design) costs

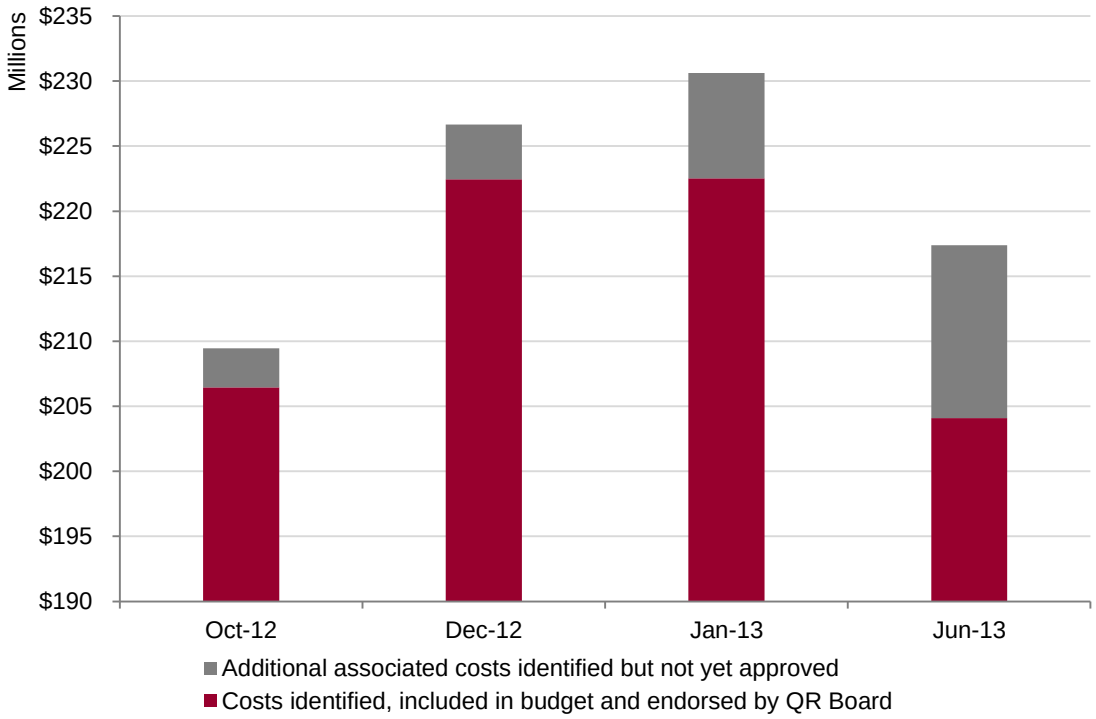


Source: Queensland Audit Office

From September 2010 to October 2012, QR knew of additional costs of up to $115 million for maintenance and en route facilities, foreign exchange costs and QR engineering and staff project management office costs which were not funded.

Despite earlier reporting that estimated costs were higher than investment approvals in 2012, Figure 3D shows that this trend continued through to June 2013 where QR has not included its known costs in the Board approved project cost.

Figure 3D
Sunlander 14 costs (revised design)



Source: Queensland Audit Office

From June 2012 to June 2013, QR knew of further unbudgeted additional costs of $13 million (additional spare parts, internal resources, engineering and staff project management office costs) which did not have investment approval.

The decision to de-scope avoided some of these costs. It remains that the $225 million limit included costs that would be incurred irrespective of the length of the trains, and that the Board had already approved. The only significant costs avoided were for the maintenance facility—either $20 million for a transitional facility, or around $50 million for a new facility—and *en route* provisioning of up to $15 million.

The appropriate comparative analysis is between the capital costs incurred and what was obtained; and the capital costs that were avoided and what was foregone.

In this regard, the decision to de-scope meant QR procured three 9-car trains for just $22.5 million less than the cost of procuring the original three 14-car sets.

QR will now get 10 new cars built—15 fewer than that contracted—but pay 88 per cent of the originally contracted price. The average contracted cost per car (being power cars and carriages) as a result has increased from $4.5 million to $6.5 million.

Figure 3E shows that the average cost per carriage (excluding power cars) under the original contract of $5.27 million is a reasonable price when compared to industry benchmarks. The average cost per carriage delivered has increased to $10.1 million, or by 91 per cent under the revised project scope.

Figure 3E
Benchmarking of the costs per carriage

Source	Cost per carriage $ m
Average cost per carriage to complete original scope (our estimate)	5.27
Contractor quote for two sleeper carriages	5.70
Expert advice of benchmark cost #1	6.00
Expert advice of benchmark cost #2	5.39
Average cost per carriage based on revised scope	10.10

Source: Queensland Audit Office

4 Governance

In brief

Background

Governance entails setting direction for an organisation, securing performance, ensuring compliance, managing stakeholders and addressing risk. In the case of Queensland Rail (QR), these responsibilities sit primarily with the QR Board and also with the Department of Transport and Main Roads (DTMR) as the purchaser of passenger rail transport services.

Conclusions

The QR Board did not oversee the Sunlander 14 project effectively.

Communication was also ineffective: between QR management and the QR Board; between QR and DTMR and by them to the government. QR and DTMR did not provide full and frank advice to the government.

Without a strategic fleet plan to support whole of life asset management for the Traveltrain program, the shortcomings from the Sunlander project may be repeated.

Since the Board's investigation into the project, 14 key actions to address the systematic failures identified are at various stages of completion. The newly established project governance framework and other reforms being implemented should strengthen QR's control over major projects.

Key findings

- The high turnover of both Board members and executive leadership positions in QR impacted on QR's ability to implement consistent governance practices over the life of the Sunlander 14 project.
- QR Board records held by Aurizon for the period from January 2009 to July 2010 confirmed that the Traveltrain renewal / Sunlander 14 project was not discussed or minuted.
- Project roles and responsibilities within QR and between QR and DTMR were poorly defined.
- QR staff responsible for Traveltrain maintenance who had the required experience and capabilities were excluded from the project planning phase.
- QR's inability to establish certainty about the future of the Westlander and Inlander services, meant it missed an opportunity to benefit from updating and rationalising its Traveltrain fleet
- There is no comprehensive strategic fleet plan to support whole of life asset management of the Traveltrain program and the services it delivers. Such a plan would facilitate an effective governance model for all asset management activities for the Traveltrain fleet.
- In 2013, the QR Board undertook an internal review of the Sunlander 14 project procurement processes which identified systematic project and governance failures and has implemented an action plan to address these systematic failures. A project governance framework has been implemented in broad alignment with the Queensland Government Project Assurance Framework.

Recommendations

It is recommended that Queensland Rail:

2. implements an integrated strategic fleet asset management plan for the Traveltrain program

3. implements independent assurance over the newly implemented project management framework and on individual projects.

4.1 Background

Corporate governance is the framework of rules, relationships, systems and processes through which corporations exercise and control authority. Effective corporate governance provides the mechanisms which hold management and decision makers to account.

In the context of investment and project management, this includes:

- a board's responsibility to:
  - contribute to and approve the corporate strategy and performance objectives management develops
  - invest in commercially viable projects within the core business activities, as agreed with the responsible Ministers
  - advise responsible Ministers of any planned projects with longer term and strategic implications
  - inform responsible Ministers so they may evaluate proposed investments effectively
  - inform responsible Ministers on project progress to facilitate post approval monitoring
  - approve and monitor the progress of major capital expenditure
- senior executives' responsibility to supply a board with information in the appropriate form, time frame and quality so the board can discharge its duties effectively
- a company secretary's accountability to a Board to coordinate timely completion and despatch of Board materials.

In this chapter, we consider the effectiveness of Board governance, project governance and corrective action Queensland Rail (QR) took or proposed for the Sunlander 14 project.

4.2 Conclusions

Both QR Board governance and project governance failed in the Sunlander 14 project. Poor communication, and subsequent poor decisions characterise the entire project.

QR's ability to achieve its organisational goals depends on its ability to procure relevant infrastructure at the right time. The links between the service need, the fleet strategy and the projects required to deliver the strategy are missing, with the asset management plan focused on maintaining existing assets, rather than taking a more strategic, long term view.

The QR Board acted quickly to investigate the project fully once it became aware of the need to write off part of its capital investment. This investigation into the Sunlander 14 project led the QR Board to approve 14 key actions to address the systematic failures identified. Progress in completing the corrective actions is steady and QR has implemented a project governance framework that aligns with the Queensland Government Project Assurance Framework (PAF). QR continues to make additional reforms to strengthen existing governance procedures for major projects.

4.3 Board governance

The QR Board did not oversee the Sunlander 14 project effectively during project inception and up to the decision to de-scope.

At the start of the project, three organisational factors contributed to the QR Board failing to discharge key responsibilities effectively. These involved QR management providing insufficient information to the QR Board; the Sunlander 14 project occurring during a period of significant corporate change for QR; and the complicated relationship between QR and DTMR.

The QR Board's obligation to inform and right to be informed

QR management did not pass on key information relevant to the project to the QR Board, contrary to QR's own investment framework manual. The investment advisory team provided several reports with critical advice about significant investment decisions.

The QR Board did not consider these reports and there is no evidence the Board received:

- one external report DTMR commissioned: the stage gate report in October 2010 provides a summary of the Report and documents QR's adoption but there is no evidence the Board received this report in its entirety
- three internal reports, each raising significant concerns about the project:
  - investment advisory team report from October 2010
  - investment advisory team report from August 2011
  - executive leadership team paper from December 2011.

We found no evidence the QR Board questioned the absence of the reports. Had it been fully informed, or taken action to inform itself of these issues, the QR Board would have been better placed to evaluate the ongoing viability of the project effectively.

As one example: on 26 October 2010, QR contracted to design and manufacture the additional 22 tilt train carriages and three power cars, despite the investment advisory team reporting concerns that:

- QR should reconsider an opportunity to go to market, given that QR had procured a 12-month extension to the life of the M-series carriages in September 2010.
- Project assumptions, such as passenger modelling, remained untested and had not been supported by market research. The CBRC submission said QR had a strong view the proposal would increase international tourist travel significantly on the enhanced Cairns tilt train service; this, too, was untested.
- The CBRC submission did not include the need for additional capital components (such as the need for a maintenance facility).

Had the QR Board been fully informed, its ability to deliver on its own obligation to inform others, such as DTMR and the shareholding Ministers, would have improved. The shareholding Ministers were not made aware of:

- the full extent of associated costs. The project lacked a holistic approach to cost throughout its life. Although the discrepancy between approved costs and known costs decreased after the de-scope, QR did not address this issue fully—for example, the costs QR provided in its request for shareholding Ministers to approve the reduced scope excluded $13.3 million of costs QR knew.
- the inability of Queensland Rail and DTMR to agree on the details of the maintenance facility.

Furthermore, there was no formal communication between the strategic control group and the QR Board.

QR's own investigation of the Sunlander 14 project found the attitude when advising government was to request funding in a staged process, instead of disclosing all anticipated costs up front, given QR's expectation that responsible Ministers would reject a funding request which included all costs.

QR's historical practice, when it identified additional costs, was to obtain approval for extra funding via the annual transport service contract funding, instead of applying for funding by revising the approved Sunlander funding. This practice encouraged the attitude not to advise all costs up front. QR's strategic control group meeting minutes from November 2011 refer to removing cost estimates from DTMR's CBRC submission.

High turnover of key governance positions

A major contributor to the loss of corporate knowledge and inability for management and the QR Board to oversee the Sunlander 14 project effectively was the high turnover of positions with critical governance responsibilities. Figures 4A illustrates the turnover of key governance positions since the project's inception.

Figure 4A
Turnover of executive management positions over the life of the Sunlander 14 project

Position	Number of changes
QR Chairman	5
QR Chief Executive Officer	5
QR Chief Financial Officer	5
QR Internal Audit Manager	4
DTMR Director-General	3

Source: Queensland Audit Office

There have been 32 separate directors serve on the boards of Queensland Rail Limited and QR Limited since the Sunlander 14 project started in November 2009, including five Chairmen.

Record keeping

On 1 July 2010, when QR National (later rebranded as Aurizon) separated from Queensland Rail Ltd (QR), a number of Board members moved to QR National, resulting in a loss of extensive corporate knowledge on the QR Board.

There was no induction program to help incoming QR Board members make informed decisions regarding Sunlander 14 and the associated projects.

The absence of an induction program for new Board members meant they were not well placed to hold management to account, being unfamiliar with QR's policies, procedures, governing regulations and relationship with DTMR.

In the separation, QR National (now Aurizon) took ownership of corporate documents relating to Queensland Rail Limited, including Board submissions and Board minutes for the period leading up to and shortly after 1 July 2010.

QR advised that, despite not having physical access to the corporate documents, it had an arrangement to request documents from QR National / Aurizon as required. Aurizon has confirmed that Board documents between January 2009 and June 2010 made no mention of Sunlander 14 or Traveltrain.

In the absence of information on this project being presented to the QR Board, and with no members preceding the separation remaining on the Board, the Board members could not make informed decisions on Sunlander 14 and the associated projects.

4.4 Project governance

QR did not govern the Sunlander 14 project well from the outset.

We identified failings in initial governance arrangements established to manage the project:

- QR did not document, seek approval from or communicate to all relevant stakeholders, the full cost of the project.
- Both QR and DTMR failed to inform the government of funding risks, understanding these to be mitigated by the transport service contract.
- QR defined roles and responsibilities poorly.
- QR resourced the project inappropriately, allocating inadequate skills and expertise to the project and excluding staff with the required experience and capabilities. QR failed to capitalise on its staff with extensive qualifications and capabilities to manage the project; for example, QR's facilities manager, responsible for all maintenance facilities, was substantially excluded from the project team.
- The project team had an inconsistent vision and conflicting views.
- QR did not forward plan or anticipate and prepare for issues and changes.
- QR adopted a siloed approach to managing the project, with business units operating independently of one another.

These flaws delayed decisions and approvals:

- Had QR identified and addressed earlier the need to revise the scope or address additional funding requirements, it may have reduced or avoided the $54 million write off.
- QR allowed the contractor's offer to lapse twice, once resulting in a price increase of $250 000.
- By allowing the contractor's first offer to lapse, QR delayed the agreed delivery date of the trains, increasing the gap between the retirement of the M-series carriages and the launch of the new trains.

QR further jeopardised the project by failing to meet deadlines to advise the contractor of the details of the revised scope. The contractor advised QR that this delay was affecting its stakeholder management and its ability to deliver the project on time and risking the contractor's reputation.

In September 2010, QR had approved a budget of $195 million for the project, but knew of further costs between $93 million and $103.9 million. In comparing the total planned expenditure to the "reasonable"budget, QR should have reviewed the project scope before entering into a contract with the builder in October 2010.

QR and DTMR did not follow up general advice on current project management matters. The consultant recommended developing a governance plan and issued a reminder of a New South Wales Auditor-General's review of the Millennium Train Project which highlighted that, for a large magnitude rollingstock purchase project, considerable audit and governance review effort is desirable.

4.5 Strategic asset management

QR does not have a comprehensive, strategic fleet plan for Traveltrain that links the service need, the fleet strategy and the projects required to deliver the strategy. The existing asset management plan focuses on maintaining existing assets, rather than taking a more strategic, long term view.

As part of the broader analysis of the Traveltrain program, the 2009 consultant's report to DTMR proposed hybrid train configurations that would integrate tilt trains into the *Spirit of the Outback* and Inlander services. This would update and rationalise the fleet and customise maintenance facilities to accommodate better fixed-consist trains, like the Cairns tilt trains.

QR did not take up this opportunity to streamline the Traveltrain fleet, and thereby potentially save costs through fleet rationalisation and greater efficiencies. QR attributed this to ongoing uncertainty if Westlander and Inlander services would continue and their frequency and capacity if so.

The two existing tilt trains first came into service in 2003. Although QR had prepared a fleet plan for the Traveltrain consist and outlined timing and cost of planned overhauls in a position paper in 2006, neither document specified the timing and estimated cost of the major overhauls of the Cairns tilt train consist.

QR's fleet plan focuses more on routine maintenance, while the 2006 paper on overhauls did not include the Cairns tilt train. Without this information, we cannot assess whether the overhauls were performed earlier than necessary or at a higher cost than necessary.

QR is reviewing product strategies for its long distance passenger rail services and tourist trains. Asset management plans should support these product strategies to articulate asset management and provide a holistic view of the projects to procure or construct the assets needed.

Until QR implements an integrated strategy for Traveltrain assets and products, QR risks reliving the issues experienced during the Sunlander 14 project as QR retires carriages and locomotives used to deliver the Inlander, Westlander and Spirit of the Outback and decides about their replacement.

4.6 Queensland Rail's remedial action

4.6.1 Sunlander 14

In November 2013, QR conducted its own investigation into the failings of the Sunlander 14 project. This investigation identified corporate governance failings in the project; namely, the process by which the shareholding Ministers committed to the project, the failure to advise the QR Board fully and the QR Board's failure to carry out its role effectively.

The QR Board approved 14 key actions to respond to its investigation findings and address the systematic failures. These actions include:

- review all procurement policies
- undertake a governance and probity audit of significant projects
- develop an assurance process to evaluate the skills and experience of project teams
- clarify roles and responsibilities around project governance and delivery between QR and DTMR
- design and implement a governance framework, a project management plan and conduct internal training.

Although QR's review of all procurement policies concluded the policies were appropriate, the challenge will be for QR to implement and monitor an effective quality assurance program to ensure practice complies with policies.

QR is currently establishing roles and responsibilities with DTMR on a major project and is also working to define aspects of this relationship better in managing its obligations under the transport service contract.

The QR Board's action plan does not address succession planning for new Board members and the establishment of a comprehensive, documented induction program for Board members.
QR continues to evaluate the risks the action plan identifies and to reduce risks to an acceptable level. QR has not updated the current action plan to reflect this commitment.

QR is making steady progress in completing the 14 corrective actions and has improved management reporting to the QR Board on the status of major projects. QR is conducting follow up and status reporting but does not assess progress to complete the action items for the CEO, executive leadership team and internal audit manager. The absence of a comprehensive follow up and reporting process for action plan items increases the risk that QR will not address actions in a timely manner or may not address them at all.

Project management framework

One of the actions the Sunlander 14 project action plan assigned to the Executive General Manager Projects, was to 'engage external providers to develop and implement a governance framework for significant operational and capital expenditure in Queensland Rail, in broad alignment with the Queensland Government Project Assurance Framework'.

This action has been completed and QR engaged consultants to assess the existing governance and project management frameworks. As a result, QR has adopted DTMR's project management methodology (OnQ).

The project management framework the external consultants developed explains how to use OnQ in a QR context. A critical component of this project is the establishment of the 'senior responsible owner' role, being a business representative who keeps a project on track to deliver its strategic outcomes. QR has converted all projects to the new methodology and the executive leadership team has engaged in senior responsible owner training.

In concurrence with the new project management framework, QR is strengthening governance and asset planning processes. The strategy team is working with QR management and the QR Board to update the organisational strategy; and with the business units to update and expand upon existing product strategies. The Traveltrain product strategy is currently in draft form. Each product strategy should identify the assets required to deliver the strategy, and as such, link directly to a strategic asset management plan. QR is yet to complete this for Traveltrain. The asset management plan will then identify gaps in the existing assets available and document the projects required to deliver the assets necessary to achieve the product plan.

Other QR reforms

QR has implemented other reforms to address the deficiencies it identified in the Sunlander 14 project. These reforms tighten existing governance procedures and introduce new governance procedures so major projects are more disciplined and structured from inception to completion; and so the full cost and anticipated benefit of a project is clearly understood.

QR's program of reform is a significant commitment towards ensuring that lessons are learnt from the Sunlander 14 project.

4.7 Recommendations

It is recommended that Queensland Rail:

2. **implements an integrated strategic fleet asset management plan for the Traveltrain program**
3. **implements independent assurance over the newly implemented project management framework and on individual projects.**

Appendices

Appendix A—Comments

In accordance with section 64 of the *Auditor-General Act 2009*, a copy of this report was provided to Queensland Rail and the Department of Transport and Main Roads with a request for comment.

Responsibility for the accuracy, fairness and balance of the comments rests with the head of these agencies.

Comments received from Director-General, Department of Transport and Main Roads

Queensland Government

Our ref DG28902
Your ref 11144

Office of the **Director-General**

Department of

25 November 2014

Mr Andrew Greaves
Auditor-General
Queensland Audit Office
PO Box 15396
City East Qld 4002

Dear Mr Greaves

Thank you for sharing a copy of the draft report *Traveltrain Renewal: Sunlander 14* for comment. While the recommendations in the report are for Queensland Rail to implement, the Department of Transport and Main Roads (TMR) look forward to working closely with Queensland Rail on the recommendations.

I believe it is appropriate to advise you that TMR have made a number of changes since 2012 which have addressed governance and management of capital delivery issues between this department and Queensland Rail. These include:

- A new Transport Service Contract for rail services by Queensland Rail, which commenced in July 2013. This included detailed obligations with regard to capital projects which continue to be refined to deliver the right outcomes for the State.
- A restructure within TMR now sees all rail contract and capital management for Queensland Rail managed within the one Division (TransLink) rather than across multiple divisions.
- Major rail projects undertaken recently, such as New Generation Rollingstock (NGR) and Moreton Bay Rail Link (MBRL), are being led by TMR rather than Queensland Rail.
- This has resulted in robust procurement processes and improved clarity of governance and accountabilities for TMR and Queensland Rail.

NGR utilised a Public Private Partnership model, including a procurement phase led by Projects Queensland. The outcome was a price that was significantly lower when compared to other recent fleet procurements including Sunlander 14. With considerable risk transfer moved from government to the private sector.

MBRL has used competitive tendering to see international and local competition bid for the work which has achieved great savings and innovative solutions for the delivery of the new rail line to Kippa Ring

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Comments receive from Director-General, Department of Transport and Main Roads

Please note a minor point with reference to figure 1C of the report; the Savannahlander service is not operated by Queensland Rail but is provided by a private company.

I am confident that the changes TMR have already implemented, together with the improvements made concurrently by Queensland Rail, will ensure greater rigour around procurement and delivery of major rail projects in future.

Yours sincerely

on behalf of

Neil Scales
Director-General
Department of Transport and Main Roads

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Comments received from Chairman, Queensland Rail

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Our Ref: Chairman

Mr Andrew Greaves
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Dear Mr Greaves

Auditor General's Proposed Report to Parliament - Traveltrain Renewal & Sunlander 14

I refer to your letter dated 5 November 2014 providing a copy of your proposed report to Parliament in relation to Queensland Rail's Traveltrain Renewal Program and Sunlander 14 Project (the Proposed Report).

In your letter, you invited Queensland Rail to provide comments on the Proposed Report within 21 days in accordance with section 64 of the *Auditor General* Act *2009*.

Queensland Rail provides the following comments in relation to the Proposed Report.

Preliminary matters

The comments provided in this letter are provided on behalf of the current Board and senior management of Queensland Rail. It is noted that the events referenced in the Proposed Report span a period exceeding four years and include matters that pre-date the separation of QR National and Queensland Rail in July 2010. Since 2010, there have been many changes in senior management and at Board level at Queensland Rail, as well as a change in government. The vast majority of the personnel involved in the various decisions referenced in the Proposed Report are no longer involved with Queensland Rail. The statutory timeframe for our response, and the confidentiality constraints in the *Auditor General Act*, are such that we are unable to comprehensively respond on behalf of all of those people. It is understood that your office is undertaking a separate consultation process with other affected people in relation to the content of the Proposed Report. We assume you will take any comments they make into account in finalising your report, given their familiarity with the historic events referenced in the Proposed Report.

Factual observations

Queensland Rail has identified a number of factual matters that have been drawn to your attention but which do not appear to have been acknowledged in the finalisation of the Proposed Report. Those matters are set out in Attachment 1.

Comments on Conclusions and Key Findings

In relation to the Conclusions and Key Findings set out in the Proposed Report, Queensland Rail accepts that the project planning, project governance and decision making processes associated with the Sunlander 14 Project were inadequate and that key decision-makers (including the Queensland Rail Board) were not provided with all relevant information in a timely manner. Queensland Rail also accepts that the roles, responsibilities and expectations of the Department of Transport & Main Roads and Queensland Rail were not clearly articulated and managed throughout the project. These factors inhibited timely, effective and

Comments received from Chairman, Queensland Rail

QueenslandRail

comprehensive decision-making in relation to critical aspects of the project and adversely impacted on Queensland Rail's ability to extract full value for money from the transaction. We make the observation that the Board was not adequately informed throughout the project and that the various levels of internal and external oversight in place at Queensland Rail during the life of the project were not able to uncover the issues.

The project governance issues associated with this project were identified by Queensland Rail itself in September 2013 after its officers noticed irregularities in the accounting treatment applied to certain costs associated with the decision to de-scope the project. Upon becoming aware of that information in September 2013, the Board acted immediately to withdraw and correct the audited financial accounts for 2013-14. The Board also commissioned an independent external investigation. Since that time the Board and senior management have implemented major changes and reforms to specifically address the issues that arose in the project and to ensure that a more disciplined, structured and rigorous approach is taken to the planning and implementation of major projects. The Proposed Report acknowledges the extensive reforms that have been implemented at Queensland Rail to address the systemic weaknesses identified in this project. The Board and senior management of Queensland Rail welcome the ongoing valuable input and oversight from the Queensland Audit Office in relation to the implementation of these important reforms.

The changes and reforms implemented by the Board and senior management since September 2013 clearly signify our absolute commitment to ensuring lessons are learnt from the Sunlander 14 project. As you are aware, the changes that have occurred since September 2013 include:

(a) changes to the Board with the appointment of a new Chair of the Board on 1 October 2013 and several new directors (including the appointment of an experienced auditor as a Director on the Board and as Chair of the Board's Audit & Risk Committee on 30 October 2013 and the appointment of an engineer with project management experience as a Director in July 2014);

(b) changes to the Executive Management Team with the appointment of a new Chief Executive Officer in January 2014, a new Chief Financial Officer in March 2014, a new General Counsel & Executive General Manager Governance in March 2014 and a new Executive General Manager Projects in July 2014;

(c) the termination of the employment of the former Chief Management Accountant (who had held the role of Acting Chief Financial Officer at certain relevant times) in February 2014;

(d) reform of the Executive Leadership Team structure to reduce the number of executive leaders from 14 to 6 to ensure greater, and more disciplined, accountability;

(e) the introduction of a new project management framework in mid 2014 in broad alignment with the Queensland Government Project Assurance Framework;

(f) the introduction of a new Board Committee (the Major Projects and Procurement Committee) at the suggestion of the outgoing Deputy Chair to the incoming Chair. The new committee was introduced on 23 October 2013 and formally approved by Responsible Ministers on 1 January 2014. The new committee provides greater oversight of the management of major projects. The committee met on 3 March 2014, 25 June 2014, 24 September 2014 and 25 November 2014;

(g) the completion of a review of procurement policies;

Queensland Rail (ABN 68 598 268 528) and Queensland Rail Limited (ABN 71 132 181 090)

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QueenslandRail

(h) the completion of a review of the skills and experience in the Projects Team;

(i) changes to ensure the participation of the Chief Financial Officer and General Counsel in every Board meeting and every Audit & Risk Committee meeting;

(j) reform of the executive-level Investment Committee to provide oversight and direction for Queensland Rail's Program and Project portfolio. This Committee ensures investments are planned and prioritised in accordance with Queensland Rail's strategic objectives and provides leadership to ensure that program and project investments have effective governance and approval processes and are managed in an efficient and cost effective manner;

(k) reinforcing the open and transparent relationship between Queensland Rail and Queensland Audit Office by re-stating the existing open invitation to the Queensland Audit Office to have its representatives attend the entirety of every meeting of the Board's Audit & Risk Committee. Queensland Audit Office representatives have attended the Board's Audit & Risk Committee meetings on 8 October 2013, 13 November 2013, 28 January 2014, 28 April 2014, 24 June 2014, 19 August 2014 and 28 October 2014;

(l) undertaking a comprehensive review of current key high-risk projects to ensure the respective roles and responsibilities of Queensland Rail and Department of Transport and Main Roads (DTMR) in those projects are clearly delineated and understood;

(m) reform of management reporting practices in relation to major projects to ensure the Board is adequately briefed regarding the status of major projects, the anticipated entire project costs and any key issues or concerns with the project. Executive level certifications are also provided on a monthly basis in relation to major projects to confirm compliance with the revised project management framework and associated risk management practices; and

(n) improvements to the Board training program to include additional information regarding the specific regulatory and governance frameworks applicable to Queensland Rail as a statutory authority.

It should also be noted that KPMG have undertaken an extensive body of work, at the Board's request, to review Queensland Rail's systems and processes and have recommended business improvements and transformation initiatives. Steps have been, and continue to be, taken to implement changes as a result of that work.

The Board and senior management are confident that the reforms implemented since September 2013 address the underlying issues that gave rise to the governance failings on the Sunlander 14 project.

Recommendations

The Proposed Report contains three recommendations.

The first recommendation is that Queensland Rail *"implements for all proposed major capital investments, a total net present cost of ownership which includes all initial and subsequent capital, operating, maintenance and disposal costs based on the most likely mode of operation of the asset, and which identifies the costs of all infrastructure interdependencies and ancillary costs."* Queensland Rail accepts this recommendation and notes that reforms already implemented by the Board and senior management in relation to the project management framework at Queensland Rail include this requirement.

Queensland Rail (ABN 68 598 268 528) and Queensland Rail Limited (ABN 71 132 181 090)

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QueenslandRail

The second recommendation is that Queensland Rail "*implements an integrated strategic fleet asset management plan for the Traveltrain program*". Queensland Rail accepts this recommendation. While the Traveltrain Renewal Program has been in place for some time, it is recognized that further work is required to develop a more comprehensive strategic plan in relation to the Traveltrain products. That work is underway. The strategic direction of the Traveltrain products is part of Queensland Rail's current reform program. Matters as significant as the strategic direction of the Traveltrain services also require approval by Queensland Rail's Responsible Ministers. It is ultimately a policy decision for Queensland Rail's Responsible Ministers as to what level and frequency of passenger train services are provided on the Traveltrain network, given the public benefit in those services being provided even where it is uneconomical to do so.

The third recommendation is that Queensland Rail *"implements independent assurance over the newly implemented project management framework and on individual projects."* Queensland Rail accepts this recommendation. Queensland Rail implemented a new project governance framework earlier this year as part of the reforms initiated by the Board and senior management. The new project management framework aligns with the Queensland Government's Project Assurance Framework and includes adoption of the OnQ project management methodology. Queensland Rail accepts the need to undertake reviews and assurance activities to determine the effectiveness of the new project management framework and is currently in the process of appointing external providers to perform those independent assurance activities.

The Board and senior management of Queensland Rail thank you for the opportunity to provide comments on the Proposed Report. We also take this opportunity to reiterate our strong commitment to continue working collaboratively with Queensland Audit Office to ensure the important reforms referenced in this letter, and the Proposed Report, are embedded and operating effectively within Queensland Rail.

If you require further clarification in relation to any of the comments in this letter, please contact Helen Gluer, Chief Executive Officer.

Yours sincerely

Michael Klug AM
Chairman
Queensland Rail

25 November 2014

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Queensland Rail (ABN 68 598 268 528) and Queensland Rail Limited (ABN 71 132 181 090)

Responses to recommendations

QueenslandRail

Attachment 1- factual matters drawn to the attention of the Auditor General

1. The de-scope decision and $54M write off

The Proposed Report contains an assessment of the 'value' of the de-scoping decision by reference to the fact the write off was required. On page 2 of the Proposed Report, the report states "*while the case to de-scope the project was presented as a cost saving, it too also did not demonstrate that value for money was optimised. It is a false economy to 'save' $50 million when this means writing off over $50 million already spent or committed.*" These statements fail to acknowledge that, **at the time the de-scoping decision was made**, the decision-makers were not aware that the consequence of de-scoping the project would be a write off of $54M. The Proposed Report suggests that the decision makers failed to fulfill their duties to achieve value for money in their decision making but in doing so relies on factual matters that only became apparent after the decision was made.

At the time the de-scope decision was made in October 2012, and at the time when the 14 June 2013 letter was sent to Responsible Ministers, the (then) Board was not aware that a potential consequence of de-scoping was the need to impair $54M of expenditure. Indeed, the contrary view (that no impairment was necessary) was a view held by the Acting CFO by April 2013. It was not until September 2013, when further independent accounting advice was obtained, that it was identified that a write off would in fact be required. When the issue was identified in September 2013, the Board responded immediately by withdrawing the financial accounts and correcting them (as is acknowledged on page 2 of the report). Queensland Rail kept Responsible Ministers advised of these matters during October and November 2013 and formally lodged revised financial accounts (reflecting the $54M write off) in December 2013.

2. Comments regarding Traveltrain strategy

Page 4 of the Proposed Report contains a statement that *"without the external costs cap QR could have extracted greater value for money from its fixed price contract, and also positioned itself better to achieve significant economies of scale and operating efficiencies for the remainder of its traveltrain fleet as they become economically obsolete and require replacement."* Then, page 5 contains a statement that *"a new maintenance facility would make more sense if the Sunlander, Spirit of the Outback and Inlander services had been converted to tilt trains (as had been recommended to DTMR in 2009 by consultants)."*

The basis upon which these conclusions are reached is not clear. Queensland Rail believes that the following matters need to be fully considered in an assessment of these issues:

1. The solution proposed by DTMR's consultants (Halcrow) in 2009 involving conversion of the outback passenger train services to tilt trains was not viable from an engineering perspective unless significant infrastructure upgrades were made to the regional network. By way of example, the tilt trains exceeded the maximum weight rating for numerous bridges on the Longreach line and consequently significant bridge upgrades would be required to allow tilt trains to run on the Spirit of the Outback service.

2. At the time key decisions were being made in relation to Sunlander 14, significant policy decisions by the State regarding the continued frequency and configuration of the outback services were yet to be made.

3. The contractual arrangements with the supplier and the supplier's bargaining position presented significant limitations on Queensland Rail's ability to improve its position under the fixed price contract (as had become evident in relation to negotiations regarding procurement of private sleeper carriages).

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Appendix B—Timeline

Figure B1 illustrates a timeline of the key decisions and associated funding and timeframes of the Sunlander 14 project.

Figure B1
Timeline of key decisions, funding and timeframes of the Sunlander 14 project

Timing	Event description
1999	QR Mayne depot upgraded to accommodate existing Cairns tilt train
2003	Two diesel powered Cairns tilt trains commissioned
2007	QR projects—Sunlander's M-Series cars reach end of life on 31 December 2013
2009	DTMR (then Queensland Transport) commission a consultant's report, 'Traveltrain Rollingstock Review' to assess rollingstock options for the Sunlander, Inlander, Westlander and Spirit of the Outback for configurations of 'like for like', 'hybrid' or 'low cost' Consultants recommend 'hybrid' fleet configuration to replace rollingstock Consultant's report notes Traveltrain maintenance facility at QR's Mayne depot is just long enough to house a complete 9-car tilt train
Nov 09	QR seeks government permission to go to market to replace Sunlander
Jan 10	Stage Gate Process: QR produces capital expenditure concept investment approval request
Mar 10	QR Board approves a project to upgrade the seating in the existing Cairns tilt train fleet to lie flat seating, with a budget of $4 million
Mar 10	QR presents option to government to directly engage a contractor to extend the current tilt train fleet
May 10	QR introduces option of three 14-car Cairns tilt train consists delivering six return services between Brisbane and Cairns per week
June 10	QR is separated from the intrastate rail freight business, QR National (subsequently Aurizon) through the transfer of shares in QR from QR Ltd to the State of Queensland
July 10	QR projects—Sunlander's M-Series cars reach end of life on 31 December 2013
Jul 10	CBRC Decision—approved QR to commence with independent oversight by DTMR urgent negotiations with supplier on the best money for value proposal to replace Sunlander with a tilt train solution CBRC Decision—noted that a future submission will be developed by mid-August 2010 detailing results of negotiations with the sole supplier, consequential impact son on the Traveltrain TSC, indicative options for western rail services, a communication strategy , should a value for money solution be adopted on the North Coast line, funding options, including reprioritisation of DTMR's capital program QR obtain a consultant's report regarding the pricing of the various seating classes on the train

Timing	Event description
Jul 10	DTMR obtain a consultant's report regarding the feasibility of QR's proposal to replace its Traveltrain rollingstock and to review the indicative prices the local supplier offered for value for money The consultant advised DTMR that key QR assumptions were not adequately supported; there were numerous risks with the proposed approach; the project time frame was ambitious; and one quarter of train procurement projects exceeded budgets and time frame expectations
Sep 10	End of useful life estimate of M-series carriages extended to Dec 2014 Stage Gate Process—QR produces capital expenditure prefeasibility investment approval request
Oct 10	CBRC Decision—approved rollingstock procurement with QR to self-fund the capital cost of $192.4 million CBRC Decision—to note that the Minister for Transport will as part of the mid-year budget review process provide further advice on the TravelTrain TSC funding impacts…and infrastructure grants required to support the outcomes of the submission QR enters into fixed-price contract for $189 million with contractor to deliver the new and upgraded rollingstock
Nov 10	Design of Tilt Train and forward ordering of materials commences Contract extended to build an additional power car (now 4 new power cars) The government approved the project
Jun 11	QR Board approves purchase of the automatic train protection (ATP) system for $2.635 million SHM approval for investment is requested by QR Board Work commences on examining the upgrade options for the maintenance facilities at Mayne
Aug 11	SHM approves project to construct three new and refurbished 14-car Sunlander trains IAT initially raise and discuss concerns regarding the budget for the Sunlander 14 project IAT endorse the commitment of additional funds to the Sunlander 14 project
Oct 11	SCG initially raise and discuss concerns regarding the budget for the Sunlander 14 project
Dec 11	ELT Paper presented
Dec 11–Feb 12	QR cost analysis and deliberations of Sunlander 14 project
Dec 11–May 12	QR's estimates maintenance alternatives for Mayne deport range from $10 million to $155 million Traveltrain renewal program project expected minor upgrades to facilities for fuelling, watering and decanting once new Cairns tilt train long distance service schedules and train performance known
Jan 12	SCG workshop is held to consider the scope of the project in light of the ELT paper
Feb 12	Interim Solution to Maintenance of new Sunlander 14 Rollingstock paper prepared and Board paper submission requesting additional funding

Timing	Event description
Mar 12	QR Board writes to SHM requesting additional investment approval for $22.6 million to complete the original Sunlander 14 project
Mar 12	D-G of DTMR advises QR CEO that, due to caretaker conventions, it would be inappropriate for government to consider the request for additional funding
Mar 12	New Traveltrain Renewal Program Manager appointed State election held
May 12	QR Board resubmitted request for additional investment approval to new SHM
May 12	QR position paper prepared by the Senior Manager, Rollingstock Operations Program identifies $74.9 million shortfall in funding Contract signed with seat manufacturer for design and supply of rail beds Letter resent to new SHM requesting consideration of $22.63 million of additional funding Internal Audit commenced at the request of the COO into the effectiveness of the management intervention
Jul 12	QR Board writes to SHM asking to pause additional investment approval while the Sunlander 14 scope was reviewed with the emphasis on the construction of shorter train consists with reduced requirements for enabling capital infrastructure
Jul 12	De-scope options presented to the Board and Letter sent to responsible Ministers requesting 'pause' on request for additional funding Scope review by TRP Program Management Office in conjunction with consultant is commenced
Aug 12	Decision by SCG to reduce the scope of the Sunlander 14 project QR engage in discussions with Contractor regarding review of scope Responsible Ministers acknowledge the request to 'pause' request for additional investment approval Presentation by QR's Travel Network Renewal Program Office to DTMR noted Traveltrain renewal program had developed into 16 projects
Oct 12	QR Board considers and approves de-scoped Sunlander 14 project to delivery of three 9-car consists Contractor provides a quote for the de-scoped option
Nov 12	QR investigates options to accommodate private suites into the scope
Sep–Nov 13	QR Board reviews Sunlander 14 project procurement processes, identifies systematic project and governance failures, develops action plan to respond
Feb 13	Premier and the Minister for Transport and Main Roads announce decision to reduce Sunlander 14 project scope as a saving of 'almost $50 million'
Mar 13	Contractor quotes $12.1 million for private suites
Apr 13	Contractor revises quote for private suites to $11.398 million and Acting CEO provides an update to the Board recommending not to proceed with the inclusion of private sleepers

Timing	Event description
May 13	Queensland Rail Limited ceased as a government owned corporation and became a wholly-owned subsidiary of the Queensland Rail Transit Authority (now known as Queensland Rail or QR), a statutory authority established under the *Queensland Rail Transit Authority Act 2013*
Jun 13	QR Board writes to responsible Ministers to request they endorse a revised project scope and capital investment of $204 million
Oct 13	First refurbished Cairns tilt train (rebranded as the Spirit of Queensland) introduced
Oct 13	KPMG are engaged by QR to provide advice regarding the accounting considerations of the project.
Nov 13	KPMG provides a draft report recommending the write off of Sunlander costs
Nov 13	QR Board approves write off of Sunlander costs
Oct 14	Second (Spirit of Queensland) tilt train introduced
Dec 14	Scheduled date for introduction of third tilt train
Dec 14	Scheduled date that the Sunlander will be retired from service

Source: Queensland Audit Office

Appendix C—Glossary

Figure C1
Glossary

Terms	Definition
Automatic train protection (ATP)	An electronic train control system which will apply the brakes when a train is travelling too fast or has passed a red signal.
Cabinet Review Budget Committee (CBCR)	A core Standing Committee that has a primary role of considering matters with financial or budgetary implications for the government.
Cairns Tilt Train (CTT)	A diesel engine powered train that uses tilt technology to lean the passenger carriages of the train into curves. The CTT was launched in 2003 and serviced the Brisbane-Cairns route. It consisted of five sitter carriages a baggage car and a lounge car.
Car	Carriage or power car.
Consist	A group of rollingstock that make up a train.
Decanting	The emptying of effluent and refuse from trains.
Decoupling	The process of separating or uncoupling train carriages.
Department of Main Roads and Transport (DTMR)	The Queensland department responsible for delivering an integrated, safe, efficient and reliable transport system for Queensland.
De-scope	Remove or reduce the original scope of works.
Disability Discrimination Act (DDA)	Commonwealth legislation which provides protection against discrimination based on disability.
Government Owned Corporation (GOC)	A government entity that is established as a corporation under an Act or the Corporations Act and declared by regulation to be a GOC.
Infotainment	A hardware product built into train seats that includes information-based media content or programming that also includes entertainment content.
Investment Advisory Team (IAT)	The team which, at the time of the project, oversaw and monitored the investment process across Queensland Rail. This included processes for investments both above and below Executive Leadership Team (ELT) thresholds for each business function. IAT facilitated independent review and endorsement of investments.
Load	Measures the capacity utilisation of public transport services and is generally used to assess how efficiently a transport provider "fills seats".

Terms	Definition
Net Present Cost (NPC)	The total cost of a project after taking into account the time value of money.
Net Present Value (NPV)	The sum of the present values of individual cash flows. NPV is a standard method for using the time value of money to appraise long term projects. NPV compares the present value of money today to the present value of money in the future, taking inflation and returns into account.
Outturn	Total costs incurred to complete the project or construct an asset.
PAF	The Project Assurance Framework is the foundation for ensuring that project management is undertaken effectively across Queensland Government agencies. It aims to deliver value for money from the significant investment in infrastructure projects.
Power car	Drives the train and supplies power to carriages.
Public Private Partnership (PPP)	An infrastructure procurement method with the aim of delivering improved services and better value for money primarily through appropriate risk transfer, encouraging innovation, greater asset utilisation and an integrated whole-of-life management, underpinned by private financing.
PWD	A carriage that provides access to passengers with a disability.
Railbed	Airline style lie flat seat.
Rollingstock	Generic term used for trains, power cars, carriages.
shareholding Ministers (SHM)	The GOC Minister and the Minister of the portfolio to which the GOC belongs.
Shunting	Is the process of sorting items of rolling stock into complete train sets or consists, or the reverse.
Sitter	A carriage that has seating only.
Strategic Control Group (SCG)	Business owners of the Traveltrain Renewal Program. Oversee and monitor the progress of the program, with emphasis on program scope, quality, cost and issues management, value for money and fulfilment of the approved program brief and objectives.
Sunlander 14	The project to replace the capacity provided on the Brisbane—Cairns route by the Sunlander service (two consists providing a capacity of 612 beds and 2,118 seats between Brisbane and Cairns every week).
Traveltrain	Queensland's network of seven long range passenger services and three tourist trains.
Traveltrain Renewal Program (TRP)	The program formed to examine all options to ensure that minimum Traveltrain service requirements are met. The program was intended to provide the governance framework to coordinate the running of multiple projects.
TSC	Transport Service contract between QR and DTMR.

Source: Queensland Audit Office

Auditor-General Reports to Parliament

Reports tabled in 2014–15

Number	Title	Date tabled in Legislative Assembly
1.	Internal control systems 2013–14	July 2014
2.	Hospital infrastructure projects	October 2014
3.	Emergency department performance reporting	October 2014
4.	Results of audit: State public sector entities for 2013–14	November 2014
5.	Results of audit: Hospital and Health Service entities 2013–14	November 2014
6.	Results of audit: Public non-financial corporations	November 2014
7.	Results of audit: Queensland state government financial statements 2013–14	December 2014
8.	Traveltrain renewal: Sunlander 14	December 2014

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