

Long-term Plan Transport Proposal

29 October 2014

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Introduction

The Auckland Plan was adopted by Auckland Council in 2012. It sets out a 30-year strategy to respond to regional growth that covers housing needs, the economy, environment, arts and culture, Maori, sport, social, heritage and infrastructure. The strategy also recognises the critical role that transport plays in shaping our city. This proposal presents two transport budget options: one that remains within current revenue streams or a second budget option that would introduce alternative funding pathways to raise the \$12 billion needed to build the enhanced Auckland Plan transport network Aucklanders have said they want.

The Two Networks

A higher level of transport investment is required to address current issues and respond to future growth. In preparation for the Long-term Plan (2015-2025), two alternative investment levels are being proposed as part of the Mayoral Proposal. These two options are referred to as the Basic Transport Network (no alternative funding in place) and the Auckland Plan Transport Network (with alternative funding). These networks are the result of work by Auckland Council, Auckland Transport and NZTA to optimise and prioritise transport investment. The Auckland Plan Transport Network is designed to meet the Auckland Plan's objectives.

To accommodate funding constraints from existing sources, Auckland Transport (AT) would need to focus only on the highest-priority projects and delay approximately \$2.3 billion worth of new capital projects and \$1.1 billion of renewals until after 2025. Investment in operating areas, particularly public transport, would also be constrained to 2016 levels.

The **Basic Transport Network** is what can be delivered with this level of funding. The higher investment of the Auckland Plan Transport Network provides for significantly better performance of the transport system.

The Basic Transport Network only includes those projects available with funding remaining at current levels. This network includes progressing key public transport projects but otherwise limits public transport services to 2016 levels and provides minimal improvements for local and arterial roads, walking and cycling facilities and roads to service key population growth areas. It also defers new capital works and renewal of infrastructure.

The **Auckland Plan Transport Network** includes all the projects identified in the Auckland Plan, optimised to meet strategic directions for transport and provide best value for money. This network is designed to meet the targets and aspirations of the Auckland Plan, for example, providing public transport services that meet demand and optimise performance, completion of the regional cycle network and major improvements to the arterial road network. The Auckland Plan Transport Network provides strong economic benefits compared to the Basic Transport Network. With benefits exceeding costs there is a sound economic justification for the higher level of investment.

The key components of both networks are summarised below and in detail in the appendix. The details of the transport investment programme will be finalised through consultation on the Regional Land Transport Plan, which forms the Auckland Transport component of the Auckland Council Long-term Plan (2015-2025).

The main elements of the two networks are:

- The State Highway programme is very similar for both networks. State Highways are funded 100 per cent through the National Land Transport Fund and are not reliant on rates or other local funding.
- The Basic Transport Network's high priority public transport projects will proceed but, once they are completed, very few improvements will take place. Service levels will only increase to relieve severe overcrowding.
- The Auckland Plan Transport Network will connect Auckland, metropolitan centres and the city centre through Rapid Transit (either rail or rapid bus services) and service frequencies, passenger facilities and bus priorities will all be significantly improved.
- Arterial road improvements in the Basic Transport Network will be limited to the Mill Road project and a modest provision for other arterial road improvements. The Auckland Plan Transport Network includes approximately \$1 billion in additional arterial improvements over the period to 2045.
- Safety improvements will continue in the Basic Transport Network but operational improvements, route optimisation, intersection upgrades and intelligent transport system initiatives will be limited.
- In the Basic Transport Network the Auckland Cycling Network will be only 70 per cent complete by 2045 and other walking and cycling initiatives will be very limited.
- Maintenance and renewals in the Basic Transport Network will be funded at 75 per cent of the desirable levels. Some assets are likely to fall into "very poor" condition.
- The Basic Transport Network will fund only 40 per cent of the desired transport investment to planned growth areas in the southern area (Pukekohe/Paerata/Drury); the Northwest (Kumeu/Huapai/Whenuapai) and the north (Warkworth and Silverdale/Dairy Flat).

Table 1.

		FIRST DECADE 2016 - 2025	SECOND DECADE 2026 - 2035	THIRD DECADE 2036 - 2045
BUS AND FERRY	BASIC TRANSPORT NETWORK	<ul style="list-style-type: none"> • Busways <ul style="list-style-type: none"> - SH1 Northern Busway Constellation to Albany - Panmure to Pakuranga (AMETI) • Bus/rail and bus/bus interchanges (“essential” elements only) • Integrated fares • Limited new bus lanes to support frequent public transport network • Limited service increases to avoid severe overcrowding • Mangere – Otahuhu – Sylvia Park bus route improvements 	<ul style="list-style-type: none"> • Busways <ul style="list-style-type: none"> - SH1 Northern Busway Albany to Silverdale - Pakuranga to Botany (AMETI) • New bus lanes to support frequent public transport network • Limited service increases to avoid severe overcrowding 	<ul style="list-style-type: none"> • New bus lanes to support frequent public transport network • Limited service increases to avoid severe overcrowding
	AUCKLAND PLAN TRANSPORT NETWORK	<p>All Basic Transport Network improvements plus:</p> <ul style="list-style-type: none"> • Bus/rail and bus/bus interchanges (“highly desirable” and “desirable” elements) • Additional new bus lanes to support frequent public transport network • Service increases • Park-and-ride programme • Ferry terminal upgrades • Bus stop improvement programme • Improvements in bus service frequency and capacity 	<p>All Basic Transport Network improvements plus:</p> <ul style="list-style-type: none"> • SH16 Northwestern Busway • Continued roll out of park-and-ride programme • Bus stop improvement programme • Improvements in bus service frequency and capacity • Rapid transit buses running Botany – Flatbush – Manukau – Auckland Airport 	<p>All Basic Transport Network improvements plus:</p> <ul style="list-style-type: none"> • Rapid transit buses: <ul style="list-style-type: none"> - SH18 Upper Harbour (Henderson – Westgate – Greenhithe – Constellation) - Cross Isthmus (New Lynn – Onehunga – Otahuhu) • Continued roll out of park-and-ride programme • Bus stop improvement programme • Improvements in bus service frequency and capacity

Table 2.

		FIRST DECADE 2016 - 2025	SECOND DECADE 2026 - 2035	THIRD DECADE 2036 - 2045
RAIL	BASIC TRANSPORT NETWORK	<ul style="list-style-type: none"> • City Rail Link • Rollout of new electric trains, and provision of 10-minute peak frequencies • Protection for airport rail corridor • Rail Network Performance Improvements * • Rail Resilience Improvements * • Rail Network Capacity Improvements (including third main Otahuhu Wiri) * <p>* Rail projects reliant on Central Government Funding</p>		
	AUCKLAND PLAN TRANSPORT NETWORK	<p>All Basic transport network improvements plus:</p> <ul style="list-style-type: none"> • Grade separation or road closure at high priority level crossings • Additional electric trains • Service increases • New rail stations – Parnell, Paerata • Electrification Papakura to Pukekohe * <p>* Rail projects reliant on Central Government Funding</p>	<p>All Basic transport network improvements plus:</p> <ul style="list-style-type: none"> • Completion of level crossing programme • Additional electric trains • Airport rail across Manukau Harbour to Mangere Bridge • Service increases • Further rail network capacity improvements (Westfield junction, Papakura – Wiri third main) * <p>* Rail projects reliant on Central Government Funding</p>	<p>All Basic transport network improvements plus:</p> <ul style="list-style-type: none"> • Mt Roskill rail spur • Airport rail from Mangere Bridge to Airport • Service increases • Additional capacity on Eastern Line between Ports of Auckland and Westfield * <p>* Rail projects reliant on Central Government Funding</p>

Table 3.

		FIRST DECADE 2016 - 2025	SECOND DECADE 2026 - 2035	THIRD DECADE 2036 - 2045
ARTERIAL AND LOCAL ROADS	BASIC TRANSPORT NETWORK	<ul style="list-style-type: none"> • Mill Road stage 1 • East West Connections • Te Atatu and Lincoln Road improvements • Albany Highway upgrade (North) • Long Bay Glenvar Ridge Road 	<ul style="list-style-type: none"> • Continuation of Mill Road project 	<ul style="list-style-type: none"> • Completion of Mill Road project
	AUCKLAND PLAN TRANSPORT NETWORK	<p>All Basic Transport Network improvements plus:</p> <ul style="list-style-type: none"> • Albany Highway (Sunset - SH18) • Long Bay southern corridor • Silverdale transport improvements • Arterial road improvements programme (\$65 million) 	<p>All Basic Transport Network improvements plus:</p> <ul style="list-style-type: none"> • Penlink • Arterial road improvements programme (\$100 million) 	<p>All Basic Transport Network improvements plus:</p> <ul style="list-style-type: none"> • Arterial road improvements programme (\$210 million)
STATE HIGHWAYS	BASIC TRANSPORT NETWORK	<ul style="list-style-type: none"> • East West Connections • SH1 Puhoi – Warkworth • SH1 Northern Corridor improvements • SH1 Southern Corridor improvements • SH20A airport access improvements 	<ul style="list-style-type: none"> • Start of Additional Waitemata Harbour Crossing • SH1 Warkworth – Wellsford • SH16 widening Kumeu to Brighams Creek • SH16 port access improvements • SH18 eastbound widening 	<ul style="list-style-type: none"> • Completion of Additional Waitemata Harbour Crossing • SH20B airport access improvements • SH20 widening Lambie Drive to SH20A
	AUCKLAND PLAN TRANSPORT NETWORK	<p>All Basic Transport Network improvements:</p>	<p>All Basic Transport Network improvements:</p>	<p>All Basic Transport Network improvements plus:</p> <ul style="list-style-type: none"> • Additional State Highway widening to reduce congestion

Table 4.

		FIRST DECADE 2016 - 2025	SECOND DECADE 2026 - 2035	THIRD DECADE 2036 - 2045
SAFETY AND OTHER	BASIC TRANSPORT NETWORK	<ul style="list-style-type: none"> • AT safety programmes (\$150 million) <ul style="list-style-type: none"> - Crash reduction works - Safety around schools - Safety and minor improvements • School and workplace travel planning 	<ul style="list-style-type: none"> • AT safety programmes (\$150 million) <ul style="list-style-type: none"> - Crash reduction works - Safety around schools - Safety and minor improvements • School and workplace travel planning 	<ul style="list-style-type: none"> • AT safety programmes (\$150 million) <ul style="list-style-type: none"> - Crash reduction works - Safety around schools - Safety and minor improvements • School and workplace travel planning
	AUCKLAND PLAN TRANSPORT NETWORK	<p>All Basic Transport Network improvements plus:</p> <ul style="list-style-type: none"> • Enhanced funding for safety programmes (additional \$110 million) • Minor intersection upgrades • Route optimisation • Operational improvements • Intelligent Transport System initiatives • Enhanced funding for workplace and community travel planning 	<p>All Basic Transport Network improvements plus:</p> <ul style="list-style-type: none"> • Enhanced funding for safety programmes (additional \$35 million) • Minor intersection upgrades • Route optimisation • Operational improvements • Intelligent Transport System initiatives • Enhanced funding for workplace and community travel planning 	<p>All Basic Transport Network improvements plus:</p> <ul style="list-style-type: none"> • Enhanced funding for safety programmes (additional \$40 million) • Minor intersection upgrades • Route optimisation • Operational improvements • Intelligent Transport System initiatives • Enhanced funding for workplace and community travel planning
WALKING AND CYCLING	BASIC TRANSPORT NETWORK	<ul style="list-style-type: none"> • Waterview shared path • Completion of 40% of the Auckland Cycle Network 	<ul style="list-style-type: none"> • Continued roll out of the Auckland Cycle Network 	<ul style="list-style-type: none"> • 70% of the Auckland Cycle Network completed by 2045
	AUCKLAND PLAN TRANSPORT NETWORK	<p>All Basic Transport Network improvements plus:</p> <ul style="list-style-type: none"> • Improved walking and cycling options to key destinations • Additional funding to allow faster rollout of the Auckland Cycle Network (55% completed by 2025) 	<p>All Basic Transport Network improvements plus:</p> <ul style="list-style-type: none"> • Improved walking and cycling options to key destinations • Additional funding to allow faster rollout of the Auckland Cycle Network 	<p>All Basic Transport Network improvements plus:</p> <ul style="list-style-type: none"> • Improved walking and cycling options to key destinations • Completion of the Auckland Cycle Network

Table 5.

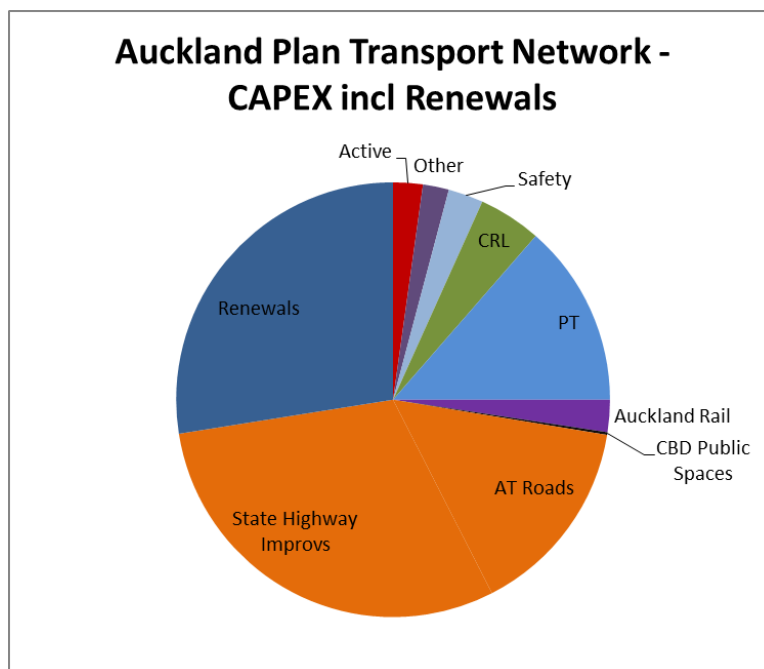
		FIRST DECADE 2016 - 2025	SECOND DECADE 2026 - 2035	THIRD DECADE 2036 - 2045
MAINTENANCE AND RENEWALS	BASIC TRANSPORT NETWORK	<ul style="list-style-type: none"> Partial funding of renewals programme – resulting in deferred major renewals, deteriorating asset conditions and increased short-term maintenance 	<ul style="list-style-type: none"> Partial funding of renewals programme – resulting in deferred major renewals, deteriorating asset conditions and increased short-term maintenance 	<ul style="list-style-type: none"> Partial funding of renewals programme – resulting in deferred major renewals, deteriorating asset conditions and increased short-term maintenance
	AUCKLAND PLAN TRANSPORT NETWORK	<ul style="list-style-type: none"> Full funding of renewals programme 	<ul style="list-style-type: none"> Full funding of renewals programme 	<ul style="list-style-type: none"> Full funding of renewals programme
GROWTH AREAS	BASIC TRANSPORT NETWORK	<ul style="list-style-type: none"> Northwest transformation Partial implementation of Flat Bush improvements State Highway improvements 	<ul style="list-style-type: none"> Funding for 40% of planned improvements in greenfields development areas State Highway improvements 	<ul style="list-style-type: none"> Funding for 40% of planned improvements in greenfields development areas State Highway improvements
	AUCKLAND PLAN TRANSPORT NETWORK	<p>All Basic transport network improvements plus:</p> <ul style="list-style-type: none"> Full implementation of Flat Bush improvements Wynyard Quarter improvements Strategic Housing areas and priority greenfields Areas 	<p>All Basic transport network improvements plus:</p> <ul style="list-style-type: none"> Full funding of planned improvements in greenfields development Areas 	<p>All Basic transport network improvements plus:</p> <ul style="list-style-type: none"> Full funding of planned improvements in greenfields development Areas

What will it cost?

Auckland Transport has developed a prioritised list of transport projects that span three decades of investment. This list underpins the transport modelling discussed under the transport benefits section of this report. This is also the list of projects that has been used to determine operating costs to be included within Auckland Transport's Regional Land Transport Plan and Auckland Council's Long-term Plan (2015-2025).

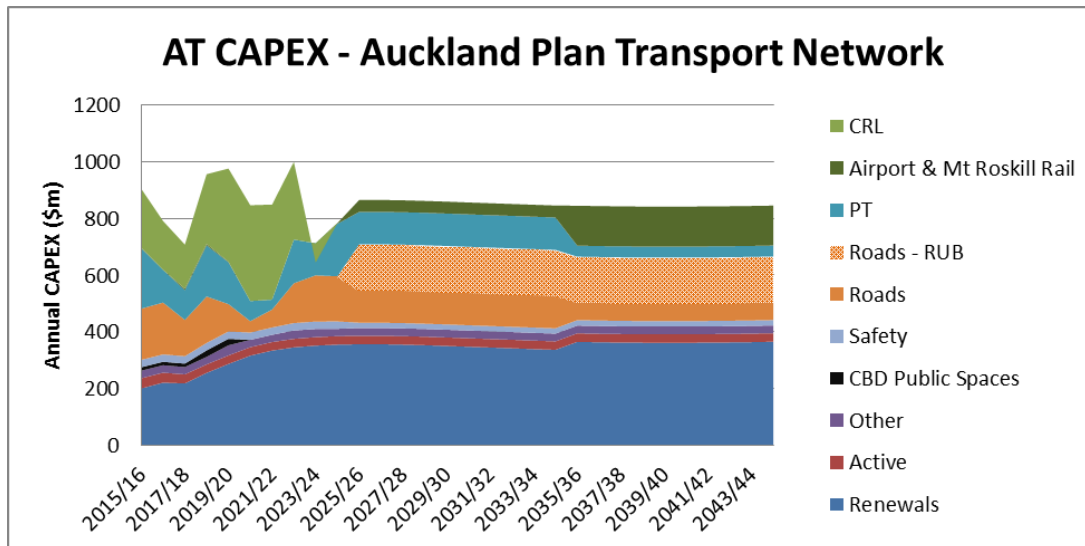
Figure 1 identifies the breakdown of the total capital spend of the Auckland Plan Transport Network (APTN).

Figure 1: Breakdown of APTN capital spend



Auckland Transport is responsible for the local road, regional arterial, parking, and the majority of the active and Public Transport (PT) components of the Auckland Plan Transport Network. Figure 2 illustrates the spend on these items over the next 30 years.

Figure 2: AT CAPEX under the Auckland Plan Transport Network (2014/15\$)



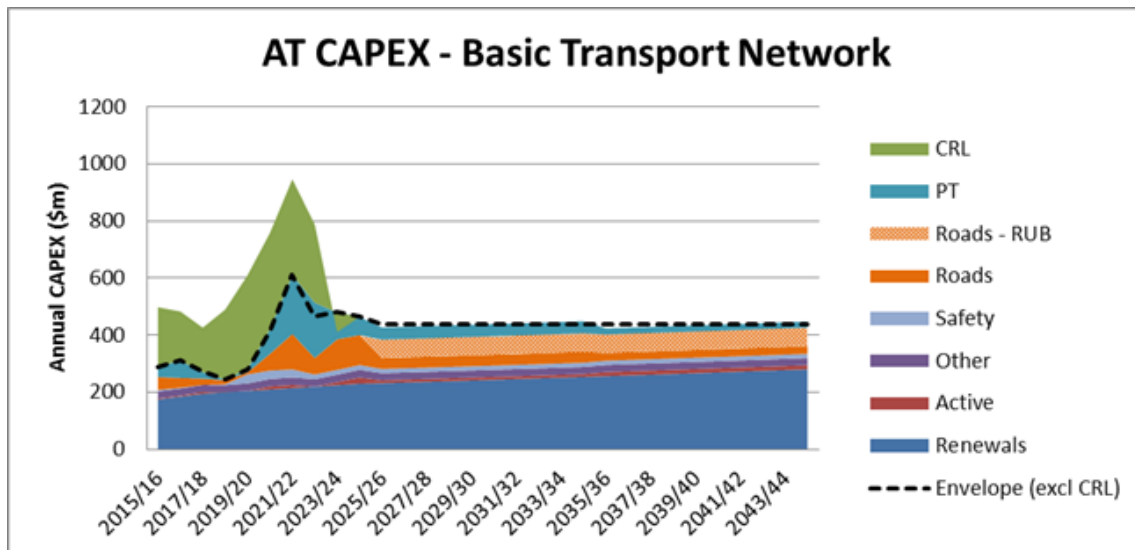
The Auckland Plan Transport Network was developed with advice from Auckland Council and NZTA on the available funding. Figure 2 illustrates the impact of the Mayor’s budget proposal on Auckland Transport’s capital expenditure programme.

Over 30 years the Auckland Plan Transport Network delivers the four main projects in the Auckland Plan: the City Rail Link, AMETI and East-West Connections and the additional Waitemata Harbour Crossing. It also delivers rapid transit connections, supports infill and greenfield growth areas and covers the cost of renewing and maintaining Auckland Transport’s assets.

The Auckland Plan Transport Network provides additional motorway lanes to improve freight movements and enables the completion of the Auckland Cycle Network. The Auckland Plan Transport Network also includes measures to achieve Auckland Transport’s four-stage intervention process¹ including: new technologies and applications, route optimisation, CCTV and Analytics and Network Operating Plans. Importantly it includes funding to renew Auckland’s assets over 30 years.

¹ The four stage intervention process involves: 1) operate, maintain and renew infrastructure optimally, 2) make better use of networks, 3) manage demand efficiently and safely, and 4) invest in new infrastructure, services and technology.

Figure 3: AT CAPEX APTN under the Basic Transport Network (2014/15\$)



All parts of Auckland Transport’s capital programme would be affected by the Basic Transport Network as shown in Figure 3. This is particularly the case after 2025 when Auckland Transport can only afford the following initiatives:

- a constrained renewals programme (allowed to increase 1% pa in real terms to reflect increasing cost pressures and network growth)
- Auckland Transport’s on-going operational requirements (including investment required to replace AT’s business assets, digital technology and maintain PT’s integrated ticketing system)
- continuation of the highest priority programmes from the first decade – including the walking and cycling, safety, minor PT, bus and transit lane, network performance and seismic strengthening programmes
- continuation of Auckland Council’s mandatory programmes (Local Board Initiatives and seal extensions)
- completion of the highest priority projects begun in the first decade which are not complete by 2025 (i.e. AMETI and Mill Road), and finally
- 40% of the estimated costs associated with the RUB / TIGGA greenfield growth roading networks.

All other projects including high priority rapid transit network extensions (such as the North-Western Busway and rail to the airport), extra lanes on the motorways to support freight movements, fully supported growth in greenfields areas and completion of the walking and cycling network by 2045 will not be achieved under the Basic Transport Network.

What are the benefits?

The Auckland Plan Transport Network provides significant benefits across Auckland's transport system. Compared with the Basic Transport Network there are considerable congestion benefits from implementing a higher level of transport investment.

Network performance – Strategic Freight Network

Figures 4 and 5 illustrate the impact of regional growth over the coming decades on road performance. The yellow line indicates a basic investment level and results in significant deterioration in performance. This is illustrated by a reduction in average vehicle speeds and the increasing proportion of freight travelling in congested conditions.

Figure 4: Proportion of freight travel in severe congestion on the freight network (AM Peak). (2006 validated starting point = 1.0)

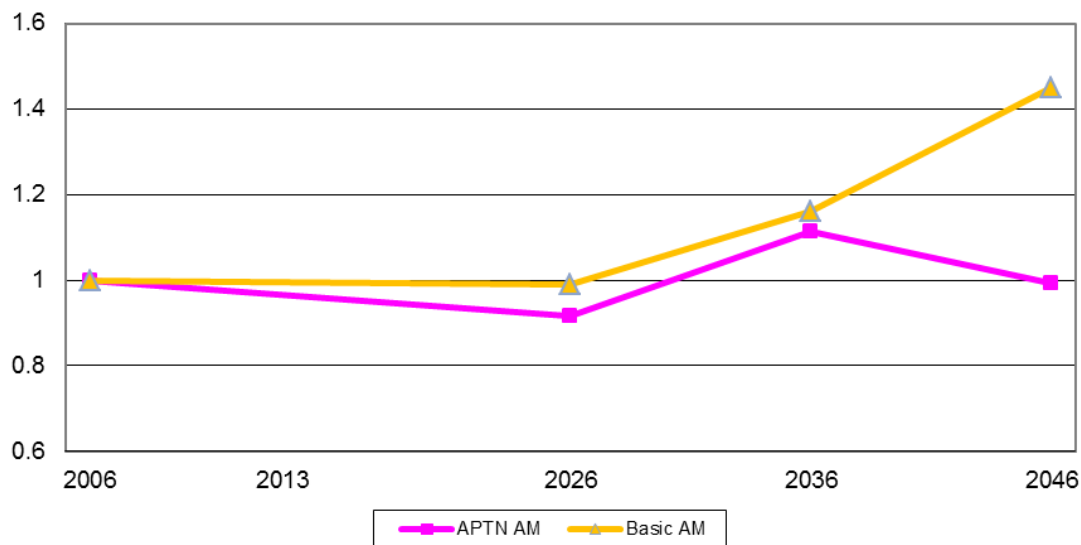
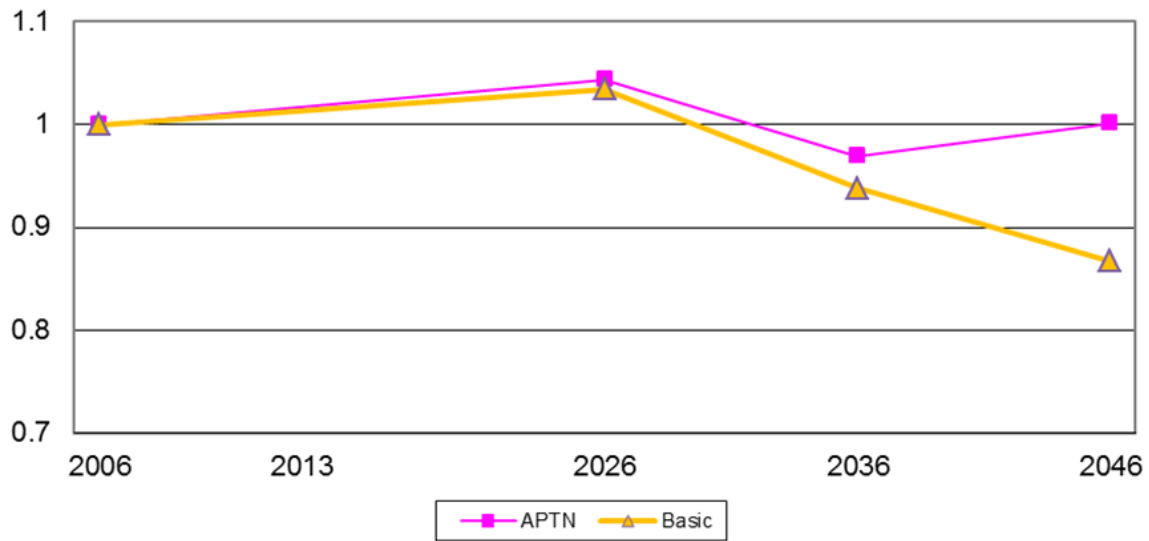
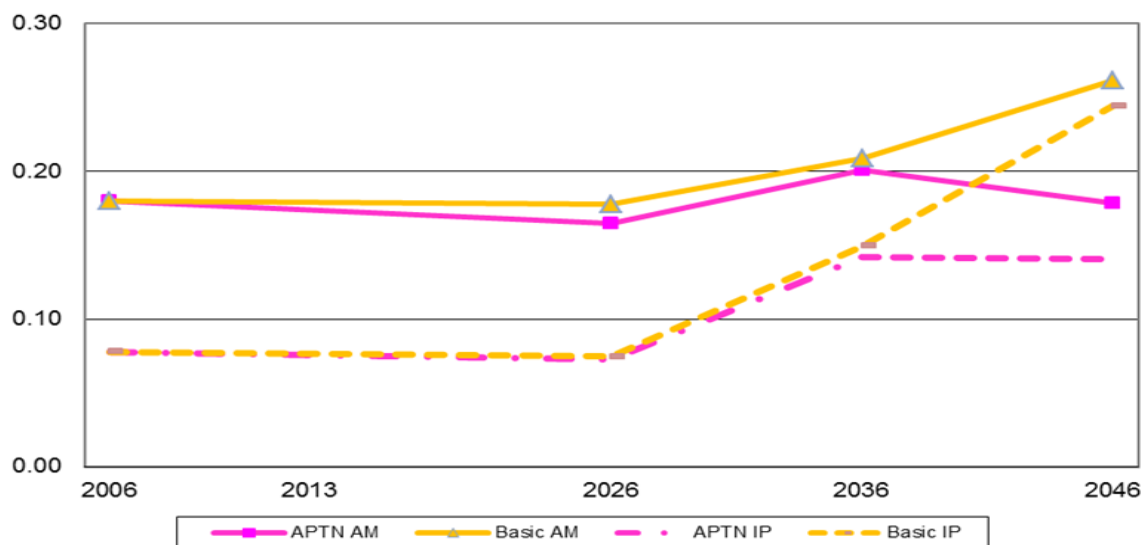


Figure 5: Average Vehicle Speed on the Strategic Freight Network, AM Peak 2006 validated starting point = 1.0



In contrast, the Auckland Plan Transport Network provides outcomes that generally retain morning peak network performance at around 2006 levels over the 30 years. There is deterioration in network performance in the second decade; however this is offset by additional investment in the third decade, which brings overall performance back to 2006 levels.

Figure 6: Proportion of Freight Travel in Severe Congestion on the Freight Network (AM Peak and Interpeak)



Transport modelling indicates that interpeak (IP) congestion will grow faster than peak congestion over the next 30 years – refer to the dotted lines in figure 6. While interpeak congestion grows under all scenarios, figure 6 illustrates that under the Auckland Plan Transport Network interpeak freight travel faces significantly less congestion than the Basic Transport Network.

The Auckland Plan does not prescribe a long term target for road network congestion, however does note that there is a goal to:

Reduce congestion levels for vehicles on the strategic freight network to at or below the average of 2006-2009 levels (average daily speed of 45kph and average delay of 32 seconds per kilometre) by 2021

Network performance – Public Transport

The Auckland Plan provides two key **public transport** targets:

- 140 million boardings by 2022, and
- 100 boardings per capita by 2040.

Figures 7 and 8 illustrate the public transport demand over time under the Basic and Auckland Plan transport networks. Increasing public transport boardings is anticipated over time under either scenario.

Figure 7: Annual PT Boardings/Capita

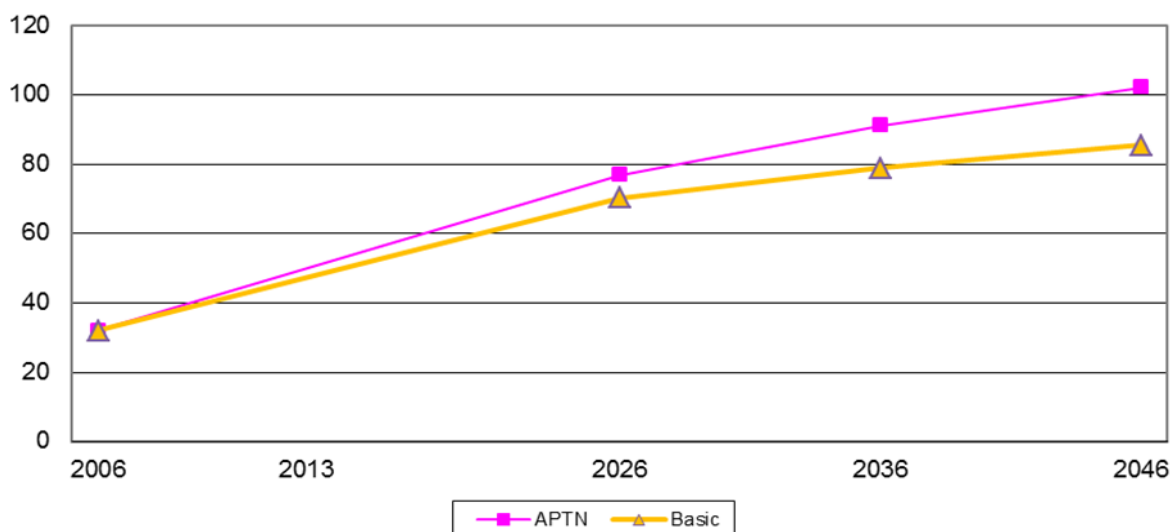
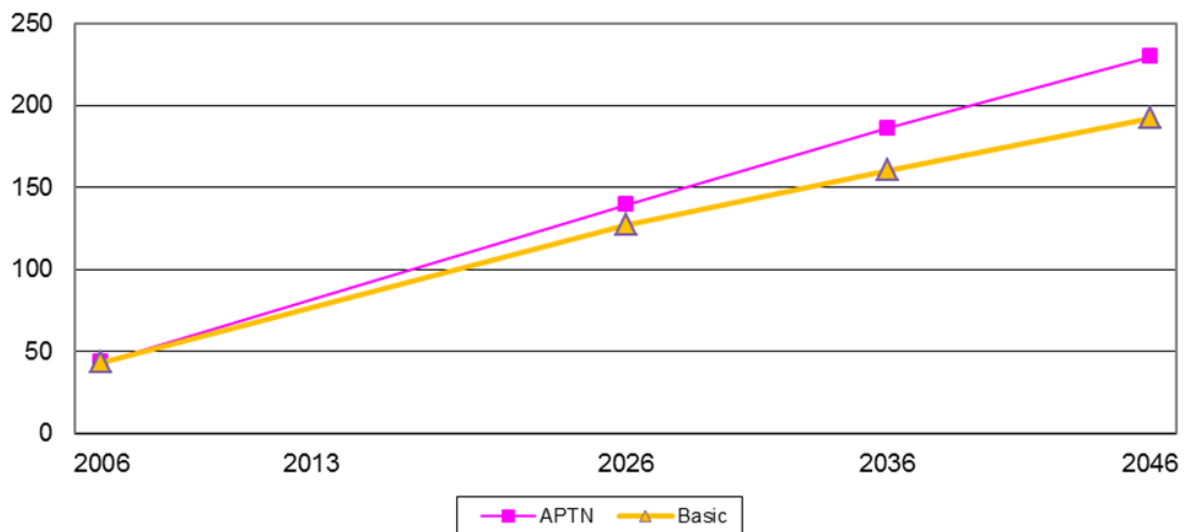


Figure 8: Annual PT Boardings



As with road network performance, the Auckland Plan Transport Network achieves superior performance. Under both scenarios, Public Transport boardings fall short of the 140m 2022 target outlined in the Auckland Plan. The Auckland Plan transport network produced demand for 140m boardings in 2025.

Network performance – Walking and Cycling

\$30m per annum for the dedicated walking and cycling programme provides enough investment to complete the Auckland Cycle Network.

The Auckland Plan provides the following targets for walking and cycling:

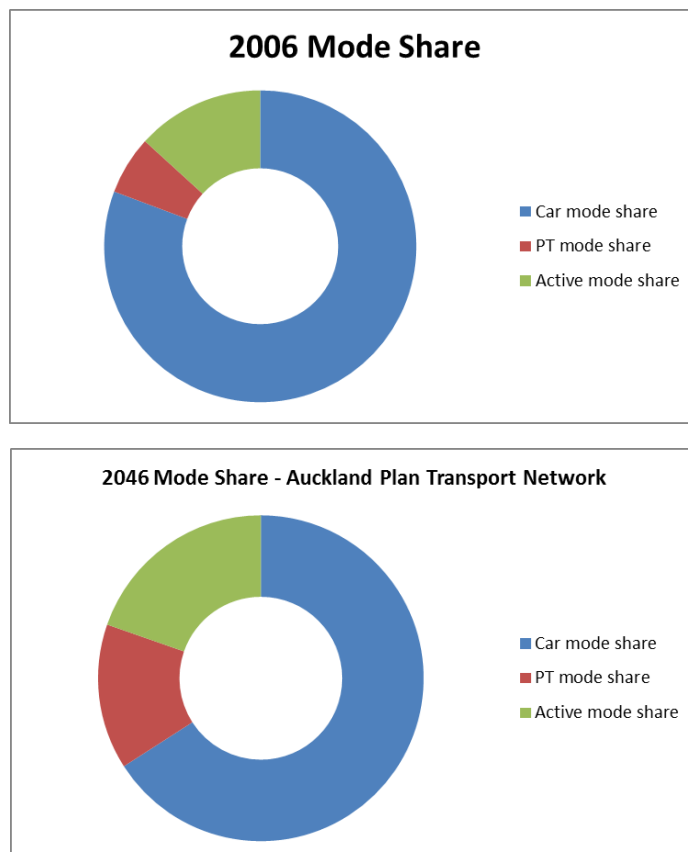
- 45% of morning peak trips are non-car (walking, cycling and public transport) by 2040
- 70% of the Auckland Cycle Network (ACN) is complete by 2020
- 100% of the ACN is complete by 2030

It has been estimated that it will cost approximately \$55m per annum for each of the next 15 years to complete the ACN by 2030 (this cost is in addition to the cycling infrastructure provided via other projects in the Auckland Plan Transport Network). At this level of investment, the 70% completion target will be achieved in approximately 2024.

As part of delivering a balanced programme, the Auckland Plan Transport Network allocates \$30m each year to a dedicated walking and cycling fund. A large part of this fund will be used to deliver the regional cycling network with the remainder for regional programmes. This \$30m per annum is in addition to the substantial walking and cycling infrastructure delivered as part of a number of the other projects included in the programme, including AMETI, Western Ring Route, Albany Highway, Te Atatu Road, Lincoln Road, Long Bay Southern Corridor, Dominion Road, and safety programmes. At this level of investment, approximately 40,000 additional daily cycle trips will be made by 2025, and 70% of the network will be delivered by 2030. The proposed programme will deliver the complete ACN over the course of the 30 year ITP, however completion of the network will happen in the 2040-45 period as opposed to by 2030.

Transport modelling indicates that the Auckland Plan transport network will help reduce the proportion of trips in the morning peak made by car from over 80% in 2006 to just under a two thirds by 2045. By 2045, PT mode share has increased to 14% of all peak trips, and active transport (walking and cycling) has moved to 20%. However, at 34% the combined public transport and active mode share remains below the Auckland Plan target of 45%, as seen in figure 9.

Figure 9: 2006 Mode Share and 2046 Mode Share



Meeting the government's transport objectives

In its 2012 Government Policy Statement (GPS) on Land Transport Funding the government gave three priority areas for land transport - economic growth and productivity, value for money, and road safety. The government's objective is for "a land transport system that: addresses current and future demand; provides appropriate transport choices; is reliable and resilient; is a safe system, increasingly free of death and serious injury; and appropriately mitigates the effects of land transport on the environment."

The draft 2015 GPS includes completion of the Roads of National Significance and further investment in state highways to support economic growth. It also aims to deliver on the initiatives announced by the government in June 2013. These are: investment to address congestion and improve travel times for freight and general traffic; improvements to public transport; and better access to social and economic opportunities, including through public transport and safe cycling.

Auckland's contribution to the national economy, its expected growth in population and related transport pressures are specifically mentioned. In respect of Auckland, the draft GPS states that,

"Careful land use decisions along with greater emphasis on public transport and demand management will play a role, but private vehicle travel will continue to account for 80 percent of daily trips. The location and timing of new roading investments will be critical to the development and redevelopment of new areas of housing and business. To accommodate new demand, further increases in the capacity of the roading network, particularly those sections currently experiencing severe congestion, will remain a priority."

Next steps

This document has been produced to contribute to and shape Auckland Council's Long-term Plan (2015-2025) with respect to transport investment, and Auckland Transport's 2015-25 Regional Land Transport Plan (RLTP). Draft versions of both plans will be going out for public consultation early 2015. The final plans are due for adoption June 2015.

Appendix

Detail Transport Programme 2015-2045 (refer to separate document).

Disclaimer: *The financial projections in this document reflect Auckland Transport's most recent estimates of its capital programme for its draft Long-term Plan. In some cases they may not match exactly the estimates used for the Alternative Transport Funding project.*

**Auckland
Council**

Tā Kāwhiri o Tāmaki Makaurau

