

# Strategic PT Reviews - Update

## Recommendations

That the Board:

- i. Notes progress on key public transport strategic reviews.

## Executive summary

The programme of initiatives to grow and develop Auckland public transport over the three year Statement of Intent period is founded on seven strategic projects. This report provides a brief overview of the timing of the seven projects by mode and a brief update of progress on the seventh project of developing a blueprint design for enhanced customer experience across public transport services, facilities, staff-customer interactions and multi-modal support services. Phase 1 of information gathering has been completed in the last week with a report being finalised.

Public transport patronage forecasts beyond the three year period utilise modelled outcomes based on various scenarios of land use and population growth. These forecasts are documented in the Integrated Transport Plan. This report provides an update on the project to collate and further develop a detailed programme of initiatives to grow and double public transport by 2022 and provide detailed patronage forecasts to confirm and support the modelled forecasts and permit detailed patronage programming and reporting towards 2022 targets. The report summarising key findings from Phase 1 of information gathering is included at Attachment 1.

## Strategic context

Patronage growth targets are set over a three year period for public transport within the Statement of Intent and over a ten year period in the Long Term Plan.

Bottom-up patronage forecasting is prepared based on contributions from programmes, projects and initiatives and broader patronage acquisition activities over the three year term with seven strategic projects identified and under development or implementation.

Ten year forecasts and beyond use modeled predictions, which forecast patronage on the basis of land use and population growth scenarios along with assumptions around new programmes, projects and initiatives.

While seven strategic projects have been identified to underpin the three year patronage growth targets, a detailed programme of growth initiatives over the ten year period is now under development to enable bottom-up patronage growth forecasts. This will identify the costs, benefits and patronage outcomes up to 2022 towards the aspirational target of doubling public transport use.

## Background

### 3-year Public Transport 'Next Steps' Programme

A three year programme of seven key strategic PT projects is currently being delivered comprising:

1. HOP integrated ticketing followed by progressive implementation of the initiatives within a strategic pricing and fares review for public transport including integrated and fares
2. Service regulatory and procurement reform through the PT Operating Model (PTOM) following enactment of enabling legislative reform of the Land Transport Management Amendment Act 2013 in June
3. New service network rollout of high frequency bus services and integrated and connected support services with associated facility and infrastructure upgrades
4. Rail service enhancements and transition to the new EMU fleet
5. Ferry service and facility enhancements
6. On-time service performance and customer information
7. Customer experience enhancement across all customer touch points

The timing of outputs of the seven strategic projects are summarised in Figure 1 and by public transport mode in Figures 2 to 4.

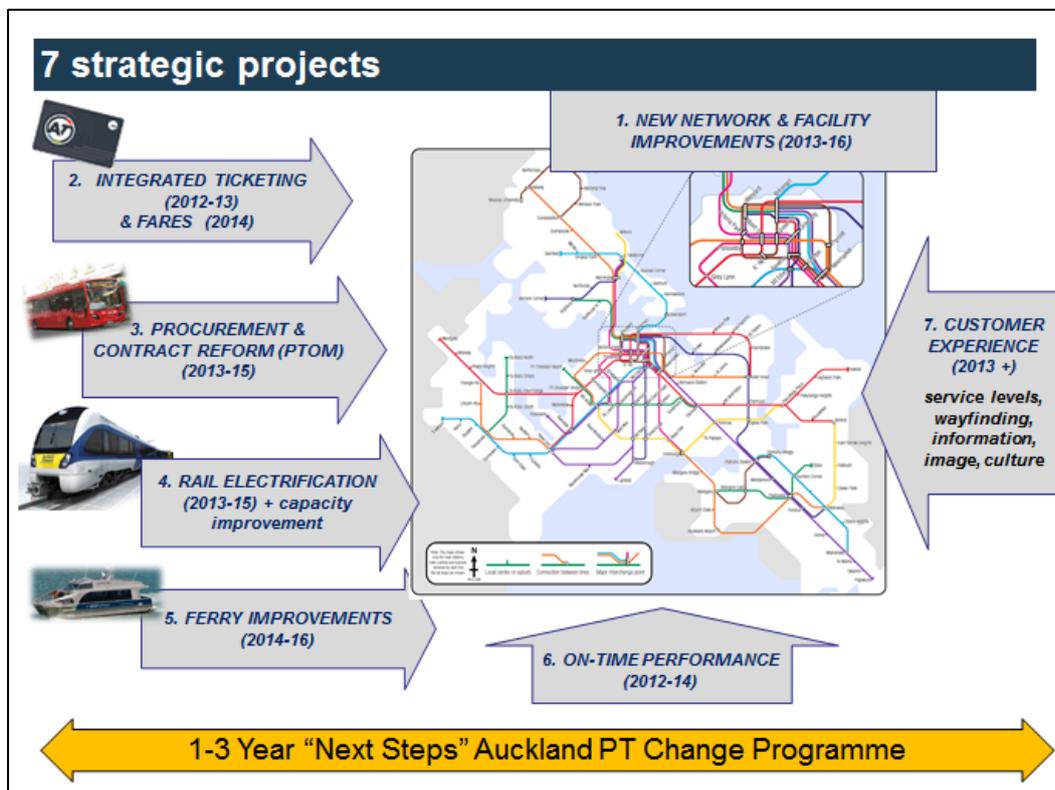


Figure 1. Seven strategic projects over the next three years

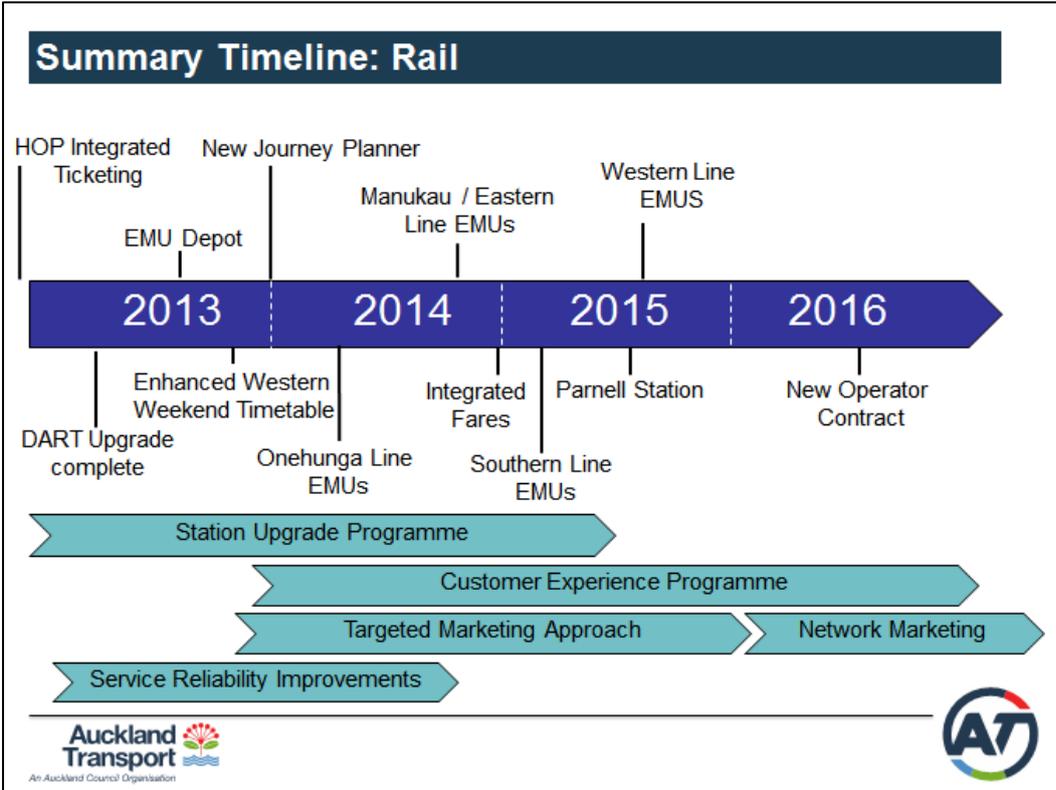


Figure 2: Timing of strategic project 3+ year outputs for rail

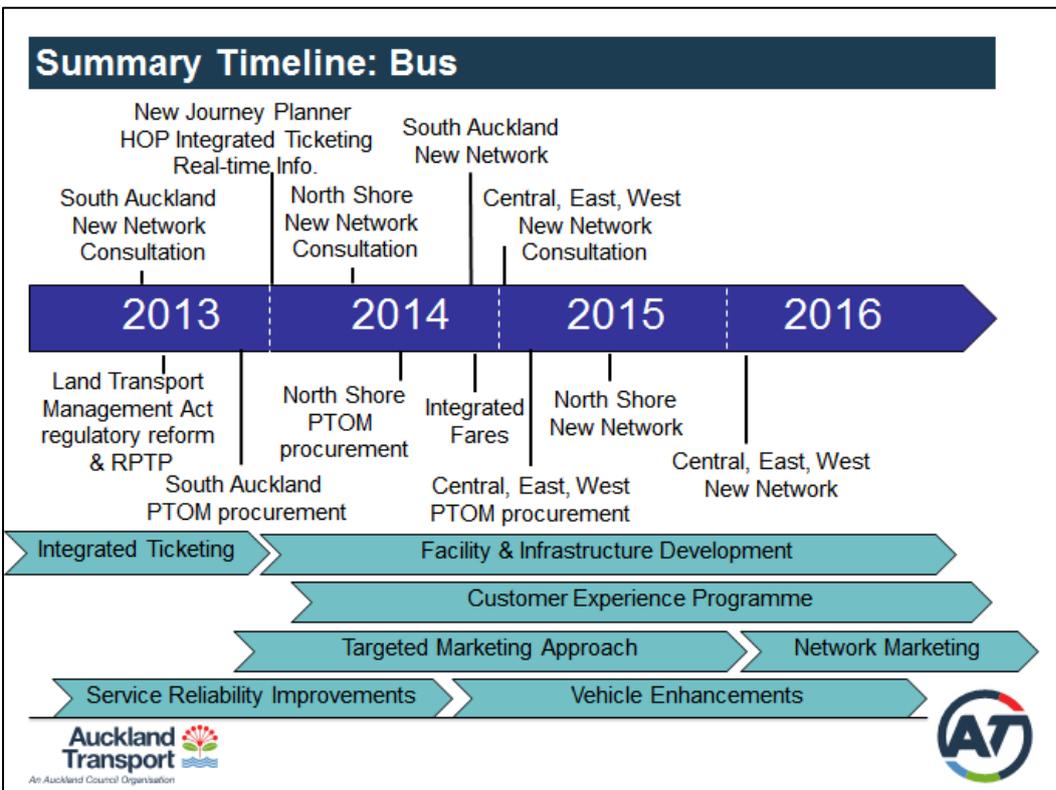
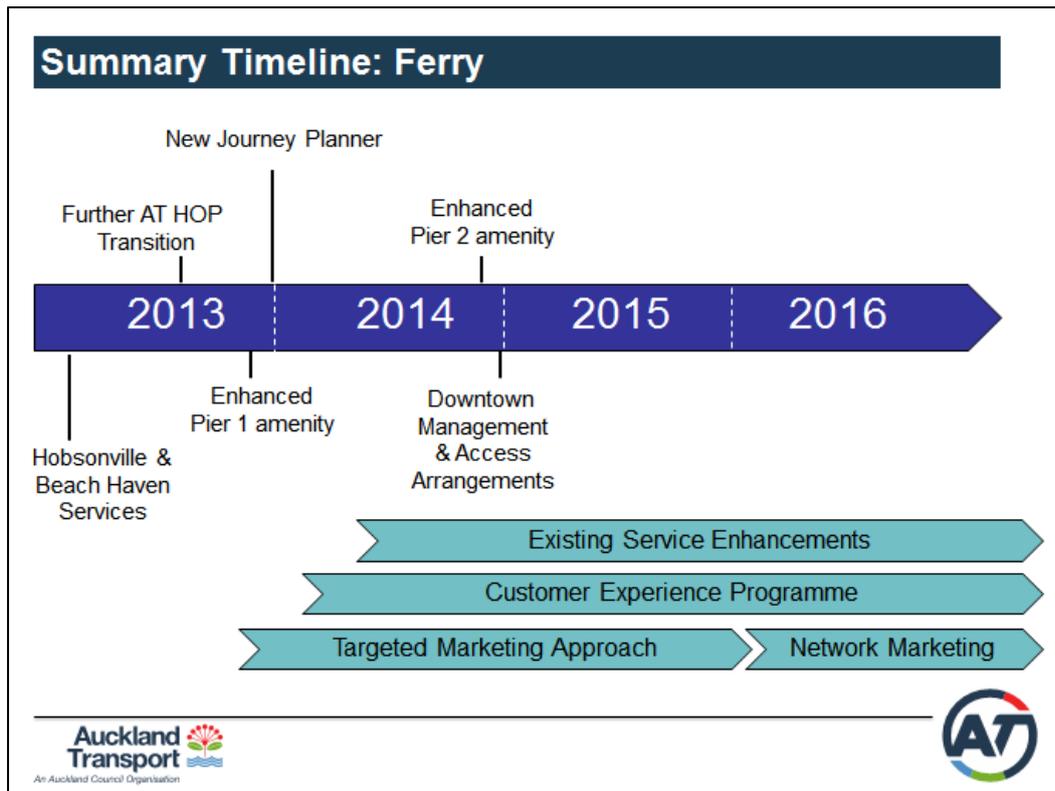


Figure 3: Timing of strategic project 3+ year outputs for bus



**Figure 4: Timing of strategic project 3+ year outputs for ferry**

## Progress on Customer Experience Programme

This is one of the seven strategic projects in the three-year programme. This is a five month project that began in July 2013. The aim of the project is to develop a set of design blueprints and standards for an enhanced experience that customers will receive on future bus, rail and ferry services and through multi-modal support services. One of the first implementation of a customer experience blueprint is targeted for the service revenue launch of the EMUs on the Onehunga Line in April 2014.

Thoughtful Design consultancy has been appointed to facilitate the work having recently completed similar blueprint and experience design remits for Auckland Council and Air New Zealand.

The first four weeks of the project has been an information gathering exercise across current and new public transport services and public transport traveller profiles have been developed, that visually articulate current travel journey scenarios across public transport modes identifying pleasure-points, pain-points and needs. The phase one report is being finalized.

For the next six weeks to mid-September, from the public transport traveler profiles created, a set of guiding service design blueprints will be developed - the basis for building public transport customer-oriented experiences and products across services, facilities, support services and staff-customer interactions.

## Progress on the 2022 Patronage Growth Programme

Deloitte has been appointed to facilitate the collation and further development of a programme of patronage growth initiatives targeting the aspirational doubling of public transport use by 2022.

The initial phase of the project has been an information gathering exercise on key project business cases and patronage contributions and assumptions underlying the Auckland public transport patronage and demand forecast models operated by Auckland Council and Auckland Transport. 25 interviews of senior and middle management within public transport areas of Auckland Transport and senior management representatives of Transdev and NZ Bus have been undertaken. Attachment 1 provides a summary report.

The second phase of the project underway will collate and develop the programme of key projects and programmes to enable a bottom-up patronage analysis and forecast for 2022. The Auckland Public Transport (APT) model will be run to confirm the cumulative impact of the patronage growth initiatives to confirm forecasts under various land use and population growth scenarios. A baseline patronage growth model and gap analysis to achieve a doubling of public transport use by 2022 will be identified. This will be used to confirm the public transport patronage forecasts developed for the Integrated Transport Plan.

## Next steps

Phase 2 of both the public transport Customer Experience design project and the 2022 public transport programme and patronage forecast are underway to develop the detail outputs from each project.

## Attachments

Number	Description
1	Deloitte, Doubling Public Transport Patronage by 2022, Phase 1 Report, August 2013

## Document ownership

<b>Submitted by</b>	Mark Lambert <b>Group Manager Public Transport</b>	
<b>Recommended by</b>	Peter Clark <b>GM Strategy &amp; Planning</b>	
<b>Approved for submission</b>	David Warburton <b>Chief Executive</b>	

## Glossary

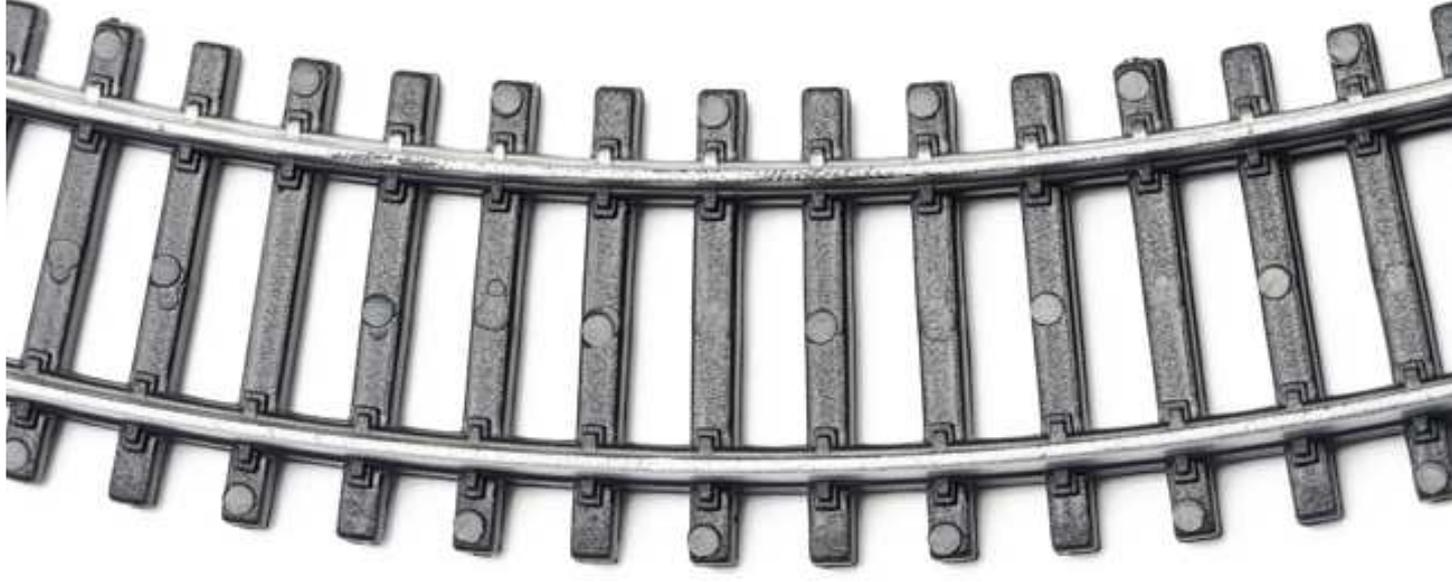
Acronym	Description
DART	Developing Auckland Rail Transport
EMU	Electric Multiple Unit

**Deloitte.**

Auckland Transport

Doubling Public Transport  
Patronage by 2022  
A 10 year plan

August 2013



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# Introduction

Auckland's Public Transport performance is currently under immense public scrutiny. PT growth plans and forecasts are becoming increasingly significant as pressure from population growth puts strain on Auckland's transport system. With this increasing pressure and public scrutiny an increased emphasis is required on implementation plans for initiatives, patronage forecasting, and detailed progress monitoring against those forecasts.

Currently, bottom up patronage forecasts exist for years 1-3 and growth predictions have been linked to planned initiatives. For years 4-10, patronage forecasting has been modelled with various scenarios included within the ITP based on land use and population growth.

Business cases and patronage growth forecasts for each transport initiative or group of initiatives is a work in progress and now requires further analysis to justify expenditure and to collate a revised 10 year patronage forecast.

The following analysis was conducted during the information gathering phase and describes some of the key findings. Phase two will involve confirming a list of initiatives planned to be delivered in the next 10 years with a linkage to patronage growth, benefits and costs.

## Phase One *Information Gathering*

- Analysis of plan and programme documentation
- Analysis of business cases
- Interviews with portfolio owners and model owners
- Key findings and recommendations

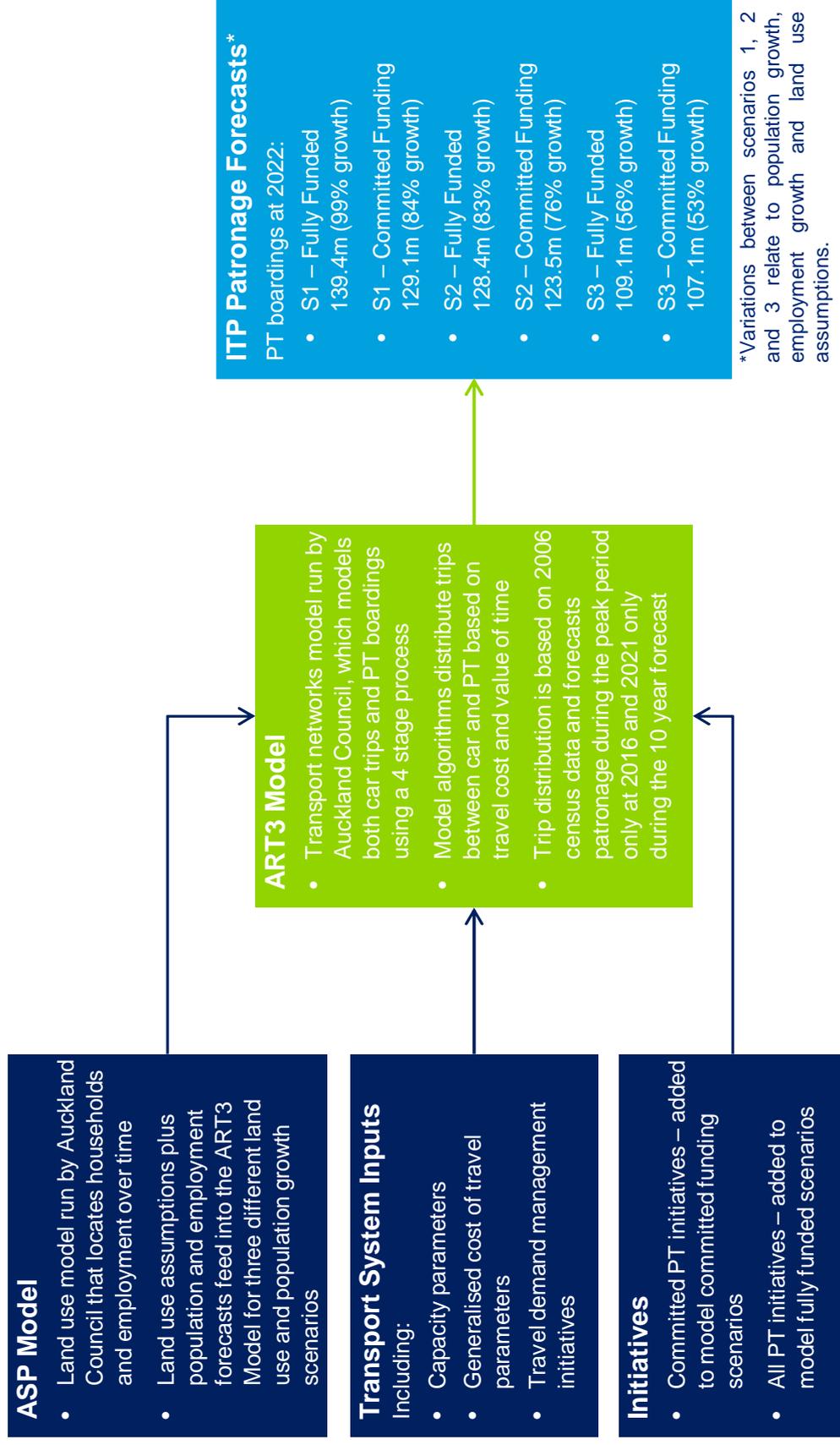
## Phase Two *Next Steps*

- Preparation of a consolidated list of initiatives to be used for a revised bottom up PT patronage growth forecast
- Focus on the gap between current state and the desired end state of a programme of business cases supporting patronage growth over a ten year horizon

# Observations

# Construction of the ITP patronage forecasts

Auckland Council owns and operates the ART3 and ASP models which have produced the ITP patronage forecasts.



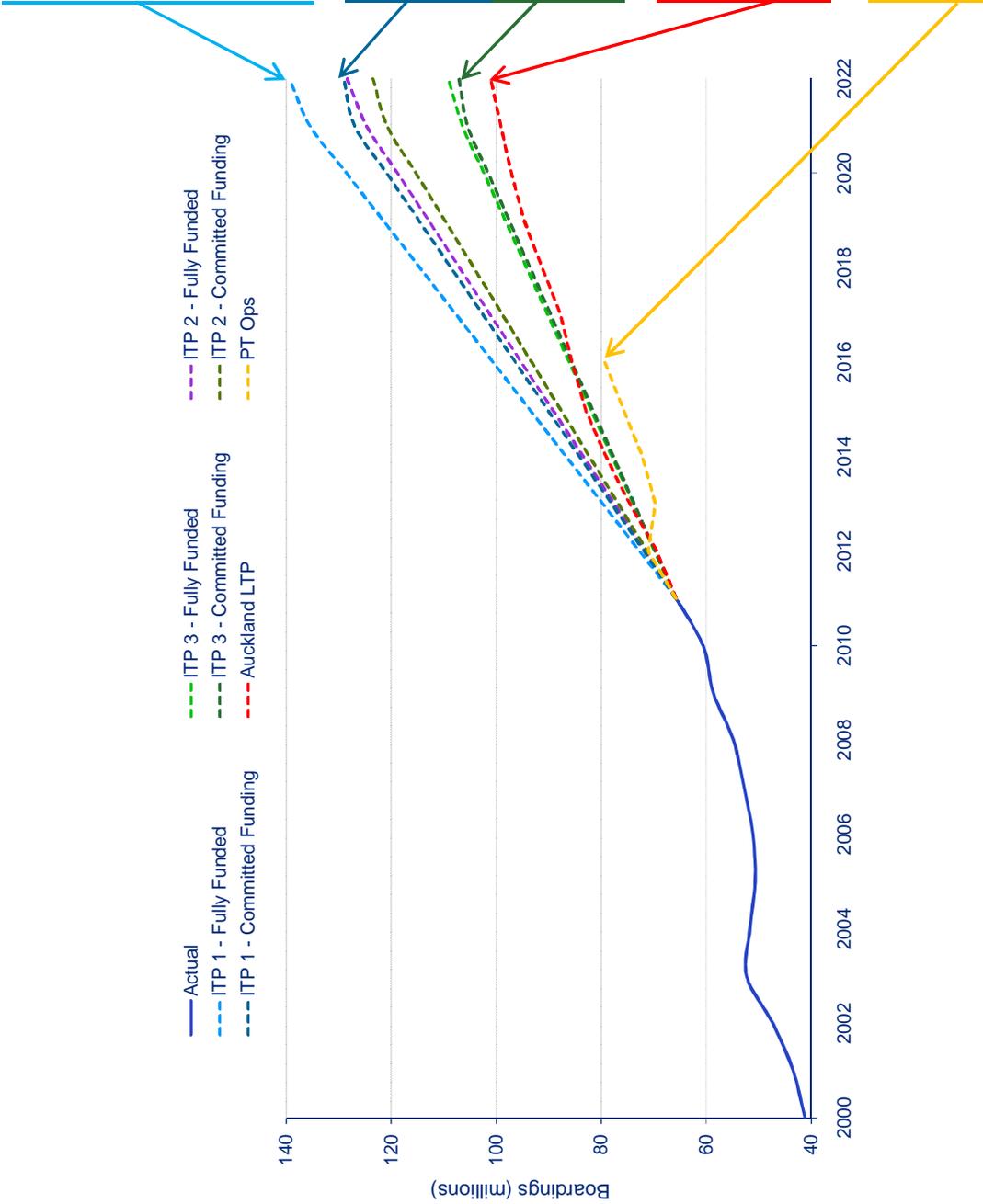
# ITP Public Transport (PT) patronage forecasts

As expected, there is a patronage gap between all forecasts and scenarios to the 140m by 2022 target to double patronage

~140m annual PT boardings are forecast by 2022 under an ITP scenario with full funding, high population growth (~1.6% pa) and 40% development outside the rural-urban boundary.

Other modelling assumptions include:

- No road pricing
- GDP per capita growth = 1.8% pa
- Employment growth in the CBD > 4% pa
- Fuel price growth exceeds PT fare growth



With committed funding over the next decade, ITP modelling generates patronage forecasts that range between 107m PT boardings and 129m PT boardings at 2022, depending on which population growth and land use scenario is run.

Other key modelling assumptions are consistent with those used for the fully funded scenarios.

The Auckland Council's LTP (2012-2022) targets annual PT patronage of 101m boardings by 2022. Underpinning this target is \$4 billion of capital expenditure, as well as population growth of ~1.5% pa and employment growth of ~1.4% pa.

Auckland Transport's PT Operations team prepares 1-3 year patronage forecasts. These forecasts are used to set PT patronage targets in the organisation's SOI.

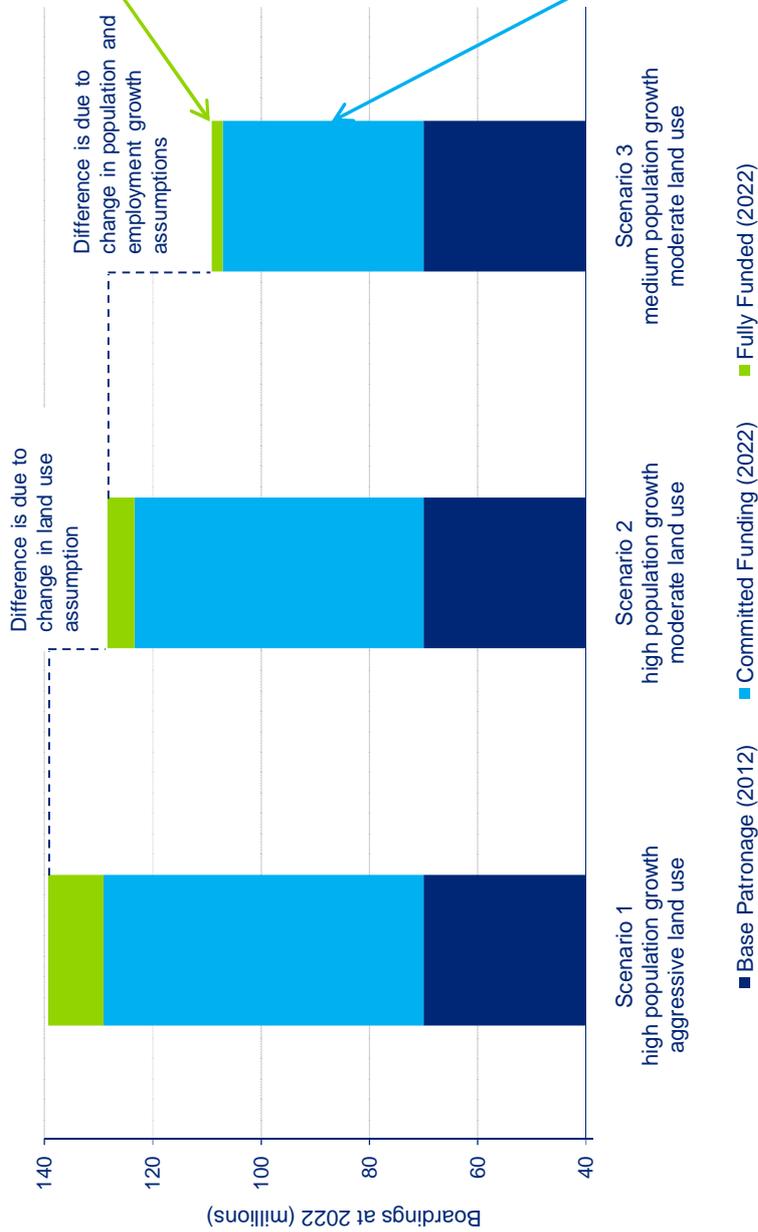
# ITP Public Transport (PT) patronage forecasts (contd.)

Modelling in the ITP does not readily distinguish between initiatives to allow detailed analysis of the patronage impact of individual projects.

The ITP modelling approach shows the total expected patronage growth from extra initiatives in the fully funded scenarios. Note that the contribution made by such initiatives is relatively small.

Additional initiatives in the fully funded scenarios include:

- CRL
- Parts of AMETI
- Third rail line – Westfield to Papakura
- Parts of Northern Busway extension
- New rolling stock to cater for increased frequencies



It is unclear what share of patronage growth relates to demographics and land use assumptions and what share relates directly to the impact of committed initiatives.

Note that the combined impact of demographics and land use assumptions plus committed initiatives accounts for more than 85% of expected patronage growth under all scenarios.

# Initiatives analysis

Initiative	Comments
Integrated Ticketing & Fares	The economic evaluation conducted by Booz Allen provides a good summary of the patronage benefits. The zoning changes and associated pricing strategy are currently under review.
Integrated Network Rollout	This overarching initiative includes multiple sub parts listed separately in the ITP. The patronage benefit for the overall integrated network is included in the APT modelling and is under further review and benchmarking compared to other cities.
Ferry Terminal Developments	In general ferry developments appear to be reactive rather than strategic. Many of the ferry developments are missing in the ITP modelling. The Ferry Development Plan is current being adjusted.
EMU	Numerous evaluations have been conducted for the purchase of the EMUs and electrification. Some patronage analysis is documented in the CCFAS.
Western Ring Route (NZTA)	Patronage benefit has not been modelled separately for this initiative by AT.
AMETI	The AMETI Demand Forecasting Report includes patronage forecasts.
Northern Busway Extension (NZTA)	Patronage benefit has been not been modelled separately yet for this future initiative. Patronage analysis for the current service appears to be strong.
Stations and Park and Ride developments	A time of travel benefit is modelled in ART3 for each rail station development.
City Rail Link	There has been a substantial amount of research conducted in the CCFAS.
Customer Experience	This programme of work is currently underway, as a result no current analysis has been completed regarding PT patronage impacts.

## Key findings

- Bottom up analysis of 1-3 year patronage exists
- Medium to long term patronage currently relies on transport model scenarios subject to land use and population growth assumptions
- Patronage impact of initiatives on PT patronage needs to be combined into the 10 year programme
- One overall single master programme with links to PT patronage impacts needs to be developed in phase 2
- There are a number of shortcomings in existing modelling:
  - Baseline numbers are from the 2006 census
  - The forecasting is performed only at 5 year intervals for the morning peak travel period
  - Assumptions are high level and not obviously supported by research, these are currently under review
  - Employment growth rate assumptions are higher than historical actuals, and population growth rates are at the high end of Statistics NZ scenarios
  - Modelling is performed in disparate organisation functions (PT, AC and AT) – note a new centralised modelling function is being planned in conjunction with NZTA
  - APT model is currently being updated to 2013 data and assumptions

# Next steps

# Recommended approach for phase two

Based on the findings from phase one, the approach for phase two has been tailored to develop a blueprint for delivery against the 10 year public transport patronage growth targets.

5-6 Weeks

**Purpose:** To build confidence in critical assumptions related to public transport patronage forecasting, and establish a revised forecast to ensure Auckland Transport can accurately monitor progress towards meeting the overall patronage target.

## Activities:

Assess levers	Revise baseline (initiatives)	Revise forecast (patronage)	Specify gap to target
<ul style="list-style-type: none"> <li>Complete analysis of patronage levers for APT modelling</li> <li>Produce revised assumption set for APT modelling**</li> </ul>	<ul style="list-style-type: none"> <li>Establish a common baseline of committed and planned transport projects and initiatives</li> <li>Map the detailed initiatives which drive patronage, including dependencies, timeframes and costs*</li> </ul>	<ul style="list-style-type: none"> <li>Produce a new forecast AT can use to monitor progress towards 10 year targets</li> <li>Model the patronage impact for changes in key assumptions and new projects and initiatives**</li> </ul>	<ul style="list-style-type: none"> <li>Confirm the extent of any outstanding gap between revised forecast and overall patronage target</li> </ul>

\* Access to PT Operations Programme resources is critical

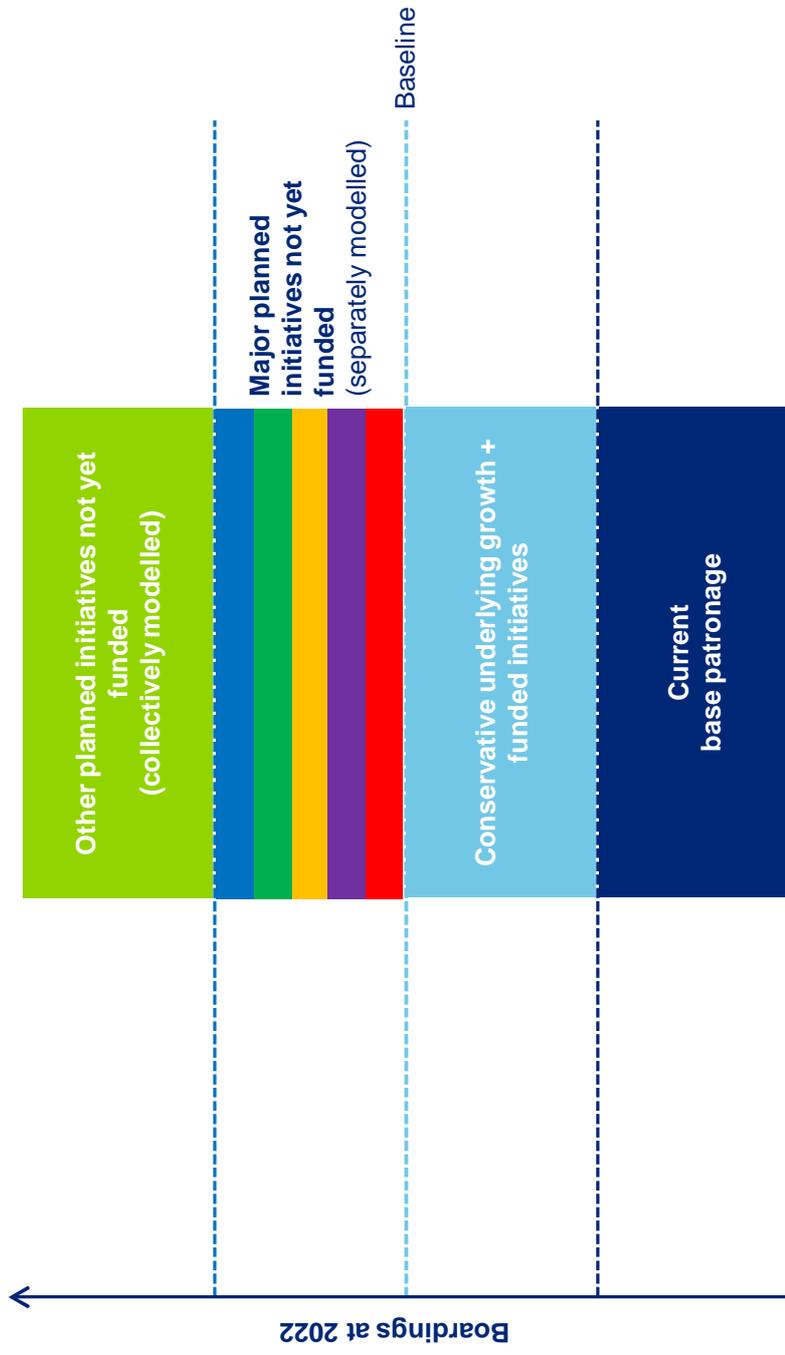
\*\* Modelling will need to be performed by AC and AT staff

## Key outputs:

- Revised assumption set for the APT model that is based on global/local experience
- Revised patronage model and forecast
- Clarity of the 'final' gap to meeting the patronage target
- Single phased programme of committed, planned and desired transport projects and initiatives

# Desired output from re-forecast (patronage) approach

The diagram below shows the contribution each layer will make towards overall patronage growth



# Supporting recommendations

	Recommendation	Current action
Modelling	<ul style="list-style-type: none"> <li>Use one model for modelling patronage</li> <li>Update model with new census data</li> <li>Model a layered approach with baseline</li> <li>Introduce capacity filters</li> </ul>	<ul style="list-style-type: none"> <li>Centralised modelling team with NZTA being established</li> <li>Underway</li> <li>Phase Two (underway)</li> <li>Phase Two (underway)</li> </ul>
Ownership & accountability	<ul style="list-style-type: none"> <li>Responsibility for monitoring PT growth</li> <li>Responsibility for model ownership</li> <li>Responsibility for 10-30 year programme</li> <li>Responsibility for less than 10 year programme</li> </ul>	<ul style="list-style-type: none"> <li>Public Transport Department</li> <li>Strategy and Planning Department</li> <li>Strategy and Planning Department</li> <li>Public Transport Department</li> </ul>
Portfolio management	<ul style="list-style-type: none"> <li>Confirm a single organisation wide view of the programme of projects and initiatives</li> <li>Formalise and document dependencies across projects</li> </ul>	<ul style="list-style-type: none"> <li>Phase Two (underway)</li> <li>Underway</li> </ul>
Discrete initiatives	<ul style="list-style-type: none"> <li>Model and include patronage benefit in all material business cases</li> <li>Consider and implement further initiatives to drive patronage e.g. strategic fares review</li> </ul>	<ul style="list-style-type: none"> <li>Consistent approach across medium sized initiatives. APT modelling to be incorporated into future process</li> <li>Conduct strategic fares review</li> </ul>
Monitoring	<ul style="list-style-type: none"> <li>Establish baseline to track PT patronage growth against plans</li> <li>Identify and mitigate risks impacting PT patronage growth</li> <li>Regular monitoring of patronage drivers</li> </ul>	<ul style="list-style-type: none"> <li>Phase Two (underway)</li> <li>Responsibility for 10-30 year, Strategy and Planning Department</li> <li>Responsibility for less than 10 years, Public Transport Department</li> </ul>
Quality assurance	<ul style="list-style-type: none"> <li>Develop an independent review process for PT patronage forecasting</li> </ul>	<ul style="list-style-type: none"> <li>On-going</li> </ul>

# Appendices

# Glossary

Term	Definition
Committed funding	Funding scenario that covers the ongoing operation, maintenance, renewal and management of the transport network together with improvements projects currently under construction or approved for funding
Fully funded	Funding scenario that assumes unconstrained funding for all projects in the ITP over the next 30 years
Scenario 1	ITP patronage forecast scenario that assumes high population and employment growth and 40% development outside the rural-urban boundary
Scenario 2	ITP patronage forecast scenario that assumes high population and employment growth and 25% development outside the rural-urban boundary
Scenario 2	ITP patronage forecast scenario that assumes medium population and employment growth and 25% development outside the rural-urban boundary

# Interviews

Count	Week Beginning	Day	Interviewee	Mode	Subject
1	8/07/2013	Thursday	Christine Mudford	Ferry	Ferry
2	8/07/2013	Thursday	Anthony Cross	Bus	Integrated Network
3	8/07/2013	Thursday	Paul Montague	Multi	IT Systems
4	8/07/2013	Thursday	John Allard	Rail	CRL
5	8/07/2013	Thursday	Guy Brocklehurst	Multi	Financial Model
6	8/07/2013	Friday	Nick Seymour	Rail	Rail Stations
7	8/07/2013	Friday	Anthony Cross / Colin Homan	Multi	Integrated Network
8	8/07/2013	Friday	Peter Paton and Rob Mayo	Multi	Customer Experience
9	8/07/2013	Friday	Piero, Matthew, Rob	Multi	Marketing Approach
10	15/07/2013	Tuesday	John Davies	Multi	Modelling/ITP
11	15/07/2013	Wednesday	Roger Jones	Multi	IT Systems
12	15/07/2013	Wednesday	Colin Homan	Multi	Integrated Fares & general service improvements
13	15/07/2013	Wednesday	Gareth Willis / Christine Perrins	Rail	Rail Network
14	15/07/2013	Wednesday	Gareth Willis	Rail	Rail Services
15	15/07/2013	Wednesday	Tom/Gareth/Colin	Rail	EMU
15	15/07/2013	Wednesday	Rick Walden	Multi	AMETI
16	15/07/2013	Wednesday	Peter Clark	Multi	ITP
17	15/07/2013	Wednesday	Mohini Nair	Multi	ITP
18	22/07/2013	Monday	John Davies	Multi	ATP Modelling
19	23/07/2013	Tuesday	Jojo Valero	AC	Auckland Council – ART3 Modelling
20	24/07/2013	Wednesday	Brendon Main	Bus	Bus Services
21	26/07/2013	Friday	Ben Fernandez	Multi	PT Programme
22	29/07/2013	Monday	Peter King, Kit McLean	Multi	AMETI Programme
23	31/07/2013	Wednesday	Maree Cotter	Multi	Brand and Uniforms
24	01/08/2013	Thursday	Terry Scott	Rail	Transdev (Independent Provider)
25	01/08/2013	Thursday	Scott Thorne	Bus	NZ Bus (Independent Provider)