
Auckland Central Access Plan

Auckland Transport

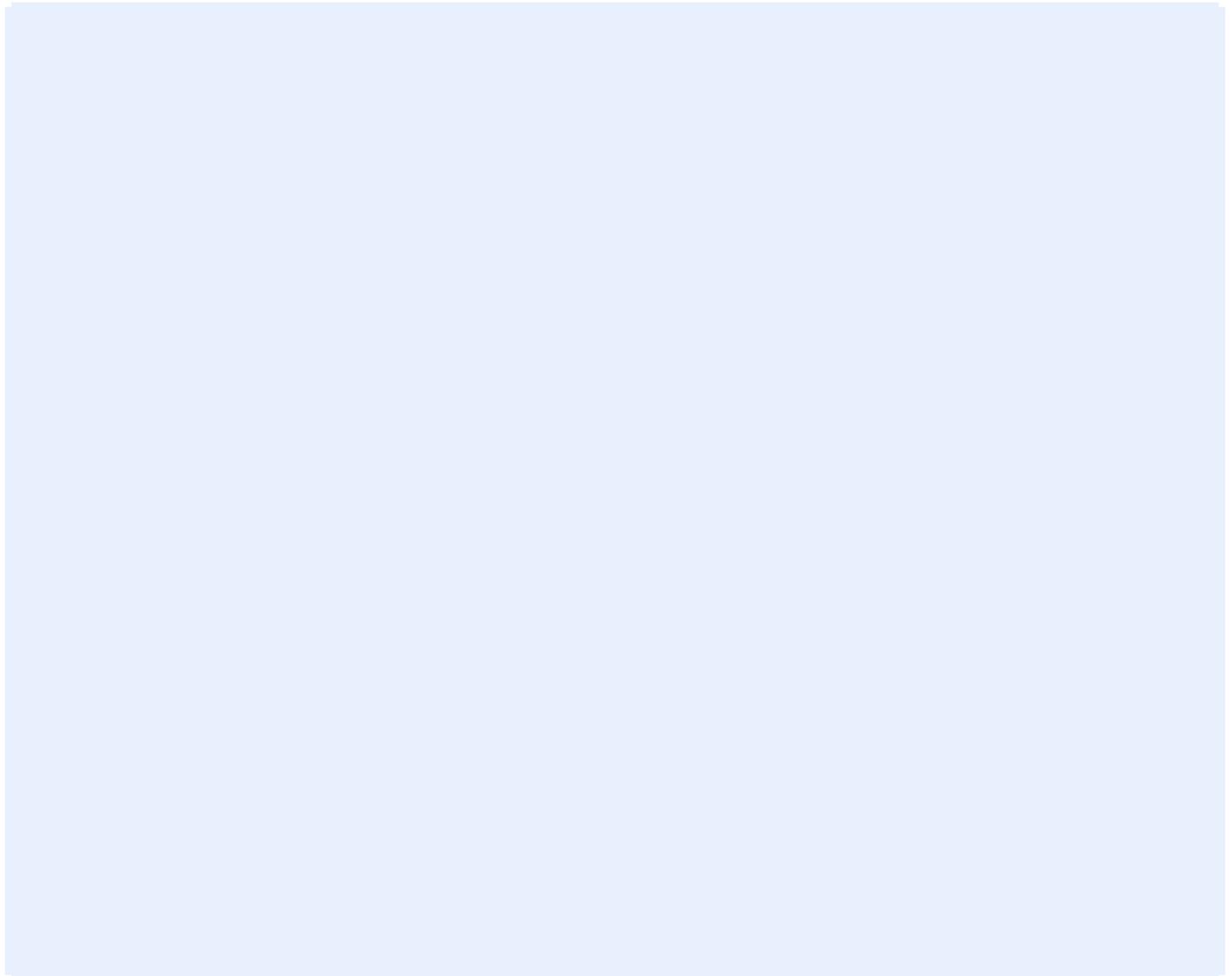
29 October 2015

VERSION V6

Strategic Case - Part A - Strategic Assessment



Strategic Assessment of Auckland Central Access Plan



EXECUTIVE SUMMARY

The Auckland City Centre plays a critical role in the region's and nation's economy. It accounts for 17% of Auckland's Gross Domestic Product (GDP). By 2041 it is estimated that it could account for 25% of Auckland's GDP. The GDP growth is linked to achieving strong employment growth in the City Centre which is contingent on resolving the access and amenity issues and better connecting the workforce to jobs.

In addition to being an employment hub, the City Centre is a residential location, provides many thousand education places and is the most important tourism and cultural destination in the region. Various surrounding areas, including the isthmus, are identified in Auckland's planning documents as having high potential for more concentrated residential development to support City Centre employment but equally depend on having enhanced access.

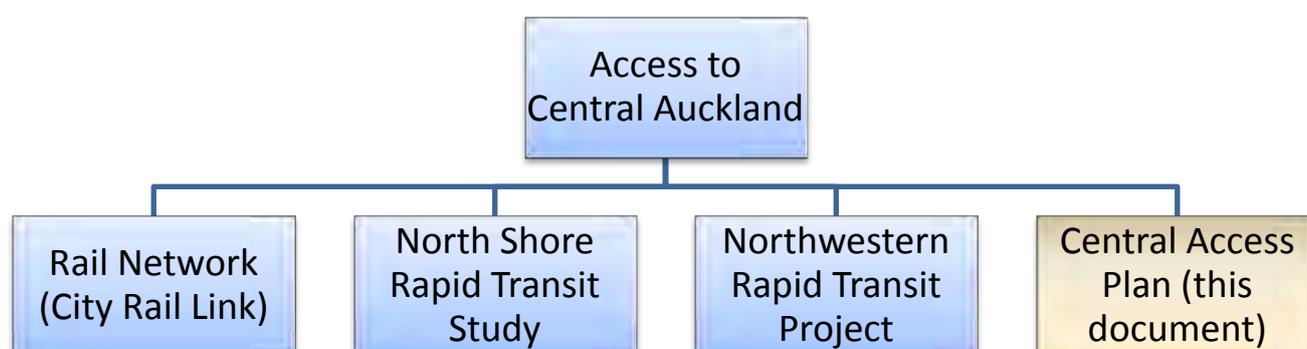
There is limited realistic ability to increase access to the City Centre by private vehicle with statistics over the last decade showing that all additional movement in and out of the City Centre has been by public transport and active modes. The Auckland bus network is already under pressure as it approaches and passes through the City Centre, shown through an inability to meet scheduled arrival times and significant variability in travel times. Routes are experiencing over-crowding, with crush loadings occurring, resulting in passengers being passed by.

There is some limited ability to provide additional services which will soon also be at capacity themselves. The rail network too has been experiencing very rapid patronage increases – averaging 18% year-on-year since the opening of the Britomart Transport Centre. There is a strong likelihood that capacity at Britomart will be exceeded before the CRL can be opened.

The existing problems will be compounded by Auckland's very rapid population growth with a likelihood that the population will have increased from around 1.5 million people to around 2.5 million in not much more than 30 years.

An Auckland *Central Access Plan* (CAP) is therefore required to address the significant existing and future deficiencies in Auckland's central transport network. It is needed to resolve the multiple transport challenges, and to prevent an unnecessary and potentially damaging limitation of Auckland's economic productivity. The CAP is likely to comprise a series of coordinated interventions building on existing recent projects/investment commitments such as the Britomart underground rail station, and the City Rail Link (CRL).

The CAP is deliberately focused on the Auckland City Centre and corridors that directly feed into it, mainly from the central isthmus, as analysis has shown that the most critical corridors are those from the south, converging on Symonds Street. Other key corridors accessing the City Centre from the North and Northwest and the rail network are being addressed by Auckland Transport (AT) and the NZ Transport Agency through other planning processes and current projects, such as the City Rail Link.



The problems identified in the Investment Logic Map (ILM) are:

- **Problem one:** Inability to meet current & projected transport demand on key corridors will sustain unreliable travel & poor access to productive central city jobs.
- **Problem two:** Blockages and delays in central bus services worsens travel times & customer experience for those using public transport
- **Problem three:** High & increasing traffic volumes on residential & inner city streets create adverse urban amenity and environmental effects.

The evaluation against the problems demonstrates that even after immediate measures have been taken such as introducing more double-decker buses and increasing the number of bus lanes, there will still be a set of significant and growing access issues focused on the City Centre. It is estimated that with Auckland's rapid growth the planned interventions may suffice for only some five years. There is therefore a high degree of urgency for a plan for the next set of possible actions.

PART A – THE STRATEGIC CASE

1. INTRODUCTION

1.1 Purpose

The Strategic Case for the *Auckland CAP* demonstrates the substantial current and anticipated problems relating to maintaining adequate access to New Zealand's pre-eminent economic node as population and employment grow. If accessibility is not maintained, it is likely that the City Centre will not grow to meet its potential, reducing the level that could be achieved for New Zealand's economic productivity. There is demonstrable evidence of a case for change.

Analysis in the CCFAS, as well as earlier studies – such as for the various regional land transport strategies - has shown that it will not be effective or efficient to increase accessibility to the City Centre by private transport. The focus is therefore on public transport and active modes – backed by stronger urban intensification.

Whilst the CRL will provide significant additional capacity into the City Centre on the metro rail network and enable some buses to be diverted away from the City Centre into feeder services, the rate of growth in population and employment in Auckland is such that the bus routes face ever increasing pressure. Corridors serving the isthmus and North Shore – the main residential catchments of City Centre employees - are projected to progressively run out of capacity over the short to medium term future. These capacity constraints are projected to occur even with the currently planned improvements as supported by the Transport Agency, such as additional bus lanes and the introduction of double-decker buses.

1.2 Decision sought

Approval is sought to develop an indicative (or programme) business case to confirm the case for change based on the analysis of the *Auckland Central Access* problems. Further business case stages should identify and assess the various options, programmes and alternatives for solving the transport problems and realising the economic opportunity. The next stages should identify a preferred plan, which is likely to comprise a series of coordinated interventions.

At this point the 'solution' is not proposed. Funding is sought to continue the investigation and to evaluate the options that best address the transport issues and release underlying economic pressures, through developing an indicative (or programme) business case.

2. PARTNERS AND KEY STAKEHOLDERS

The core partners for the *Auckland CAP* are:

- Auckland Transport (AT) – as the strategic transport authority for Auckland
- Auckland Council (Council) – being the owners of AT, the co-funders of transport improvements and the statutory planning authority for Auckland
- The New Zealand Transport Agency (Transport Agency) as second co-funders of the transport system and lead agency to deliver against the Government Policy Statement on Land Transport (GPS).

The three partners participated in the ILM and benefits workshops.

AT has the role of lead partner for the Strategic Case and is likely to continue in that role for a programme or indicative business case.

Council is particularly focused on the broader outcomes that transport should deliver and is providing guidance, therefore, on such matters as the economic potential of the City Centre, amenity, and land-use opportunities.

The Transport Agency is initially providing guidance as to the form and content of the Strategic Case, and likely input required for deciding which interventions may qualify for NLTF investment. As the project evolves there may be specific interventions that fall more within the Transport's Agency's ambit.

All three partners are working together in accordance with a "One Network" philosophy.

3. STRATEGIC ASSESSMENT - OUTLINING THE NEED FOR INVESTMENT

3.1 Defining the Problem/Opportunity

A facilitated investment logic mapping workshop for the CAP was held in two stages on 04/09/2015 and 10/09/15 with the principal stakeholders, as listed in Section 2, to gain a better understanding of current issues and business needs.

The stakeholder panel identified and agreed the following problems:

- **Problem one:** Inability to meet current & projected transport demand on key corridors will sustain unreliable travel & poor access to productive central city jobs.
- **Problem two:** Blockages and delays in central bus services worsens travel times & customer experience for those using public transport
- **Problem three:** High & increasing traffic volumes on residential & inner city streets create adverse urban amenity and environmental effects.

Evidence for the Problem statements

Inadequate corridor performance reducing City Centre accessibility

Analysis for AT has shown that reductions in peak-hour bus speeds and the corresponding increase in commuter journey times to access City Centre employment will significantly impact the labour pool available to City Centre businesses. While rail and busway services are expected to be largely unaffected, the remainder of street running bus routes are susceptible to delays from traffic, crowding and bus stop congestion. A particular problem area is the central isthmus.

In 2016, an estimated 461,000 people will live within a 45 minute commute of the City Centre by public transport. Under a business-as-usual scenario, however, bus journey times to the City Centre at peak hours are projected to increase by approximately 15% per decade. Rising ridership and overcrowding will slow bus operations while rising traffic congestion reduces bus speeds. By 2026, the number of people living within a 45 minute public transport commute of the City Centre will have declined by 18%, representing a reduction in the commuter labour pool of 84,000 people.

By 2046, on-street bus travel speeds will have declined to 77% of the 2016 baseline, resulting in the number of people within a 45 minute PT commute of the City Centre being reduced by 37%, a loss in catchment of 172,000 people from the City Centre labour pool, compared to the present.

Figure 1 demonstrates the expected catchment loss over time.

Overall, the analysis suggests that a business-as-usual approach will lead to a rapid decline in accessibility to the City Centre by public transport as street-running buses become increasingly affected in future decades. This reduction in bus speeds will result in a significant drop in the number of people within a reasonably public transport commute time of the City Centre, reducing the effectiveness of the Auckland labour market.

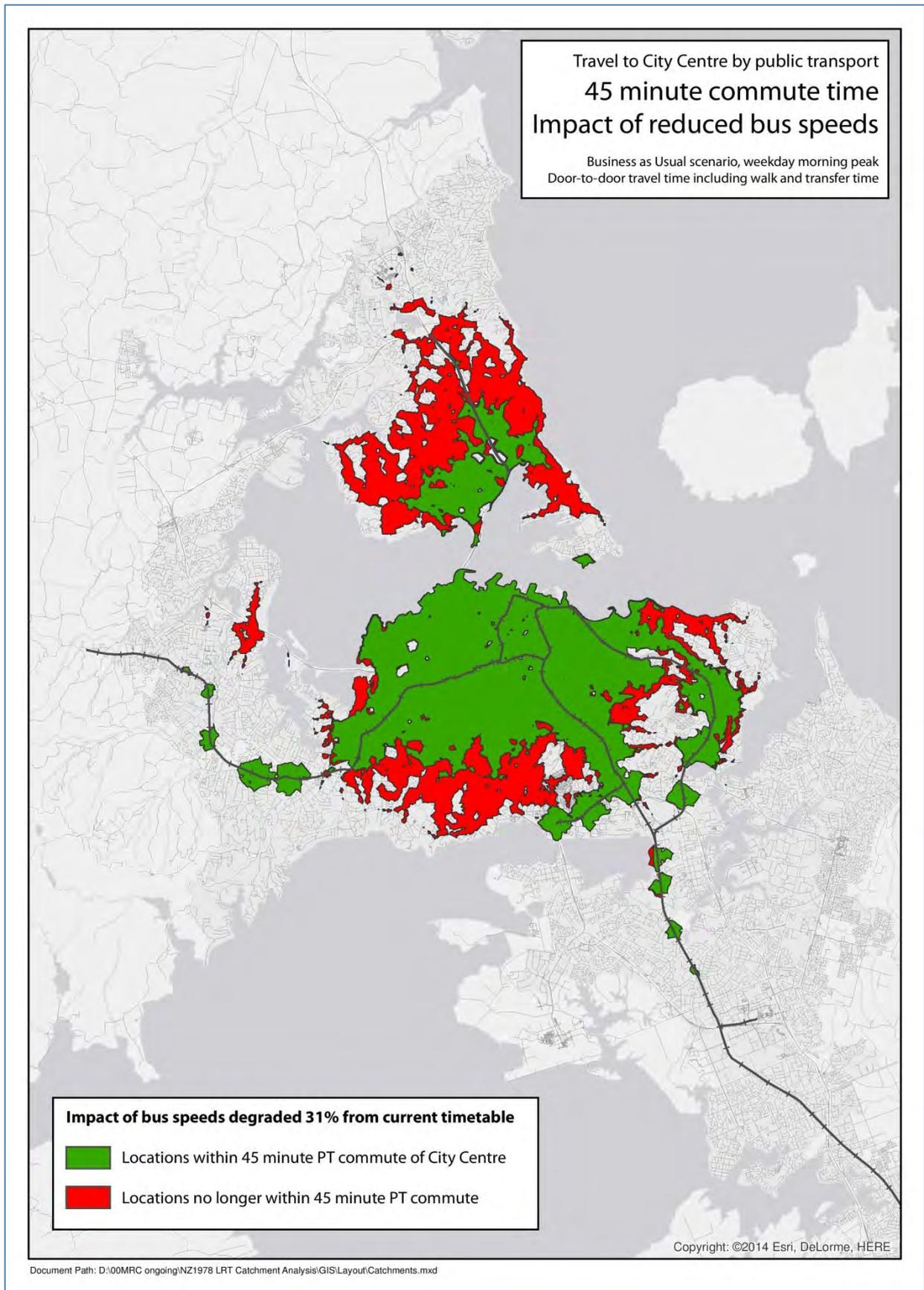


Figure 1 - Expected catchment loss over time

Limitations on the number of City Centre access points and internal network capacity have combined to ‘cap’ the ability to increase car access. Figure 2 illustrates how private car usage has remained approximately unchanged with significant growth in public transport and how trends are projected to continue. In this context, expected future declines in public transport accessibility to the City Centre will have a material impact on its success.

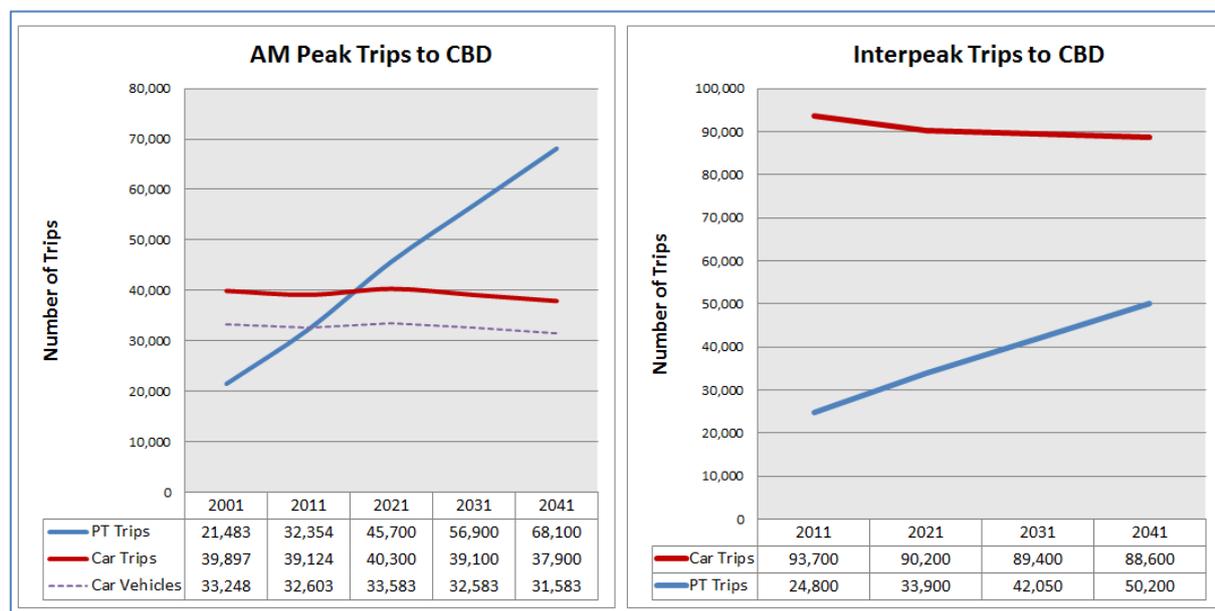


Figure 2 - Actual and projected trips to the City Centre, by mode

The dependence of the Auckland economy on effective City Centre access

A central role for transport in delivering economic growth is supporting the population growth of Auckland and enabling agglomeration benefits to be realised. As central Auckland is New Zealand’s largest concentration of employment, the success of the City Centre is fundamentally connected to the economic success of the country as a whole.

The direction for the Auckland economy is changing, moving towards a high productivity knowledge and information based economy. This change is part of a broader shift across developed world economies to higher skill levels and more specialisation, where agglomeration is an important contributor to economic productivity. Over the next 30 years it is projected that the areas of greatest employment growth will be in business services which will drive major employment growth in the City Centre and its immediate surrounds, as shown in Figure 3 below:

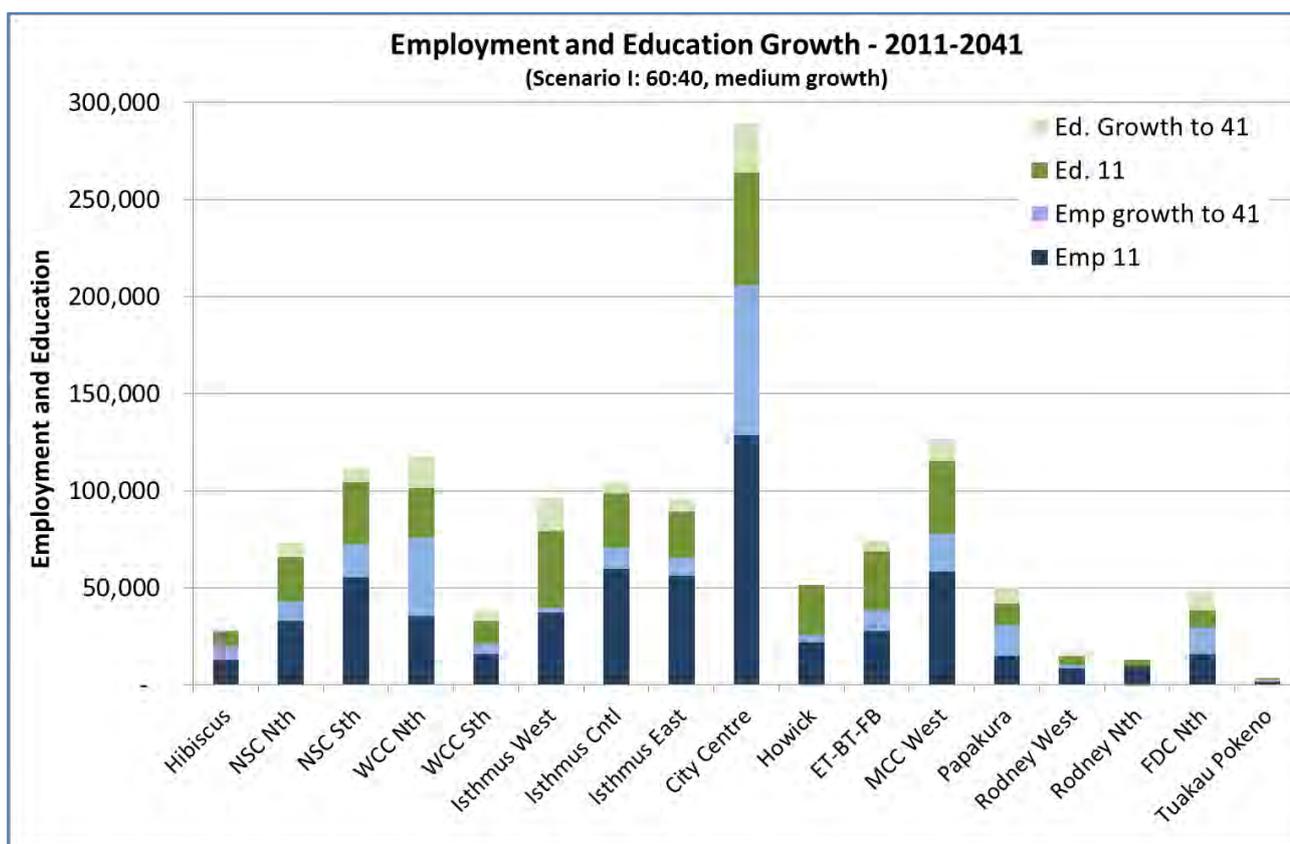


Figure 3 - Employment and education growth by area, 2011-2041

The evolution of Auckland’s economy reflects an increasing move to high value activities (such as finance) in major employment clusters - the City Centre and other metropolitan centres. The scale of commercial activity, concentration of relatively high-value industries and greater number of highly skilled workers is such that labour productivity is 30% to 50% higher in Auckland, and up to 150% higher in the City Centre, than in other New Zealand regions. Supporting the growth and prosperity of major employment clusters such as the City Centre requires good accessibility and the provision of a high quality urban environment to attract internationally mobile high-skilled workers.

Accessibility is important because for businesses to be productive they need a choice of potential employees to increase the likelihood of finding the most suitable worker. Similarly, workers benefit from as wide a choice of potential employers as possible. If people have a higher number of jobs within a reasonable commute time this will increase their likelihood of finding the most suitable job, make it easier to build on their skills and reduce their vulnerability to long-term unemployment. For highly specialised employment types, where productivity levels are highest, accessing larger labour pools become particularly important.

Improving accessibility requires many aspects of the transport system to be operating effectively, to ensure travel speeds are sufficiently high, that wait times for public transport are short and that the capacity of the system to cope with demand is adequate.

The City Centre currently draws on workers from across the region, but with a particular concentration in the isthmus and lower North Shore areas. This is shown in Figure 4 below, which

indicates from the 2013 census the proportion of workers in each census area unit who were employed in the City Centre¹.

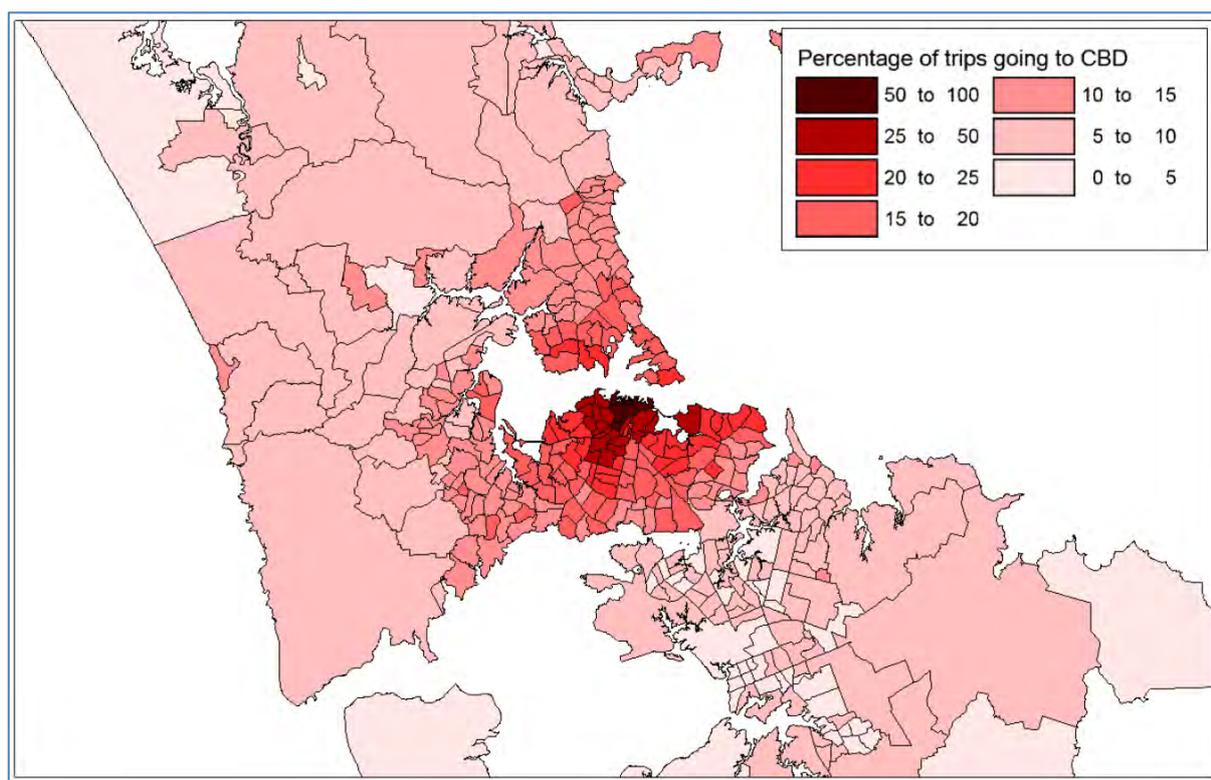


Figure 4 - Trips to the CBD by area

It also requires effective integration between land-use and transport, so that housing growth is located in areas with good access to jobs and that employment growth is located in place with large labour pools.

The declining accessibility, as assessed in the MRC study cited earlier, will jeopardise the ability of the City Centre to operate to maximum effectiveness, is likely to limit its employment growth and would therefore undermine the growth and prosperity of Auckland and New Zealand.

Limited effectiveness of the bus network and poor customer experience

The City Centre forms the heart of Auckland's public transport network, with 60% of all public transport trips having a destination in the City Centre. While the new public transport network creates more cross-town and feeder bus services, a large proportion of bus routes still travel to and through the City Centre. This means the performance of the whole public transport network is highly dependent on how efficiently and effectively it operates within the City Centre.

As of mid-2015, the Auckland bus network carried 59.8 million passenger trips per year, with 507.1 million passenger-kilometres travelled. Bus patronage has increased from 43 million trips in 2005; an increase of some 40% over ten years.

While in the future metro rail is forecast to carry many more trips than it does today (partly as a result of having the CRL), with the growth of Auckland, buses are still expected to be the largest public

¹ Richard Paling Consulting (2014) *Journey to Work Patterns in the Auckland Region*, Ministry of Transport Report.

transport mode to the City Centre. For the 2012 Integrated Transport Programme (ITP) the modelling estimated that the future modal volumes would need to be as shown in Table 1.

Table 1 - base year and future passenger volumes to the City Centre, morning peak

Mode	2010	2041
Car	34,000	33,500
Walk and cycle	5,000	26,000
Ferry	3,650	4,500
Metro rail	5,000	26,000
Bus	23,000	41,000
Total	70,650	131,000

The current Auckland public transport network (in the City Centre and surrounding area) is shown in Figure 5.

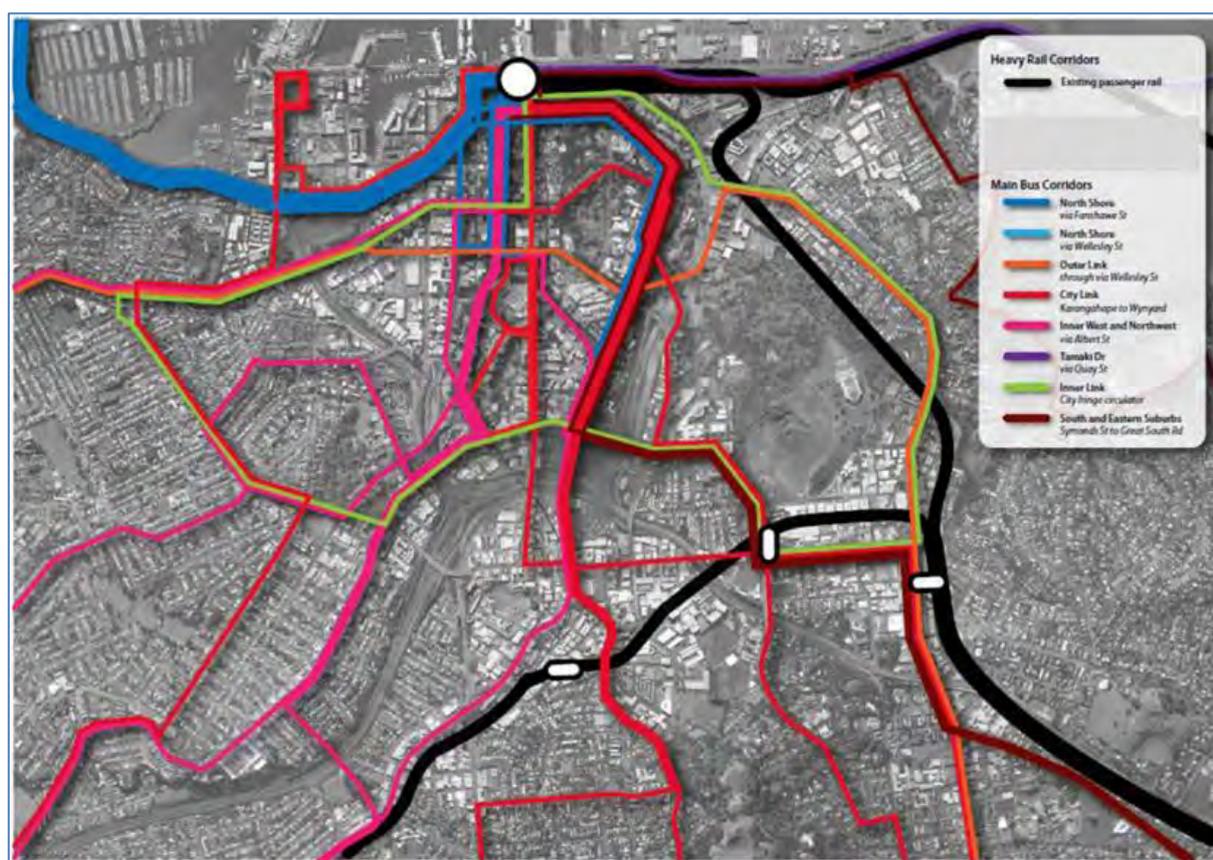


Figure 5- Current public transport network

Patronage of the Auckland bus network is unevenly distributed across space and time; some routes are very highly used to the point of overcrowding, while others have lighter passenger loadings. Over 70% of bus passengers enter the City Centre from two key points: the North Shore mainly via Fanshawe Street and the isthmus and southern areas via Symonds Street.

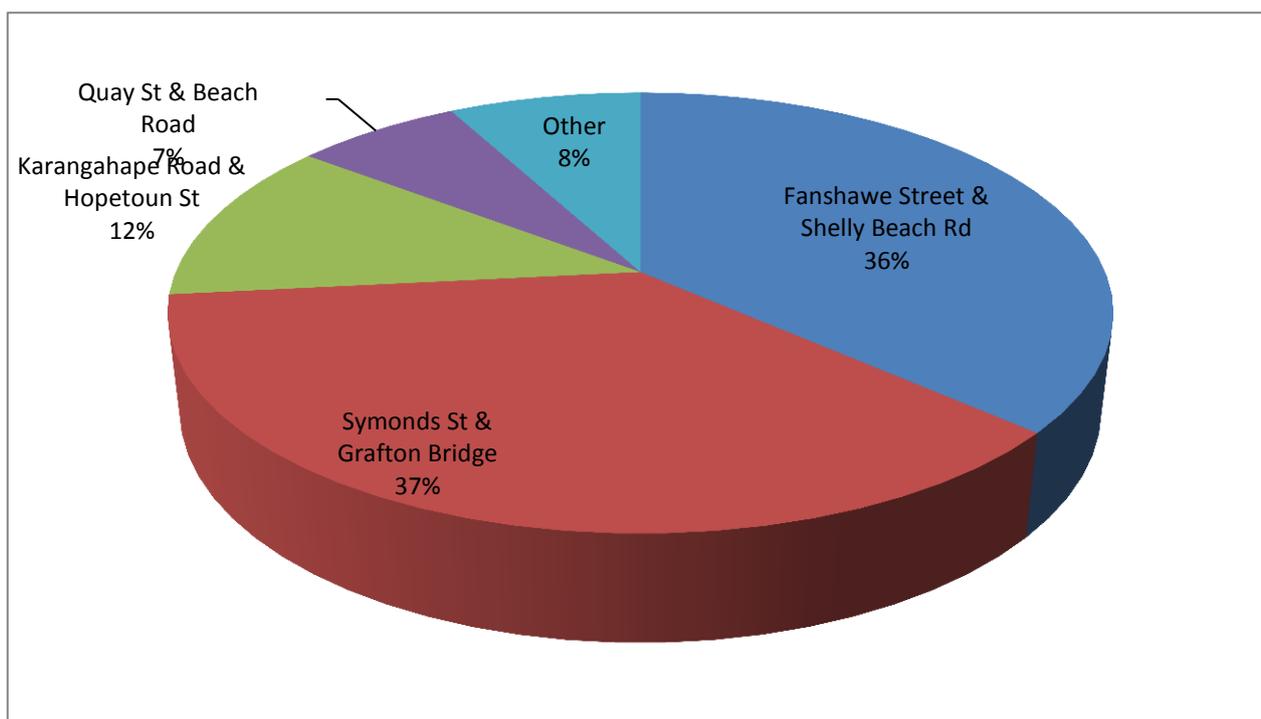


Figure 6 - Bus access points by passenger share

The bus network experiences substantial variability in service travel time which results in a poor experience for customers. They are often delayed when services are late, or left standing at stops when services are full. The performance of the bus network presents significant issues in terms of the scale of variability that is currently being experienced. A compounding factor for Auckland is the closely spaced intersections in the City Centre and short block lengths which lead to practical difficulties as multiple bus bays are required at each bus stop.

HOP tag-on and tag-off data for March 2015 were analysed to compare the actual arrival time at the final stop and the scheduled arrival time, for all buses across one weekday. These results, shown in Table 2 below, indicate consistent delays at peak times, particularly in the morning peak. There is significant variability in travel time across all times of day but especially in the peaks. Schedules already allow for increased journey time in the peaks, so the level of deviation from the scheduled time is a more useful understanding of the variability of bus travel times than journey times themselves.

Table 2- Bus travel time variability, March 2015

	Average of Minutes deviation	Std Dev of Minutes deviation
Regular bus routes		
<i>Inbound</i>		
AM Peak	7.5	11.3
Interpeak	5.6	9.3
PM Peak	6.2	13.9
Evening	6.4	13.3
<i>Outbound</i>		
AM Peak	6.6	10.9
Interpeak	5.1	7.8
PM Peak	5.4	6.8
Evening	4.1	5.8

Source: AT HOP data, March 2015

While travel time variability is shown to be one of the issues affecting the bus network, the other major issue is the high level of patronage and bus volumes as services reach the City Centre.

The busiest corridor to the City Centre is central Symonds St, in the section where the routes from Upper Symonds Street and Grafton Bridge combine to run through to the University and City Centre. This corridor averages 130 buses and 4,619 passengers per hour in the morning peak, representing one bus and 41 passengers every 27 seconds, with slightly lower levels outbound in the evening peak. These levels should be compared with the internationally accepted level for reasonable operation of 80 buses per hour and an absolute limit of 140 buses per hour.

As noted above, Symonds Street is where multiple services from the central isthmus converge; hence the emphasis for the CAP on the City Centre and its connection to the isthmus. In addition significant intensification and housing development is expected in many parts of the isthmus served by Symonds Street buses, further reinforcing its importance in terms of deepening the City Centre labour market.

Adverse City Centre amenity

Successful cities have strong and attractive centres, highlighting their role as major visitor destinations and centres of commerce, finance, education and culture. These centres need great amenity to encourage high concentrations of activity, successful business and high skilled, but mobile, international labour.

The current transport system generates significant adverse impacts on the amenity value of the City Centre, potentially undermining its current and future success. These impacts include the effects of harmful pollutants and noise from vehicles.

Furthermore, having significant numbers of people and vehicles in the City Centre also creates safety problems, particularly for those walking and cycling. The current form of many streets in the City Centre is detrimental to achieving high quality place-making by encouraging higher traffic speeds, providing low-standard pedestrian and cycling facilities and making it difficult and unsafe to cross streets.

As the main on-road public transport mode serving the City Centre core, buses contribute disproportionately to poor amenity in critical locations such as around the University, Britomart and midtown areas. The overall volume of traffic is a major adverse factor on roads that are designated for general traffic, such as Customs, Fanshawe, Nelson and Hobson streets and which are widely accepted as having low amenity values.

As shown in the analysis above, buses currently experience significant congestion levels in the heart of the City Centre. At peak times in particular, bus throughput volumes exceed the capacity of corridors, intersections and stops which results in queuing of buses along city streets. As these queues can often number six or seven buses they can create a 'wall of buses' effect over a hundred metres long in places. In addition to the noise and emissions of queuing buses adjacent to the footpath, with their potential health effects, this creates a physical and visual blockage of the corridor limiting the ability to cross the street or view the far side. This results in considerable negative impacts being reported on retailing and ground floor environments, in particular.

Through the City East West Transport (CEWT) Reference Study and subsequent investigations, several major stakeholders expressed significant concerns at the impacts of increasing and planned future bus volumes on urban amenity including visual impact. This was particularly the case where those stakeholders were investing tens of millions in developments and were concerned that the uptake or benefits of this investment would be inhibited by the noise, fumes and visual impacts of large volumes of buses. The stakeholders who expressed these concerns included the University of Auckland, Waterfront Auckland, Cooper & Co., Heart of the City and various individual landowners.

A benchmarking exercise identified that above 140 buses per hour, very poor visual amenity is experienced. Roads such as Symonds Street and Fanshawe Street are at or very close to these levels.

The degree to which Symonds Street already exceeds acceptable levels for visual amenity is illustrated in Figure 7 and in the photograph.

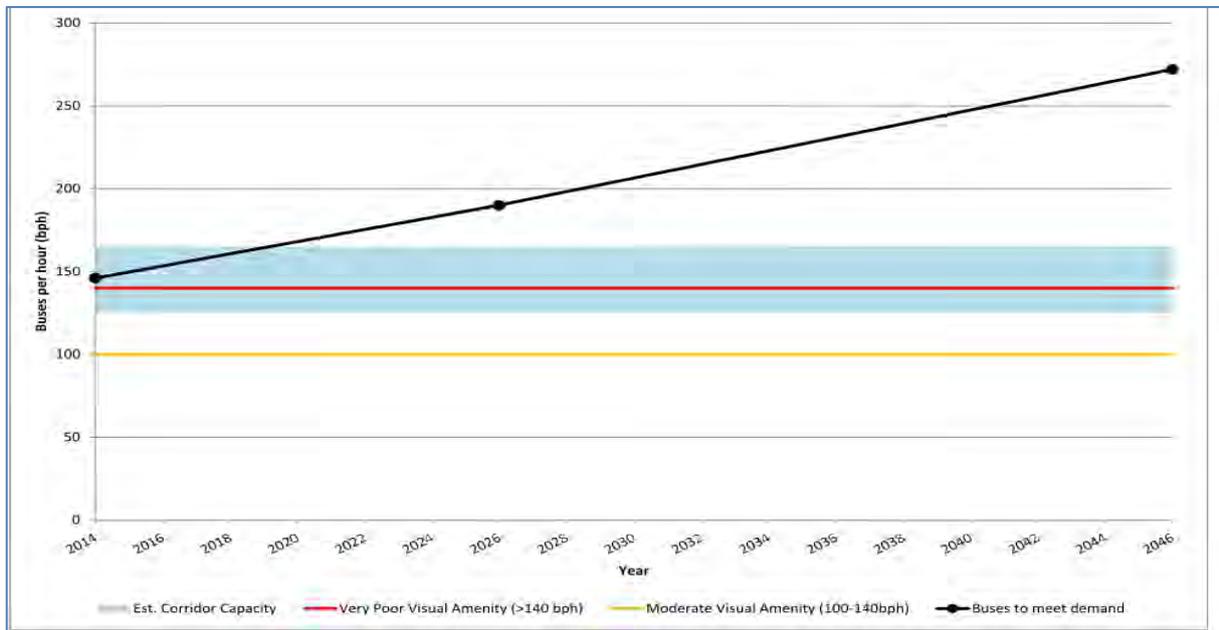


Figure 7 - Bus related amenity levels on Symonds Street



Urgency

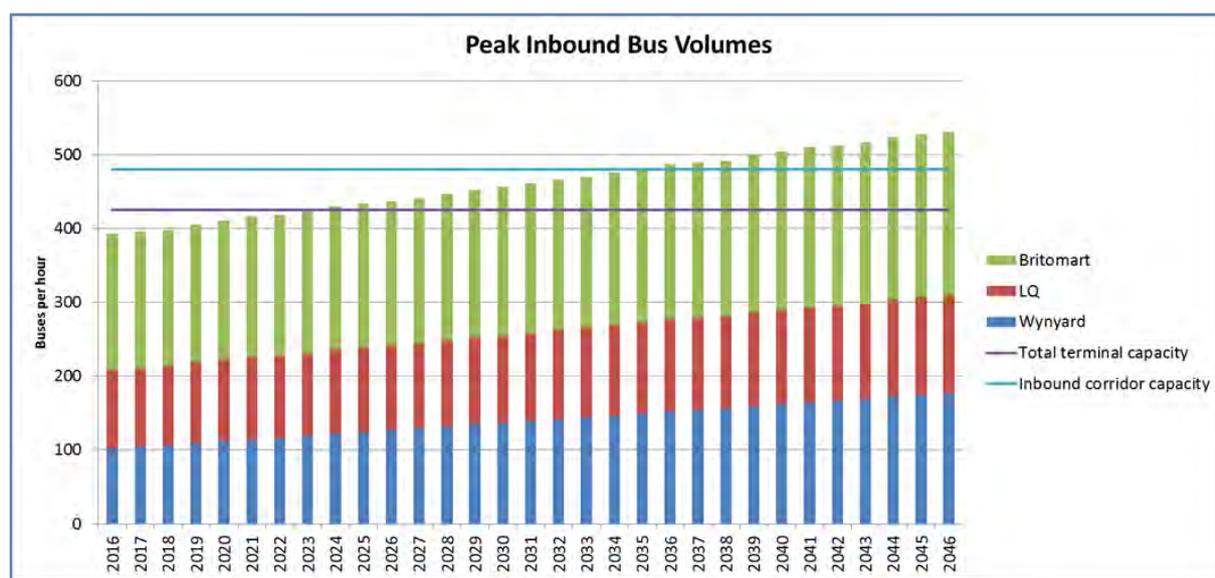
Patronage on the Auckland public transport network has been growing rapidly, averaging 7% pa on the bus network and 18% on metro rail, exceeding even the rapid population growth rate. In response, AT has improvement plans that are currently being implemented to maximise the effectiveness of the bus and rail networks.

The “New Network” follows the principle of having fewer but more frequent routes with increased interchanging to provide effective connections between Auckland’s multiple origins and destinations. It will streamline bus routes through the City Centre and new terminals in the Learning Quarter and at Wynyard Quarter are planned to optimise operational effectiveness. Increased capacity buses have been introduced in the form of double-decker buses to provided increased vehicle capacity on core routes. These improvements are targeted at addressing existing bus congestion issues which are impacting negatively on both bus customers and the City Centre environment now.

Looking ahead, AT has undertaken bus operational assessments which more precisely define the bus network required in the future, and the infrastructure required to support it. The improvements have been planned to be complementary to the CRL. Even with the CRL in place, however, there will be many parts of the city which cannot be served by metro rail, which generate high numbers of public transport users and where providing sufficient public transport capacity is increasingly problematic. These areas include the central isthmus, which is targeted for greater residential intensification to help address the need for more (and more affordable) housing.

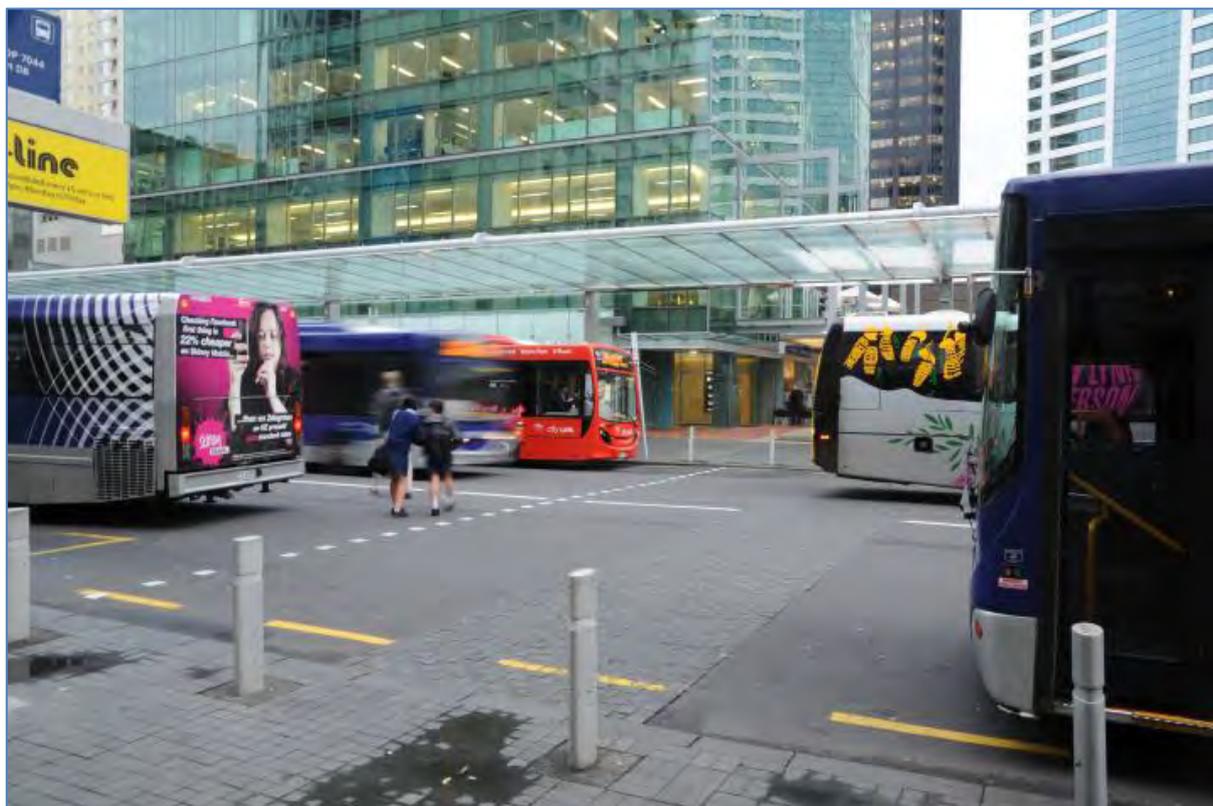
AT studies show that conditions will rapidly return to being above acceptable levels and continue to worsen despite these actions. The detrimental amenity effects of a congested bus network are significant. Without a series of coordinated interventions, the ability of the public transport network to service the growing demand for travel is likely to be a major constraint on Auckland’s growth and prosperity. An analysis by MRC shows accessibility of the City Centre is expected to fall so that by 2026 the accessible labour pool will be 18% lower than would otherwise be the case. Given the importance of the Auckland City Centre for New Zealand’s economy and Government priority for productivity, such an unacceptable outcome highlights the urgency for the CAP.

A further issue relates to the ability to terminate buses in the City Centre. The capacity is approximately 420 buses which is anticipated to be reached by around 2024.



The available capacity includes Lower Queen Street. As illustrated in the photograph below, the use of what should be a prime location central city location is far from ideal.

This lack of terminal capacity is another significant factor in the urgency for a CAP. Moving to more double-decker buses will not be able to address the terminal issue as they need additional time for loading and unloading passengers.



Section 3.4, *The Status of the Existing Evidence Base* references more supporting evidence for the problems, and is supported by a substantial background report.

The Investment Logic Map is attached as Appendix A

3.2 The Benefits of Investment

The potential benefits of successfully investing to address these problems in a CAP were identified as part of the second facilitated investment logic mapping held on 10/09/2015 with a benefits workshop on 19/10/2015. The stakeholder panel identified and agreed the following potential benefits for the proposal:

- **Benefit one:** Auckland's prosperity & growth are enabled
- **Benefit two:** More efficient & cost-effective transport network & services
- **Benefit three:** City centre is attractive, vibrant, healthy and safe.

The Benefit Map is attached as Appendix B

The benefits as identified by the representatives of the three partner organisations therefore covered two broad outcomes to be delivered. The first relates to the first and second benefits and is concerned with supporting growth – economic and population – and the quality of the City Centre. The third (intermediate) outcome, represented by the third benefit, is more directly related to improvements in the transport system.

The intermediate outcome is required to enable the economic and amenity outcomes to be achieved.

3.3 The Key Performance Attributes and Measures

This section gives the performance attributes and measures that will be used to judge how the potential investment achieves the benefits sought.

Benefit	Investment KPI	Measure
Auckland's prosperity and growth are enabled	Increased access to city centre	No of workers within 45 mins by PT & walk /cycle & 30 mins by car to Centre at peak
		No. of people within 45 mins by PT & walk /cycle & 30 mins by car to Centre at peak
City centre is attractive, vibrant, healthy and safe	Increased match between volume to capacity-City Centre routes over time	No of people per hour by major corridor at LoS D or better in peak periods
		Reduction in environmental impacts of transport in Centre City
	Increased safety for all road users	No.of pedestrians & cyclists exposed to transport-related pollution over specified levels
		No of deaths and serious injuries in road crashes within the City Centre
More efficient & cost-effective transport network & services	Increase in City Centre amenity	Rating against key amenity criteria TBC
	Increased travel efficiency in City Centre	Peak and off-peak travel time, by mode, between selected origins & destinations
		% fare box recovery on public transport
	Increased travel reliability	Travel time variability by mode-peak & off-peak
		Travel time variability by major corridor - peak & off-peak
	Increased public transport user customer experience	Customer satisfaction rating
No. of bus passengers left behind		

3.4 Status of the Existing Evidence Base

As a result of multiple investigations carried out by AT and its partner agencies, the evidence base is extensive. The CCFAS and the reference document, *Central Access Strategy Report*², contain a wealth of analysis that demonstrates the problem and the need for a CAP. Appendix C illustrates some of the content of the information available. In particular, a deficiency analysis provides a quantified assessment of how the problems will get worse over time.

The MRCagney Report *Labour pool catchment of City Centre: methodology and results, October 2015* is also an important resource to demonstrate the high probability of diminishing City Centre access.

²Central Access Strategy Report, AT, September 2015

4. STRATEGIC CONTEXT

4.1 Organisational Overview

AT is the strategic transport planning authority for Auckland. It also contracts for public transport (via PTOM contracts). AT is responsible for the statutory Regional Land Transport Plan (RLTP)³ and Regional Public Transport Plan⁴.

Council is the statutory planning authority, being responsible for the Unitary Plan (the PAUP⁵ at present) under the Resource Management Act 1991. It also rates for and co-funds public transport (with the Transport Agency). Council produced the Auckland Plan which links all the main dimensions that are important for Auckland's future including economic development, transport and housing.

The **NZ Transport Agency's** purpose is to *Create transport solutions for a thriving New Zealand*. It does this by:

- Investing in performance; i.e. allocating funds from the National Land Transport Fund
- Regulating access and use; i.e. driver and vehicle licensing
- Providing national activities; i.e. advertising and education, funding research, and operating and improving the state highway network.

4.2 Organisational Outcomes, Impacts and Objectives

4.2.1 Alignment

Whilst the three partnering organisations have differing statutory roles and functions their objectives in terms of access to central Auckland are broadly aligned. Naturally, Council has an emphasis on outcomes to be gained in terms of the economic and environmental health of the City Centre whilst the Transport Agency and AT are more focused on the intermediate outcomes represented by the transport related benefits.

Council

Auckland Council's desired outcomes and objectives are set out in a set of adopted plans. The principal document is the statutory Auckland Plan. The Auckland Plan is supported in terms of policy by the City Centre Masterplan and the Waterfront Plan.

Auckland Plan

Council's high level expectations for Auckland are given in the Auckland Plan, adopted in June 2012. It provides the overarching strategic framework for the long term development of Auckland. It sets out the vision and the outcomes, principles and transformative shifts required.

Achievement of the Auckland Plan's overall objectives and growth projections has the following components:

- Making a Quality Compact Auckland Work: introduces the concept of "development areas" to accommodate growth based around town centres, corridors and suburban areas contiguous to town centres. The development areas have good transport access

³Auckland Regional Land Transport Plan (RLTP) 2015-25, Auckland Transport, July 2015

⁴The Auckland Regional Public Transport Plan 2013 (RPTP), prepared by Auckland Transport, is the statutory document that describes the public transport network that Auckland Transport proposes for the region, identifies the services that are integral to that network over the next 10 years, and sets out the policies and procedures that apply to those services.

⁵ Proposed Auckland Unitary Plan

leveraging off past and future investment in Auckland's rapid transport network (RTN) and around commuter rail stations.

- Development Strategy (urban core)⁶: the development strategy is designed to focus new development around the current and planned future RTN and horizontal infrastructure provision, with urban intensification around metropolitan centres, town centres and corridors.
- Key structural Shapers and Enablers: Critical infrastructure, integration of land use and transport, blue and green networks and the principal economic gateways of the ports and airport.
- Two Big Initiatives: transformational change to the City Centre to create a global city and destination of international significance; and the southern initiative that concentrates on addressing social needs.
- Working and Delivering with Others: achieving the objectives of the Plan through collaboration and commitment to transformational shifts and strategic directions.

Two Council plans will help implement the Auckland Plan over its first 10 years:

- the PAUP
- the Long-term Plan (LTP), under the Local Government Act 2002, which provides the funding to deliver the Auckland Plan on a staged basis.

City Centre Masterplan and Waterfront Plan

The City Centre Masterplan⁷ (CCMP) is a non-statutory document that expands on the Auckland Plan.

It sets out the Council's goals for the City Centre as a globally significant centre for business - the Engine Room of the Auckland economy with a vibrant and vital retail and commercial core. It specifies targets relating to commercial occupancy rates and an increase in the number of top 200 business head offices.

The CCMP also includes policies relating to increasing urban living and ensuring that major cultural institutions of quality are located in the City Centre to provide professional and international cultural events. The City Centre is seen as becoming the hub of an integrated regional transport system - with a range of public transport options.

Enhanced public transport is specified as a vital enabler of the CCMP's aspirations for the City Centre to enable easy access to its employment opportunities and other offerings.

Similarly, the Waterfront Plan⁸ envisages that over the next 30 years Auckland's waterfront redevelopment will directly and indirectly contribute to a total of 40,000 jobs for Auckland. A goal for the waterfront is to be a place that is "highly accessible, easy to get to and to move around in, where people feel connected to the wider city and beyond by improved pedestrian and cycling linkages, fast, frequent and low-impact passenger transport".

The CCMP and Waterfront Plan help drive the process to transform the City Centre.

⁶Ibid, page 55

⁷City Centre Masterplan, Auckland Council, 2012

⁸The Water Front Plan, Waterfront Auckland, June 2012

4.2.2 AT

The Board of AT has adopted the following set of priorities which relate to the Auckland Plan directions:

		Auckland Plan strategic directions				
		Increased access to a wider range of quality, affordable transport choices	Auckland's transport system moves people and goods efficiently	Auckland's transport system enables growth in a way that supports communities and a high-quality urban form	Reduce adverse effects from Auckland's transport system	Better use of transport investment
AT strategic themes	Prioritise rapid, high frequency public transport	Strong	Moderate	Moderate	Minor	Strong
	Transform and elevate customer focus and experience	Strong	Minor	Moderate	Strong	
	Build network optimisation and resilience	Moderate	Strong	Minor		Minor
	Ensure a sustainable funding model					Strong
	Implement accelerated, adaptive, innovative solutions	Strong	Moderate	Moderate	Strong	Moderate

The strategic themes are strongly correlated to the direct transport benefits identified in the ILM.

AT published the non-statutory Integrated Transport Programme (ITP)⁹ prepared jointly with the Transport Agency in 2012 and with input and support from Council.

The analysis for the ITP showed that from 2021, congestion in Auckland was expected to significantly worsen, as road capacity increase slows and population growth starts to outpace infrastructure investment. With Auckland's rapidly growing population, the demand for travel over the next 30 years is expected to increase by around 50 per cent, for person trips, while numbers of freight and commercial trips are expected to more than double.

The ITP identified that despite network improvements underway, average variability in journey times would still be significantly higher in Auckland than in any of the five big Australian cities. Auckland compared well on inter-peak congestion but peak congestion levels were shown to be on a par with Sydney and Melbourne which have populations over four million.

⁹ 2012 - 2041 Integrated Transport Programme Auckland Transport

4.2.3 The Transport Agency

The 2015 Statement of Performance Expectations for the Transport Agency¹⁰ gives its overall function as *Planning and Investing in the Land Transport Network*. Its Services and Investment are defined as:

- Investment management
- Public transport
- Road safety promotion
- Local road improvements
- Walking and cycling

The Transport Agency has the Goal:

- Integrate one effective and resilient network for customers;

It has two Objectives that are relevant for the CAP:

- Integrate land uses and transport networks to shape demand at national, regional and local levels
- Integrate national and local transport networks to support strategic connections and travel choice

The Agency thus is also focused on resolving the direct transport issues, but also recognises the importance of the land use components.

4.3 Alignment to Existing Strategies/Organisational Goals

4.3.1 Council

Given the emphasis in the Auckland Plan on a well-functioning City Centre that is economically highly productive and which supports a high growth in employment, educational places and residences, developing a successful CAP is clearly important to Council and consistent with its priorities.

4.3.2 AT

At present the CAP does not include any specific solution. However, any solution is likely to require the attributes of rapid, high frequency public transport with a focus on the customer and, perhaps, innovation. As such the solution would be well-aligned to the AT themes.

AT has two main statutory documents that set its policy context. The RPTP vision is: “an integrated, efficient, and effective public transport network that offers a wider range of trips and is the mode of choice for an increasing number of Aucklanders”.

“To achieve this vision, Auckland’s public transport system needs to deliver the following outcomes:

- Services that align with future land use patterns
- Services that meet customer needs
- Increased passenger numbers
- Increased public transport mode share
- Improved value for money.”

Addressing the strategic issues relating to access to the City Centre is in accordance with the RPTP aims.

The RLTP states that: “all funding decisions and delivery agencies are aligned toward the need to address:

¹⁰ NZ Transport Agency Statement of Performance Expectations 2015/16

- Growth: infrastructure is required to support Auckland's increase in new housing, jobs, student numbers and tourists.
- Congestion: long-standing issues with traffic flows will only get worse as Auckland grows. Public transport is one dimension but investment to support freight movement and improve key road corridors is needed.
- Business-as-usual: a large stock of existing infrastructure investments needs to be maintained, and safety and environmental factors kept to the fore."

Addressing the City Centre access issues will be fully in accordance with the first two RLTP priorities, whilst safety and environmental priorities are also included.

4.3.3 The Transport Agency

The main document that sets out the Transport Agency's priorities is the National Land Transport Programme (NLTP). The NLTP is required to respond to the GPS. With respect to public transport and Auckland. The GPS¹¹ states within the objective of: "*A land transport system that addresses current and future demand for access to economic and social opportunities:*

"Well used and configured public transport can increase network productivity on key corridors at peak periods when they are under the most pressure. For example, while constraints on Auckland rail capacity are not expected in the next decade, as a result of the significant additional capacity on new electric trains¹², bus congestion in the Auckland central business district is expected to emerge as patronage grows and additional services are provided¹³. GPS 2015 will enable:

- *public transport to be provided and developed at levels appropriate to their patronage and network function*
- *improvements to metro rail services to be completed, and integrated ticketing and public transport network changes introduced to increase patronage, including transfer and interchange facilities*
- *targeted infrastructure improvements that improve transfers across the network and address emerging bus capacity constraints in central Auckland, Wellington and Christchurch*
- *gains in public transport productivity."*¹⁴

The Statement of Performance Expectations gives priorities which include:

- Predictable journeys for urban customers
- Align investment to agreed national, regional and local outcomes, and improve value for money in all we invest in and deliver
- Ensure effective and efficient co-investment with our partners

¹¹ Government Policy Statement on Land Transport 2015/16 – 2024/25, December 2014

¹² Recent very rapid patronage growth on the rail network would test this comment

¹³ Emphasis added

¹⁴ Ibid, page 19

5. ANTICIPATED STRATEGIC FIT & EFFECTIVENESS

At this stage in developing the CAP it is not appropriate to allocate a specific rating. It is however expected that the solution needs to be *High* for both Strategic Fit and for Effectiveness.

Strategic Fit

According to the [Investment Assessment Framework - quick reference guide Version 2 \(January 2015\)](#), a public transport programme may be given a medium rating for strategic fit if, in the short to medium term, there is a positive contribution to:

- providing access to social and economic opportunities

A high rating for strategic fit must only be given to a public transport programme if, in addition to meeting the criteria for “medium”, the problem, issue or opportunity is:

- severe congestion in major urban areas (evidenced in travel time and journey reliability on main corridors and arterials across the network)

In this instance, as demonstrated in Section 3.1, both criteria are met and a *High* for Strategic Fit is therefore appropriate.

Effectiveness

An investment programme is assessed for effectiveness using six criteria:

- Outcomes focussed
- Integrated
- Correctly scoped
- Affordable
- Timely
- Confidence

The CAP would be expected to meet all these criteria, though until a specific action programme has been identified the affordability is less certain. A *High* rating is therefore also likely.

Outcomes Focussed: The CAP is strongly targeting the economic and amenity outcomes for the City Centre as well as the outcomes for the transport system.

Integrated: The CAP is of necessity integrated into AT’s wider transport planning, for example following on from the CRL and New Network.

Correctly scoped: The Programme or Indicative Business Case will assess the alternative levels and forms of investment to ensure the right option is selected and right-sized.

Timely: It has been shown in this Strategic Case that the CAP is certain to be needed in the short to medium term.

Confidence: With a strong partnership approach and clear and compelling problems there is confidence that the investment is required. As a major organisation AT has the ability to deliver.

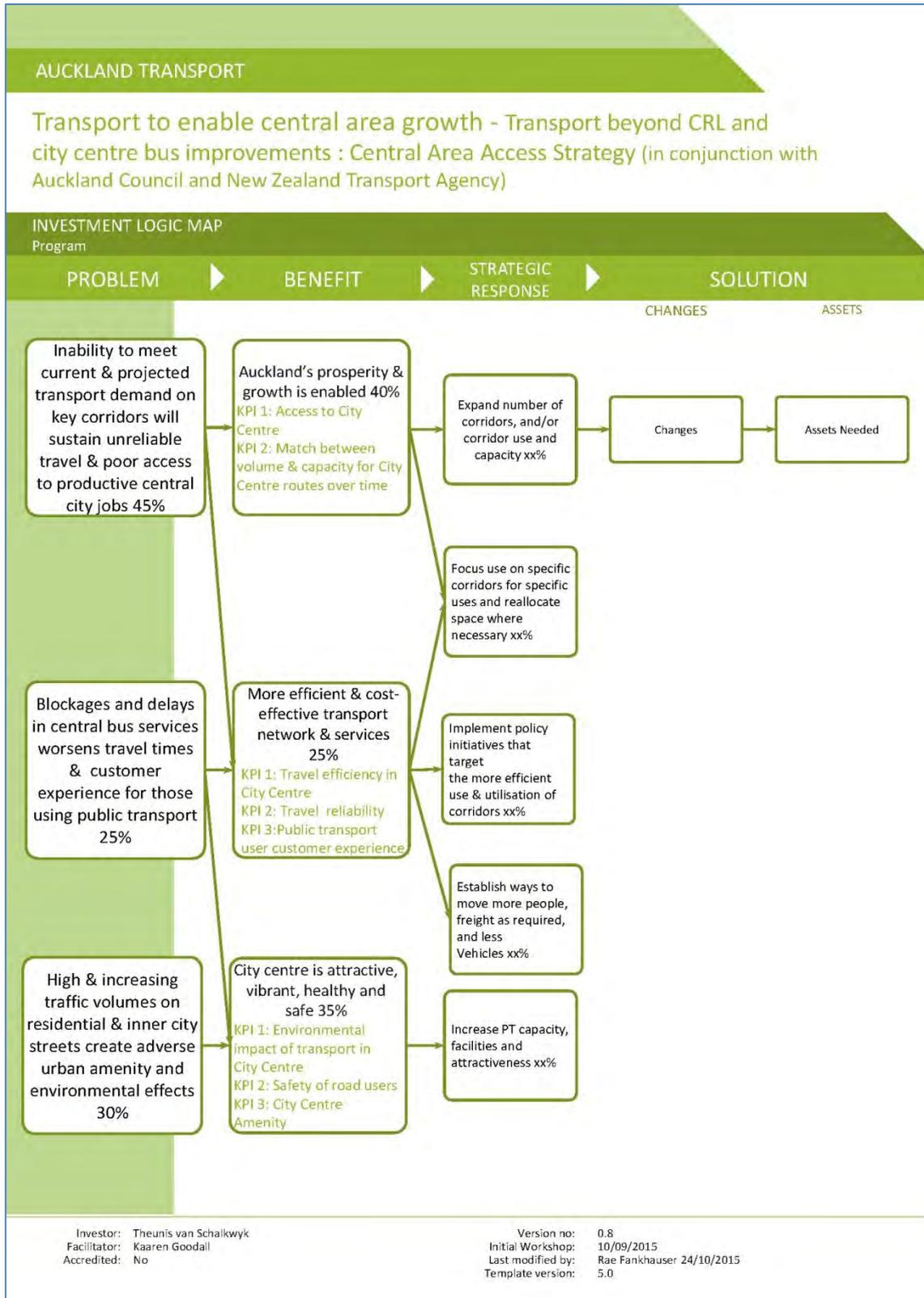
6. KEY FINDINGS/CONCLUSIONS AND NEXT STEPS

The principal findings in the Strategic Case relate to the case for change. They are:

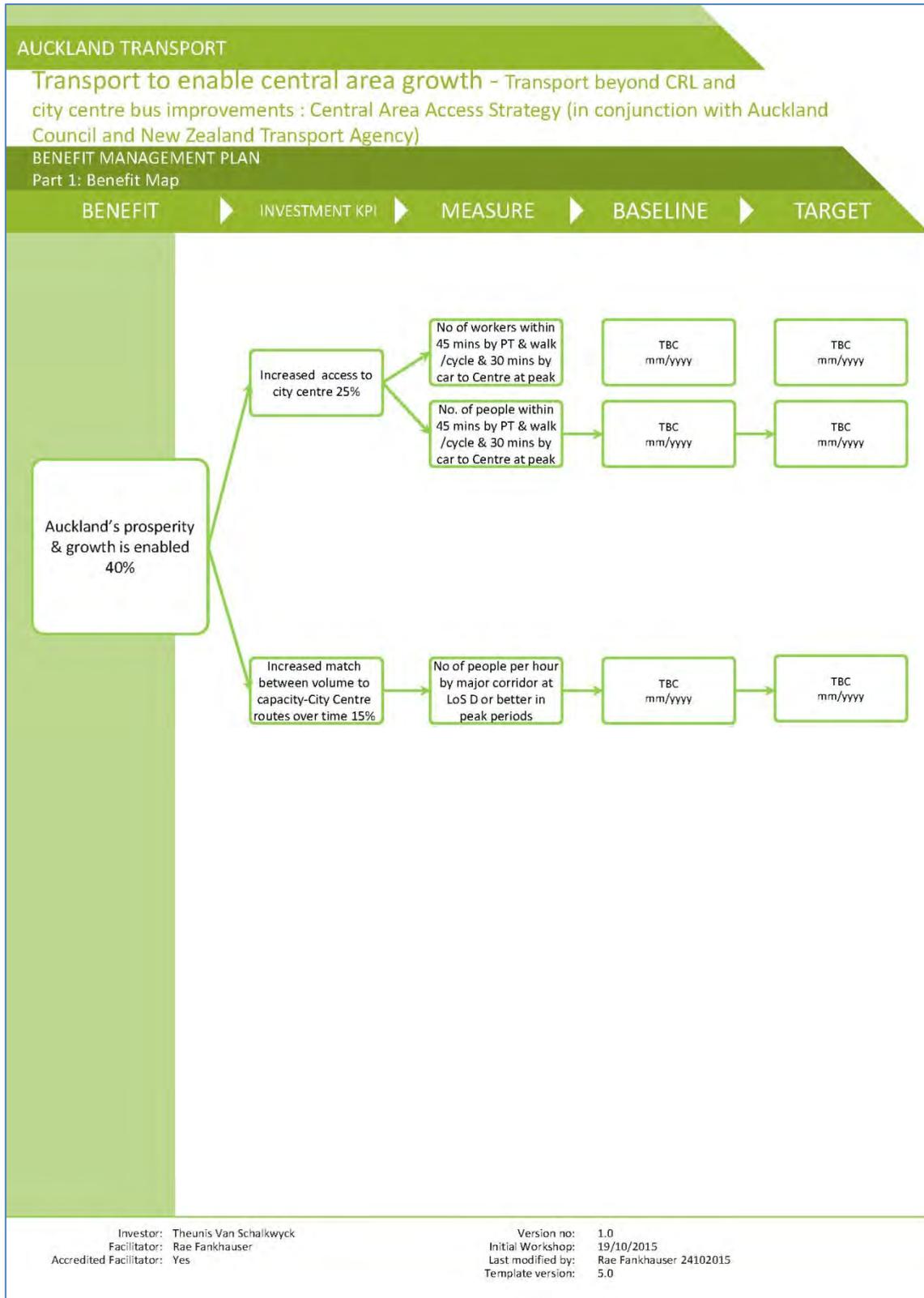
Problems Identified in the ILM / Other	Key Findings in the Strategic Case	Conclusions
Problem one: Inability to meet current & projected transport demand on key corridors will sustain unreliable travel & poor access to productive central city jobs.	The evidence confirms that multiple corridors approaching and through Auckland City Centre (especially from the isthmus) have restricted ability to provide the level of accessibility required as Auckland grows. Without an ability to service the Central City, the forecast growth in jobs will not be able to be achieved severely damaging Auckland's productivity	Increasing accessibility to New Zealand's most productive precinct is essential – but is at risk with declining accessibility expected in the base case.
Problem two: Blockages and delays in central bus services worsens travel times & customer experience for those using public transport	The evidence base demonstrates the restricted nature of Auckland's bus corridors and the snowball effect of services not being able to access bus stops, which is compounded by some of the short city block lengths between traffic signals	Detailed operational analysis has shown that Auckland City Centre and principal approaches have reached their operational limits for the number of bus services that can be accommodated. Internationally recognised practical limits have been reached already on Symonds Street.
Problem three: High & increasing traffic volumes on residential & inner city streets create adverse urban amenity and environmental effects.	General traffic in the City Centre is directed towards streets with lower amenity and little pedestrian traffic such as Nelson and Hobson Street. Where larger numbers of buses are concentrated, some of Auckland's key stakeholders are already raising issues of the "wall of metal". Areas including Lower Queen Street have been identified for their poor amenity owing to bus volumes and where there are also many pedestrians with high exposure to emissions	Good amenity is itself important for the City Centre's economic productivity. The amenity on some important streets in and approaching the City Centre is poor. On certain streets where the poor amenity is associated with bus numbers, the amenity can be expected to worsen over time as bus numbers must increase substantially to service Auckland's growing population and despite increased use of metro rail. Numbers of pedestrians and cyclists will also increase and therefore there will be higher exposure. By contrast, car numbers are expected to be largely static in the City Centre

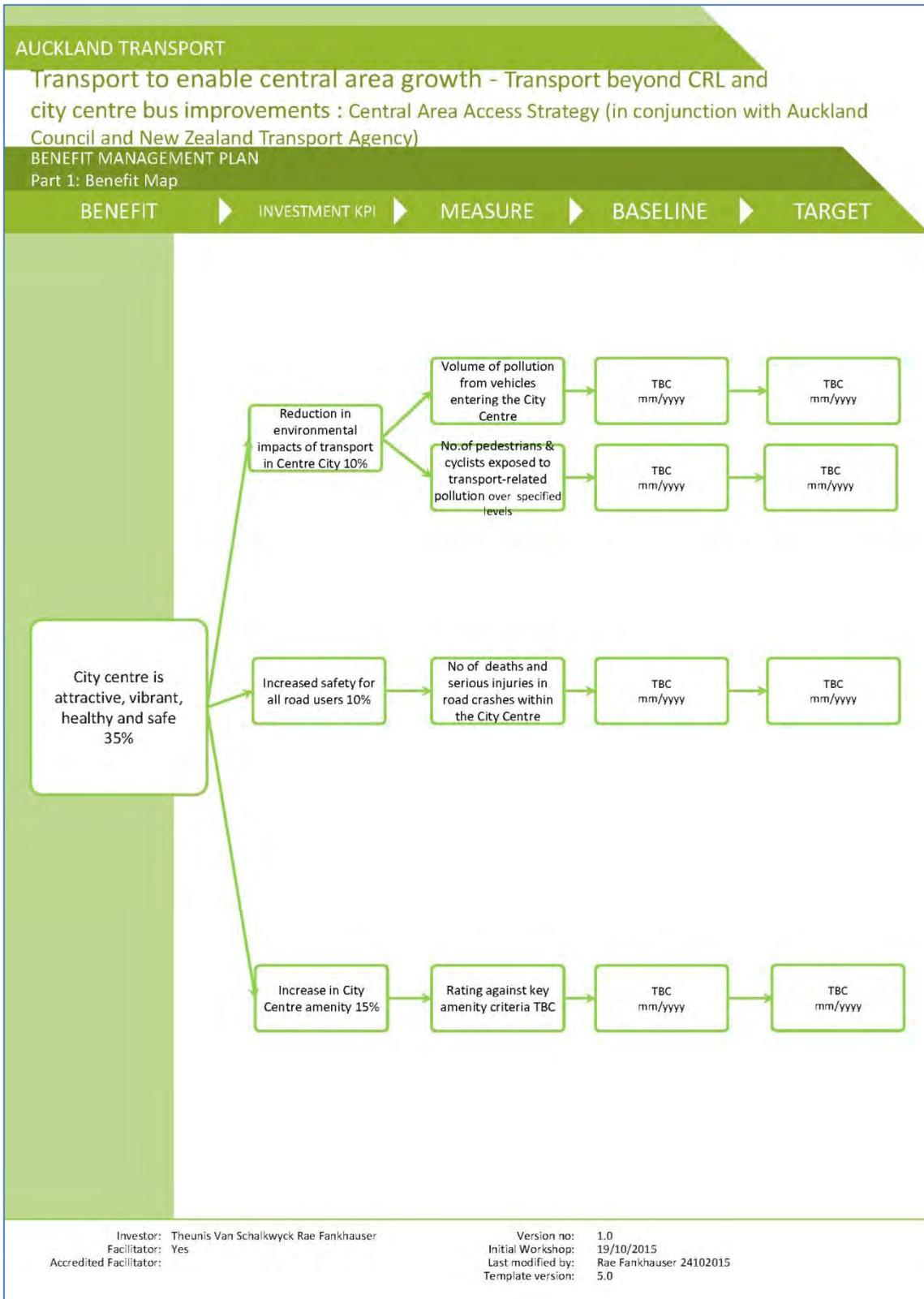
There is very strong evidence for the problems identified in the ILM workshop. It is recommended that the CAP proceed to the Programme or Indicative Business Case phase to determine the likely make-up of the CAP that best delivers the benefits and provides value-for-money.

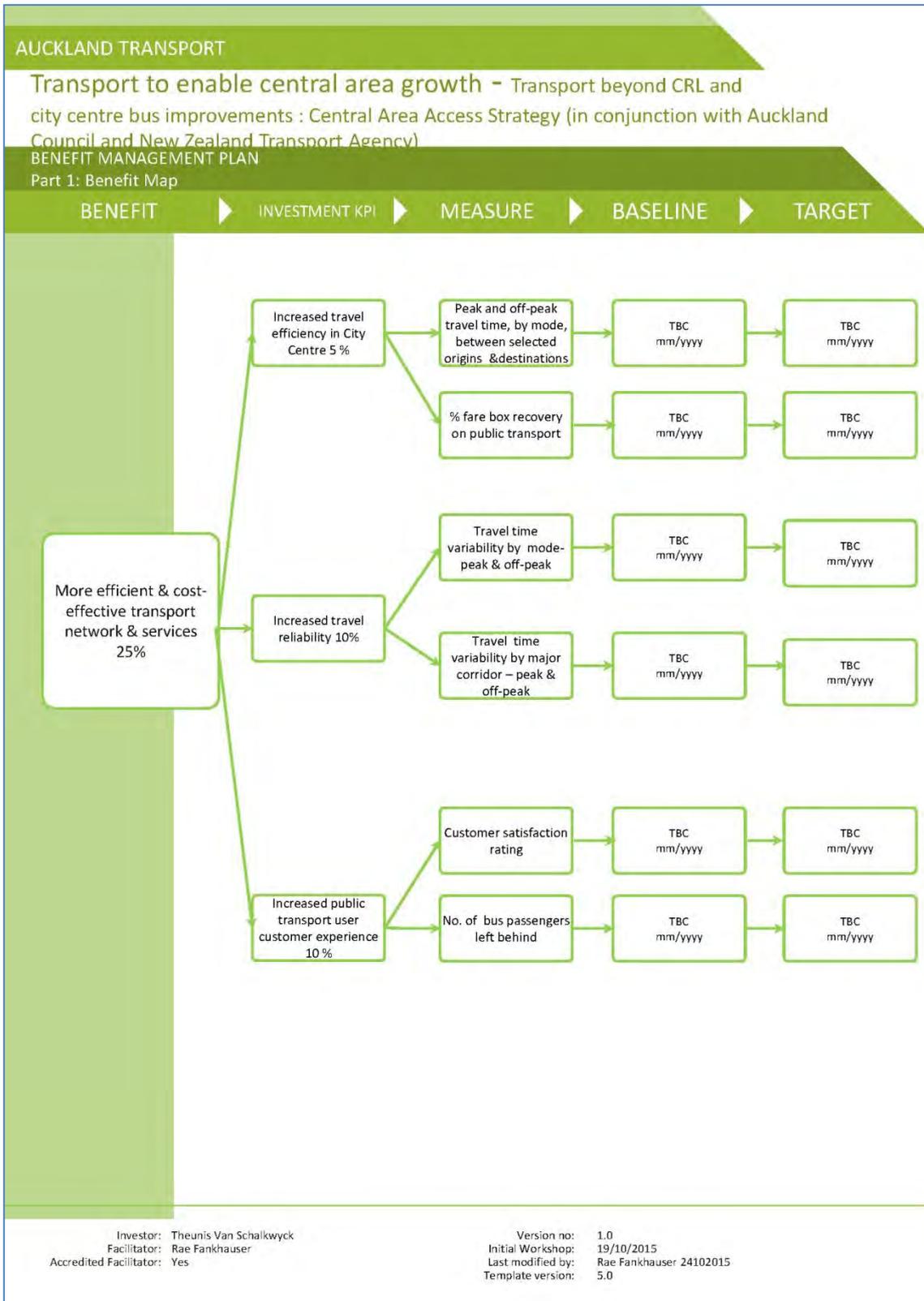
APPENDIX A - INVESTMENT LOGIC MAP



APPENDIX B – BENEFITS MAP







APPENDIX C - BACKGROUND INFORMATION

Current Transport Conditions

The current state of the transport network in and around the City Centre is described in this section. It demonstrates that there are currently significant issues with the public transport network in terms of travel time variability and reliability, service overcrowding and bus congestion especially within the City Centre. As the City Centre continues to grow, so too will the need to provide additional capacity for travel and people movement. It is unrealistic to continue to accommodate this growth through private vehicle travel, and growth will need to be delivered by other modes – being predominantly public transport with an important role played by walking and cycling. The analysis particularly focuses on the longer-term as earlier sections of the Strategic Case demonstrate the more immediate problems.

Table 0-3 Bus patronage on key City Centre approaches

Approach to City Centre	AM Peak inbound (7am-9am)			Interpeak average both directions (9am-4pm)			PM Peak outbound (4pm-6pm)		
	Buses per hour	Passengers per hour	Average Occupancy	Buses per hour	Passengers per hour	Average Occupancy	Buses per hour	Passengers per hour	Average Occupancy
Fanshawe St @ Wynyard	111	4,715	42.5	30	731	24.4	96	3840	40.0
Nelson St/Hobson St ramps	11	333	30.3	0	-	-	24	273	11.4
Karangahape Rd/Great North Rd	42	1,145	27.3	23.5	266	11.3	37	899	24.3
Upper Queen St	31	720	23.2	6	67	11.2	3	124	41.3
Upper Symonds St	86	3,479	40.5	42	812	19.3	87	2698	31.0
Central Symonds St	130	4,619	35.5	60	1,210	20.2	114	3549	31.1
Tamaki Dr	19	594	31.3	9.5	103	10.8	20	481	24.1

Source: AT HOP data, March 2015

Future Transport Conditions

As the City continues to grow, the problems will inevitably get worse as higher numbers of people need to be accommodated on the transport network given the scale of population growth in Auckland. This section looks at the expected future scale and timing of the problems.

The JMAC¹⁵ regional transport models have been applied using 2026 and 2046 as the planning horizons, representing a medium term (~10 years) and long term (~30 years) outlook. As noted in Section 3.4 above, the City Centre is expected to have around a 50% increase in job numbers and education places in the next 30 years.

Deficiency analysis

A deficiency analysis was undertaken to determine the likely location, scale and timing of the problems and issues that will affect the public transport network. The focus of the deficiency analysis

¹⁵ Joint Modelling Applications Centre – the partnership between AT, Council and the Transport Agency

was comparing the demand for travel on public transport with the projected capacity of the system comprising different services vehicle capacities and frequencies.

A key component of the deficiency analysis was establishing the appropriate base case of a default transport network and the expected land use scenario (comprising employment and population projections). The reference case does not necessarily represent a do minimum in the sense of an economic evaluation.

The transport network in the reference case consists of the Approved Transport Programme (2015). This programme includes a mixture of road and public transport projects. Five major bus infrastructure projects are included in the reference case:

- Wynyard interchange
- Learning Quarter bus facilities
- Downtown interchange
- Fanshawe Street corridor
- Wellesley Street corridor.

The inclusion of these projects in the reference case is linked with the New Network, as these projects provide the necessary infrastructure to successfully implement the New Network and achieve increases in bus performance compared with current operations.

A single land use scenario was used for the analysis including the reference case. This was Scenario I Modified 8b, which is consistent with the planning and assessment of recent major projects and represents a medium growth scenario for Auckland. As the PAUP process evolves, this may impact the land use planning in terms of permitted levels of development. Decisions relating to significant transport infrastructure also have the ability to shape and influence land use which may be permitted under the PAUP changes.

Data from the JMAC Auckland Passenger Transport (APT) model was provided for the AM peak period in 2026 and 2046. Model outputs were provided on both a link (road or rail section) and public transport route basis as this allowed for identification of deficiencies in public transport segments as well as individual bus routes and train services.

In general, the rail network has sufficient capacity to meet future demand. Some modelled services have demand levels that are above the planning capacity in 2026 and 2046 on the eastern and southern lines indicating these services are well utilised. The increased demand and performance of the rail network is due to the increased number of services through the city provided by the CRL. Without the CRL, the capacity of the rail network would be severely restricted. The CRL allows more train services to be provided and better serve the City Centre, attracting both new passengers and those from crowded bus services.

Principal results

The results show that there are significant portions of the bus network which will not have sufficient capacity to cater for expected demand in 2026 and 2046. The volume to capacity ratio (VCR) plot for 2046 is shown below in Figure 8. Where a VCR is less than 1.0, it represents points where sufficient capacity exists in the network, while a VCR greater than 1.0 represents points where demand exceeds capacity.

The VCR analysis is carried out at a link (road section) level, so demands and capacities are summed across all services using that link. This can mean that the link may have a VCR less than 1.0, but certain individual services using that link could have VCRs greater than 1.0. This therefore presents a best case scenario across the network as demand and capacity are effectively 'averaged'.

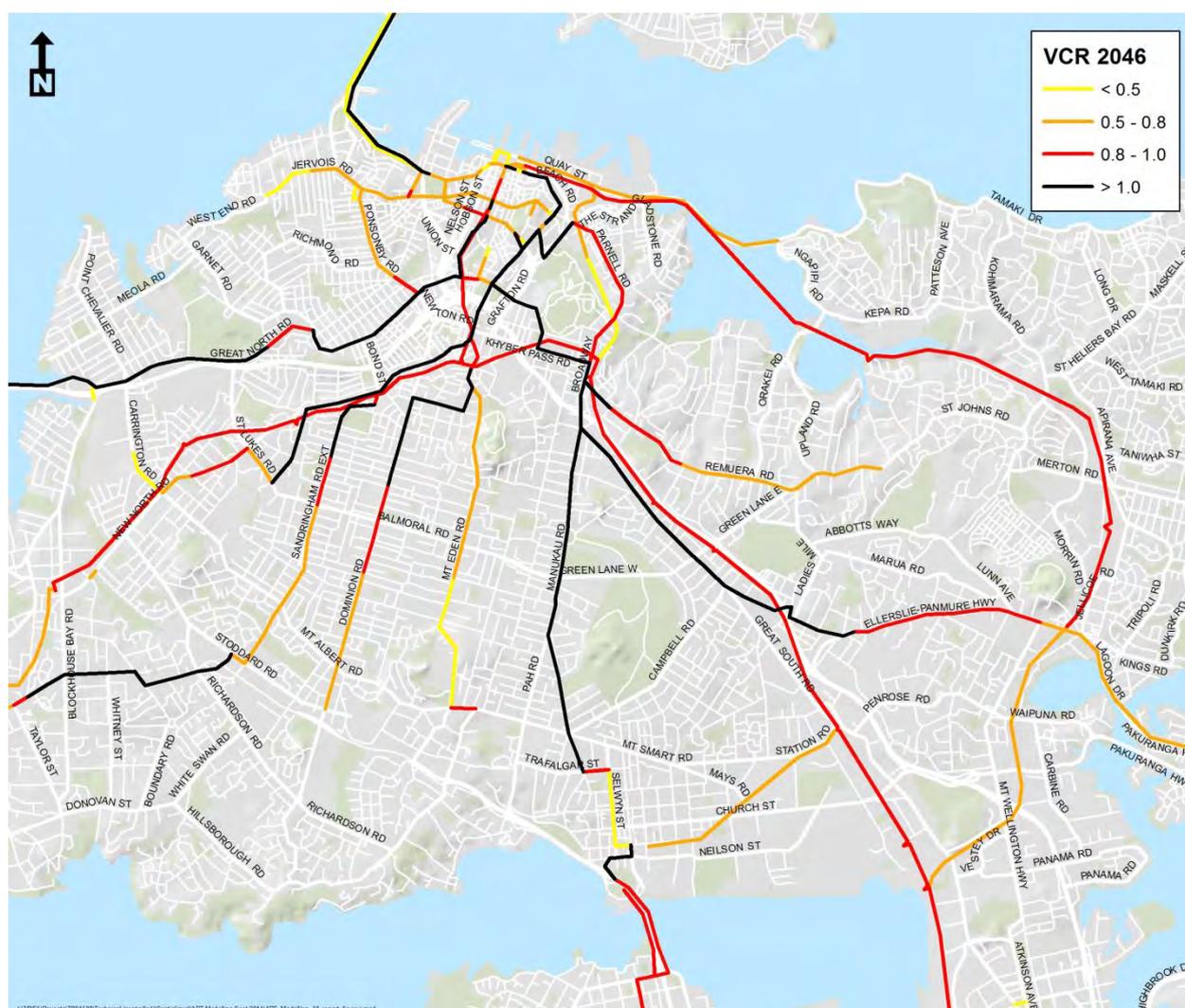


Figure 8 2046 PT service volume-capacity ratios

This analysis shows that by 2046 most inbound routes reach capacity well before they enter the City Centre. This is despite many links in the City Centre having high frequencies of more than 150 buses per hour. This equates to more than 2.5 buses per minute in the AM peak which will result in significant operational issues on most corridors with the closely spaced intersections and short block lengths. There is a need to have more than four bus bays at each bus stop which is problematic for operations.

Well before 2046, extra capacity will be required on or parallel to Symonds Street for public transport customers arriving from the greater Isthmus area. Even with the modelled 184 buses per hour on Symonds Street in 2046, demand will be approximately 1.5 times the available capacity, assuming an even loading across all bus services. Extra capacity will also be necessary for commuters arriving in the city from north of the Harbour Bridge.

Outside the City Centre, Great North, New North, Sandringham, Dominion, Manukau, Mt Eden and Great South roads all require extra bus capacity as they approach central Auckland. Services on Manukau Road are well over capacity all the way from Royal Oak. The demand levels on the Sandringham Road services through New Windsor indicate that the services starting in Owairaka should be extended back to New Lynn. Great North Road, along which all the western and north western services travel also shows capacity issues suggesting additional capacity is required to cater for demand from those areas.

The analysis has shown that if demand were to be met by providing additional buses on those services which need it, an additional 331 buses per hour would be needed by 2046 respectively. As a point of reference, there are currently approximately 390 buses entering the City Centre in the

morning peak hour. Figure 9 shows the number of buses per hour that are assumed (and modelled) in the future.

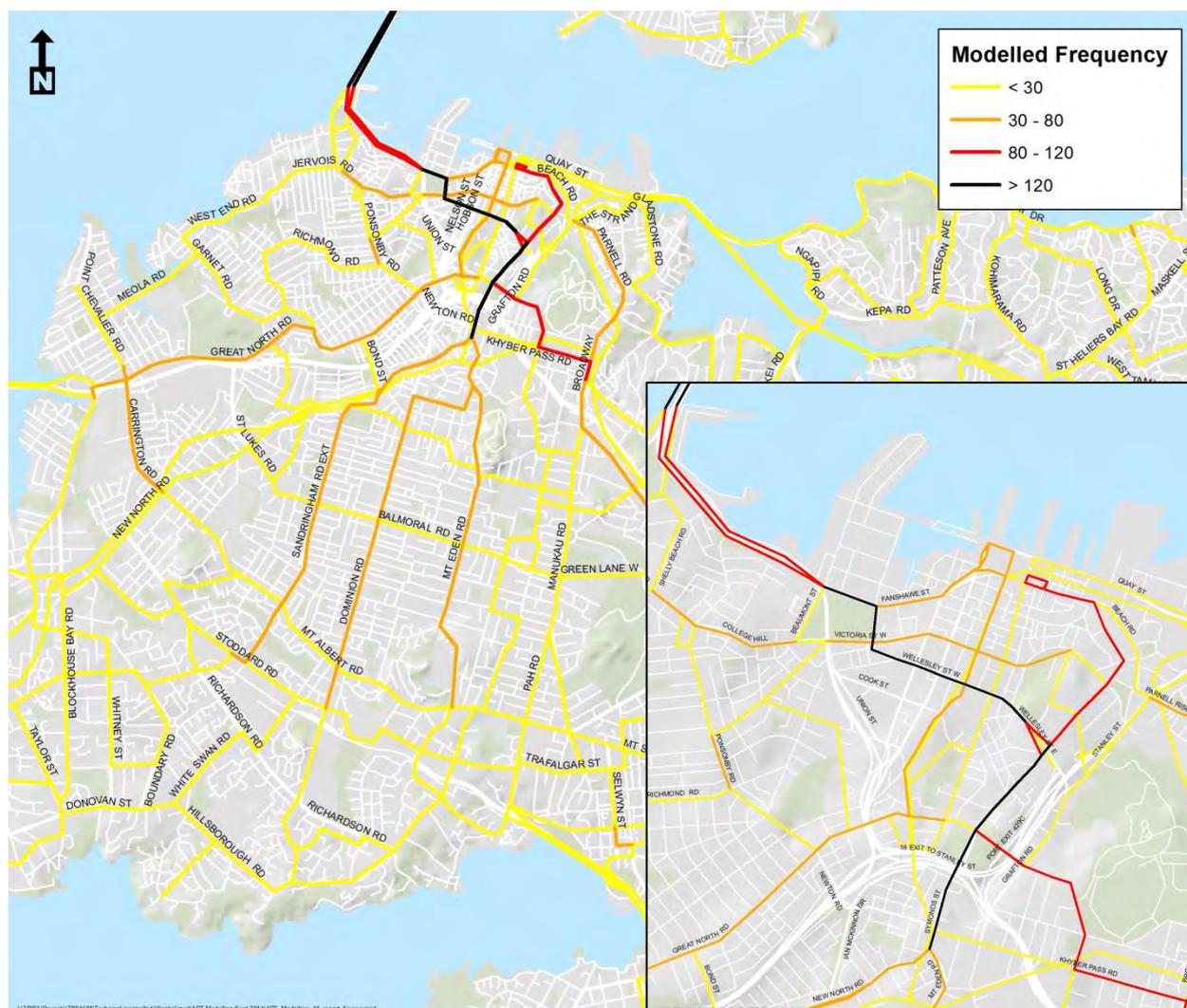


Figure 9 2046 Buses per hour (as modelled) - Isthmus with City Centre inset

As seen in Figure 9, with the exception of Manukau Road, all the major arterials (Great North, New North, Sandringham, Dominion, Mt Eden and Great South roads) have in excess of 30 buses per hour (a bus every two minutes). When combining onto the City Centre road network, this leads to significant bus congestion, especially on Symonds, Wellesley and Fanshawe streets.

The realistic operational capacity of the Symonds Street corridor is estimated to be approximately 132 buses per hour (current volumes of 140 buses per hour in the morning peak already result in problematic operation), noting that at this level the operation will be susceptible to periods of poor performance due to the platooning arrivals of buses at the stop. Amenity issues are also considered, with a benchmarking exercise identifying that above 140 buses per hour, very poor urban amenity is experienced.

Active modes

Active mode trips are also playing an important part in providing access to the City Centre, with 7-8% of inbound trips being made by bicycle or on foot¹⁶.

¹⁶Auckland Council annual surveys 2010-2014

There is a very limited existing cycle network in the City Centre. Before the recent investment on Grafton Gully, Beach Road and Westhaven Promenade boardwalk, the majority of facilities consisted of shared bus/bike lanes on busy high traffic volume arterial routes connecting into the City Centre. Through the recently announced Urban Cycleway Fund, the plan now is to create a safe, continuous and connected network of routes largely separated from general traffic and pedestrians – connecting with the inner suburbs and providing real travel choice and travel opportunities. This network is being designed predominantly for those living within 5- 8km of the City Centre where the cycle journey time would be up to 30 minutes. T

Nearly every trip to, from and within the City Centre contains a portion that is undertaken on foot as all trips by public transport and most trips by car start and/or finish with a walking leg on City Centre streets.

This is reflected in the high number of pedestrians in and around the City Centre. For example, automated screenline counters identify that some sections of Queen Street footpath accommodate over 40,000 pedestrians, on one side of the street, across a busy weekday¹⁷.

While some City Centre streets are well-equipped to deal with the existing high numbers of pedestrians, with wide footpaths and generous pedestrian crossing phases, other streets have insufficient footpath width and low quality pavement. In peak hours, some pedestrian phases are not long enough to cater for all pedestrians crossing, resulting in crowding and corresponding safety issues. In certain streets one of the major generators of pedestrian flows is passengers accessing and leaving public transport services.

¹⁷Heart of the City automated pedestrian count system, 4thMarch 2015.