

Reference: 20180416

9<sup>th</sup> November 2018



Dear 

Thank you for your Official Information Act request, received on 11 October 2018. You requested the following:

*“... a copy of the following briefing: T2018/1002 “Light Rail” provided to Phil Twyford.”*

### Information Being Released

Please find enclosed the following documents:

Item	Date	Document Description	Decision
1.	16 April 2018	Light Rail	Release in part

I have decided to release the relevant parts of the documents listed above, subject to information being withheld under one or more of the following sections of the Official Information Act, as applicable:

- personal contact details of officials, under section 9(2)(a) – to protect the privacy of natural persons, including that of deceased natural persons
- advice still under consideration, section 9(2)(f)(iv) – to maintain the current constitutional conventions protecting the confidentiality of advice tendered by Ministers and officials
- names and contact details of junior officials and certain sensitive advice, under section 9(2)(g)(i) – to maintain the effective conduct of public affairs through the free and frank expression of opinions, and
- direct dial phone numbers of officials, under section 9(2)(k) – to prevent the disclosure of information for improper gain or improper advantage.

Direct dial phone numbers of officials have been redacted under section 9(2)(k) in order to reduce the possibility of staff being exposed to phishing and other scams. This

is because information released under the OIA may end up in the public domain, for example, on websites including Treasury's website.

In making my decision, I have considered the public interest considerations in section 9(1) of the Official Information Act.

Please note that this letter (with your personal details removed) and enclosed documents may be published on the Treasury website.

This reply addresses the information you requested. You have the right to ask the Ombudsman to investigate and review my decision.

Yours sincerely

David Taylor  
**Manager, National Infrastructure Unit**

## Treasury Report: Light Rail

<b>Date:</b>	16 April 2018	<b>Report No:</b>	T2018/1002
		<b>File Number:</b>	SH-8-8-1

### Action Sought

	Action Sought	Deadline
Minister of Finance (Hon Grant Robertson)	<p><b>Recommend</b> to Cabinet that it invite the Minister of Transport to consider alternative technologies for Mass Transit vehicles.</p> <p><b>Refer</b> a copy to the Ministers of Transport and for Infrastructure.</p>	Ahead of the CBC meeting on 24 April 2018

### Contact for Telephone Discussion (if required)

Name	Position	Telephone	1st Contact
Dieter Katz	Principal Advisor, National Infrastructure Unit	s9(2)(k)	s9(2)(a) (mob) ✓
David Taylor	Manager, National Infrastructure Unit		N/A (mob)

### Actions for the Minister's Office Staff (if required)

Refer a copy to the Ministers of Transport and for Infrastructure.  
Return the signed report to Treasury.

Note any feedback on the quality of the report

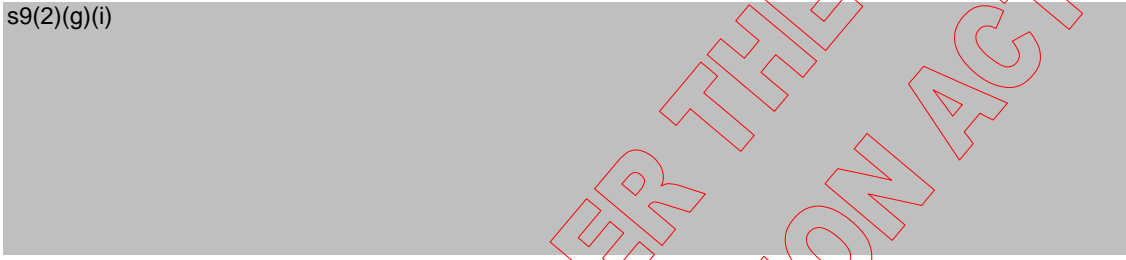
**Enclosure:** No

## Treasury Report: Light Rail

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### Purpose of Report

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1. This report addresses a draft Cabinet paper that the Minister of Transport has circulated and that is intended to be considered by the Cabinet Business Committee on 24 April titled "Proposed approach for Auckland's Rapid Transit network programme".
2. s9(2)(g)(i) 
3. This report also comments on an unsolicited proposal from the NZ Super Fund to undertake and finance the Light Rail project in a manner similar to a Public Private Partnership (PPP).

### Analysis

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4. The Minister of Transport is asking Cabinet to "agree that the city-to-airport light rail transit be prioritised and delivered on an accelerated schedule", at a cost of some \$4 billion, to be funded out of the National Land Transport Fund. He has asked NZTA to begin market soundings for both the construction works and for the procurement of rolling stock.
5. s9(2)(g)(i) 
6. A business case is essentially a plan that sets out the:
  - Strategic case (i.e. the intervention logic)
  - economic case (i.e. consideration of alternative options and whether the preferred option has benefits that exceed the costs)
  - commercial case (i.e. a plan for how it is to be procured)
  - financial case (i.e. whether the project is affordable), and
  - management case (i.e. a management plan that will ensure the success of the project).

### Risks

7. A well-developed business plan provides assurance that the project will not end up in failure. Business cases have been put together by Auckland Transport, but we consider that these should be updated to reflect
  - A new procurer (NZTA); and

- the Government's broader urban development objectives.
8. This is one of the biggest projects New Zealand has seen and extremely complex, given that it is to be built through the middle of some of the busiest streets in Auckland. It entails digging up the streets to a considerable depth, causing major disruptions to traffic and to businesses. To illustrate the possible risks, we note that construction of the Edinburgh light rail suffered major time and money overruns, eventually taking 6 years to build and costing more than twice as much as initial estimates.
  9. Given the size of the project, the fiscal risks and the build and operational challenges, we consider a strong examination of the implementation choices is essential.

#### *Opportunities*

10. At the same time, the development of a business plan can reveal opportunities to find the best option to meet the Government's transport and urban development objectives and provide value for money.
11. For example, there have been developments with optical guidance systems that are significantly less expensive and disruptive to install than laying rail tracks in roads. This technology could potentially save between 50-80% of the total cost (i.e. \$2-3 billion). We would expect a business case analysis to determine whether those savings are possible and whether the technology meets the Government's broader objectives.
12. The Ministry of Transport and NZTA have previously recommended the development of a business case and the exploration of more advanced technologies.
13. The appendix to this report sets out one development we are aware of that serves to illustrate the opportunities of undertaking a business case for mass transit between the Auckland CBD and Auckland Airport via Mt Roskill.

#### *PPP*

14. Ministers have received an unsolicited proposal from NZ Super Fund (NZSF) to undertake the light rail project under an agreement to finance, construct, maintain and operate the project. The proposal shares many characteristics of a PPP (although they call it a Public-Public Investment, because NZSF is not part of the private sector, notwithstanding it will require significant co-investment from foreign funds).

15. s9(2)(f)(iv)

16.

17.

s9(2)(f)(iv)

18. We consider that this proposal should be addressed in the draft Cabinet paper. We will work with the Ministry of Transport to draft the relevant section.

RELEASED UNDER THE  
OFFICIAL INFORMATION ACT

## Recommended Action

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We recommend that:

### Either

- a Cabinet **invite** the Minister of Transport to ask NZTA to explore a range of solutions as part of a business case process before, or as part of, the market soundings that the Minister has asked NZTA to undertake.

### Or

- b Before agreeing to the project, Cabinet **invite** the Minister of Transport to report back to Cabinet with a comprehensive business case that
  - i. Analyses opportunities for more cost effective solutions;
  - ii. Sets out how the various implementation risks will be managed.

- c **Refer** a copy to the Minister of Transport.

*Agree/disagree.*

- d **Refer** a copy to the Minister for Infrastructure.

*Agree/disagree.*

David Taylor  
**Manager, National Infrastructure Unit**

Hon Grant Robertson  
**Minister of Finance**

Hon Shane Jones  
**Minister for Infrastructure**

## Appendix

To illustrate the potential opportunities, we note a light rail solution being developed by the China Railway Rolling Stock Corporation (CRRC). This solution, named Autonomous-Rail Rapid Transit (ART), combines a light rail vehicle with road wheels, high passenger capacity and an optical guidance system. Optical guidance systems have been in commercial use in several European cities, for example in Rouen, France, for over 15 years. It is used there principally for hands-free precision docking against station platforms. We understand that the intention is for the ART system to use optical guidance throughout the vehicles' journey, with the potential to travel up to 70 km/h.

The ART system is still in development and will be trialled in China in a city environment commencing this month. It has the potential to offer a ride quality that is as good as, or even better than, the ride quality of conventional light rail. Its major advantage is that it enables the vehicle to run on ordinary roads by following distinctive painted markings (see pictures below), thereby avoiding the cost of building rails and the major disruption this causes to street life and to businesses along the route. It also avoids the high costs should a light rail route require adjusting or expanding in future. However, it would benefit from some investment in smoother and stronger road surfaces.

Other advantages include:

- It avoids the risk of cyclists getting their wheels caught in the rails. In Edinburgh this has already caused at least one fatality (there have been similar, though not fatal, incidents in Wynyard, Auckland)
- A breakdown by a vehicle is not as disruptive, because other following vehicles are able to switch to manual and steer around the broken-down vehicle, or even down another street, and
- Routes can be adjusted without the cost of having to dig up the road and lay new rails
- Greater ability to mix all-stops and express services, as vehicles can overtake each other more easily.

## Examples of Other Mass Transit Technologies

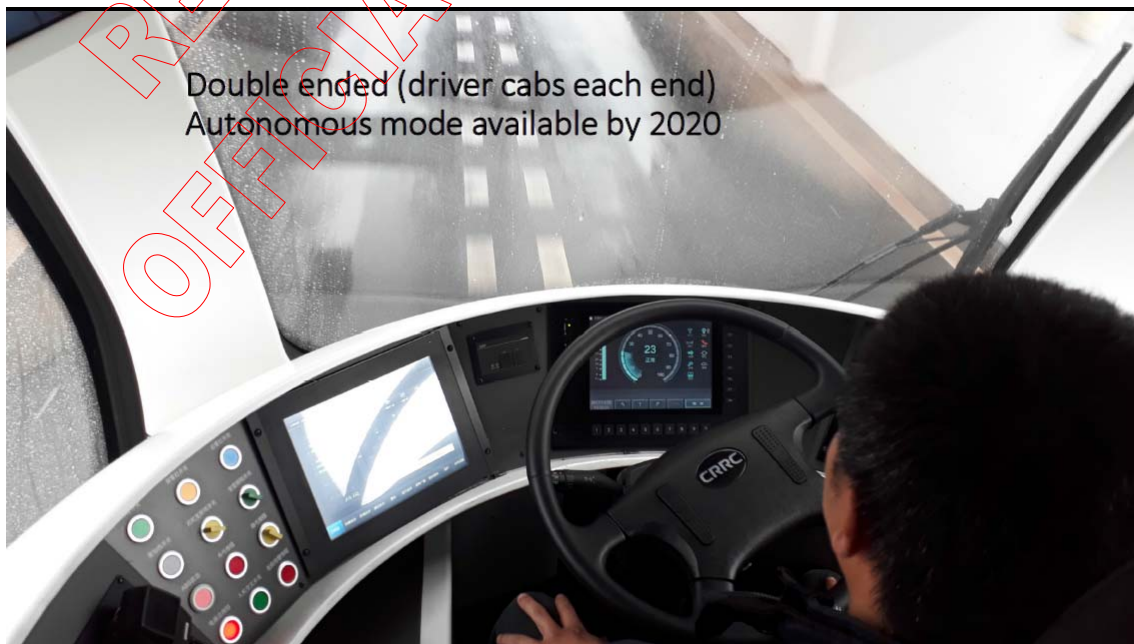


Autonomous rail rapid transit vehicles look like light rail.





The vehicles have high passenger capacity.



Double ended (driver cabs each end)  
Autonomous mode available by 2020

The vehicles do not need to be turned around like buses.

Central platform for ART along Huashan Rd  
(Zhuzhou)



The platforms would need to be built...



Will run on Zhuzhou streets by Feb-2018  
Can run on 'normal' pavement

...but the optical guidance 'tracks' can be built into existing infrastructure at less cost than laying rail tracks.