



AUCKLAND AIRPORT ACCESS

Programme Business Case

CUSTOMERS

AIRPORT & SURROUNDING AREAS

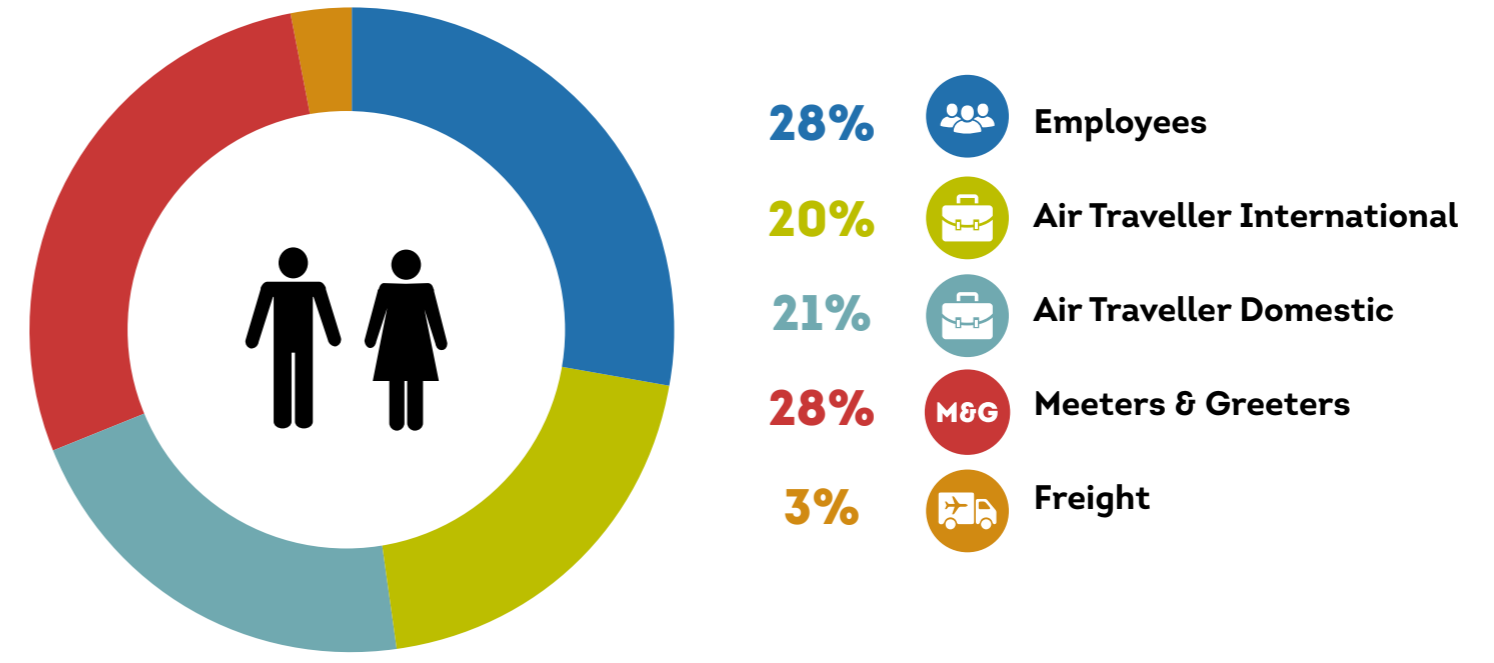
The study area includes the airport core as well as the surrounding commercial and industrial zone to the north and south as it expands in the future.

A wide range of customers require access to the Auckland Airport and its surrounding area for work and to travel including those who send and receive goods.

SURROUNDING COMMERCIAL & INDUSTRIAL ZONE **AIRPORT CORE**



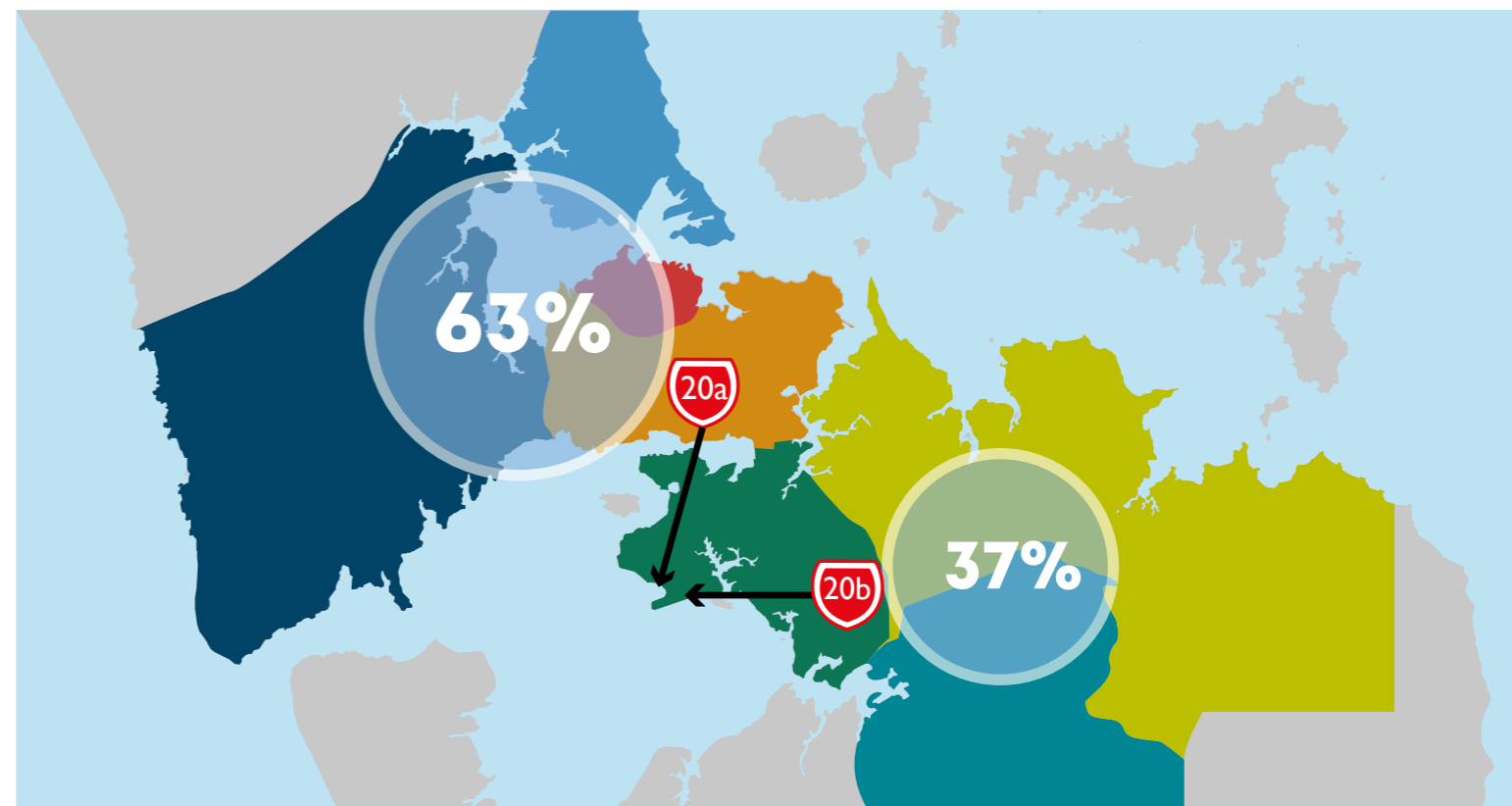
WHO ARE OUR CUSTOMERS



Source: From AT customer insights, March 2017

WHERE OUR CUSTOMERS COME FROM

NORTH SHORE **WEST AUCKLAND** **CITY CENTRE** **ISTHMUS** **MANUKAU** **MANUKAU EAST** **PAPAKURA/FRANKLIN**



Source: Infographic SW Auckland Oct 16 v2.pdf: Page 2, provided by NZTA, Oct 16

PROBLEM DEFINITION



PROBLEM

1

Reliable and timely access for customers and goods to and from the airport and its surrounding area is limited by lack of travel choice, leading to a poor journey experience and putting New Zealand's economic potential at risk. This is significantly exacerbated by growing activity.



CUSTOMER'S PROBLEMS



AIR TRAVELLER - BUSINESS

Getting to the airport by car or taxi means I don't have to work around schedules, can maximise time working rather than travelling, make calls on my way, and just get home after my trip. I need a better option so I know how long it will take and doesn't get me stuck in more and more traffic



AIR TRAVELLER - NON-BUSINESS (FROM AUCKLAND)

I am focussed on our trip, not on getting to the airport. We have to build in a lot of extra time so we aren't late. If family can't take us, the park and ride is OK and our car will be waiting for an easy trip home. Taxis are expensive, and there is no train that we could easily get a family with luggage on without long transfers



AIR TRAVELLER - NON-BUSINESS (FROM OUTSIDE OF AUCKLAND)

Auckland is a big enough city to have a good train and bus system, but when I arrive I don't see easy to use, affordable options. It's easier to take a taxi or shuttle, or a rental car especially if I am just passing through Auckland



NINE-TO-FIVE EMPLOYEE

I am frustrated that it takes me longer and longer to drive in. I haven't really considered other options, because from where I live it would take a long time and multiple connections. I have a good car and like the flexibility, and have parking provided at work



SHIFT EMPLOYEE

I start and finish at odd times, I can't afford to be late, and cost is an issue for me. Buses don't start early enough, take a long time, and I don't feel safe walking after dark at either end. I would rather not drive, which takes ages when my shifts are at busy times, but it is the cheapest way to make sure I am on time



FREIGHT/TRUCK & PASSENGER TRANSPORT DRIVER

Getting in and out of the airport area is unreliable as we get caught in all the other traffic. It costs us time, limiting the number of jobs we can deliver and increasing costs through wages and vehicle running. There are very limited options for contingency planning as our clients' needs and schedules are fixed

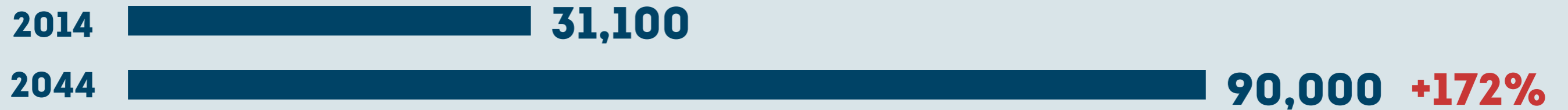
GROWING ACTIVITY



ECONOMY

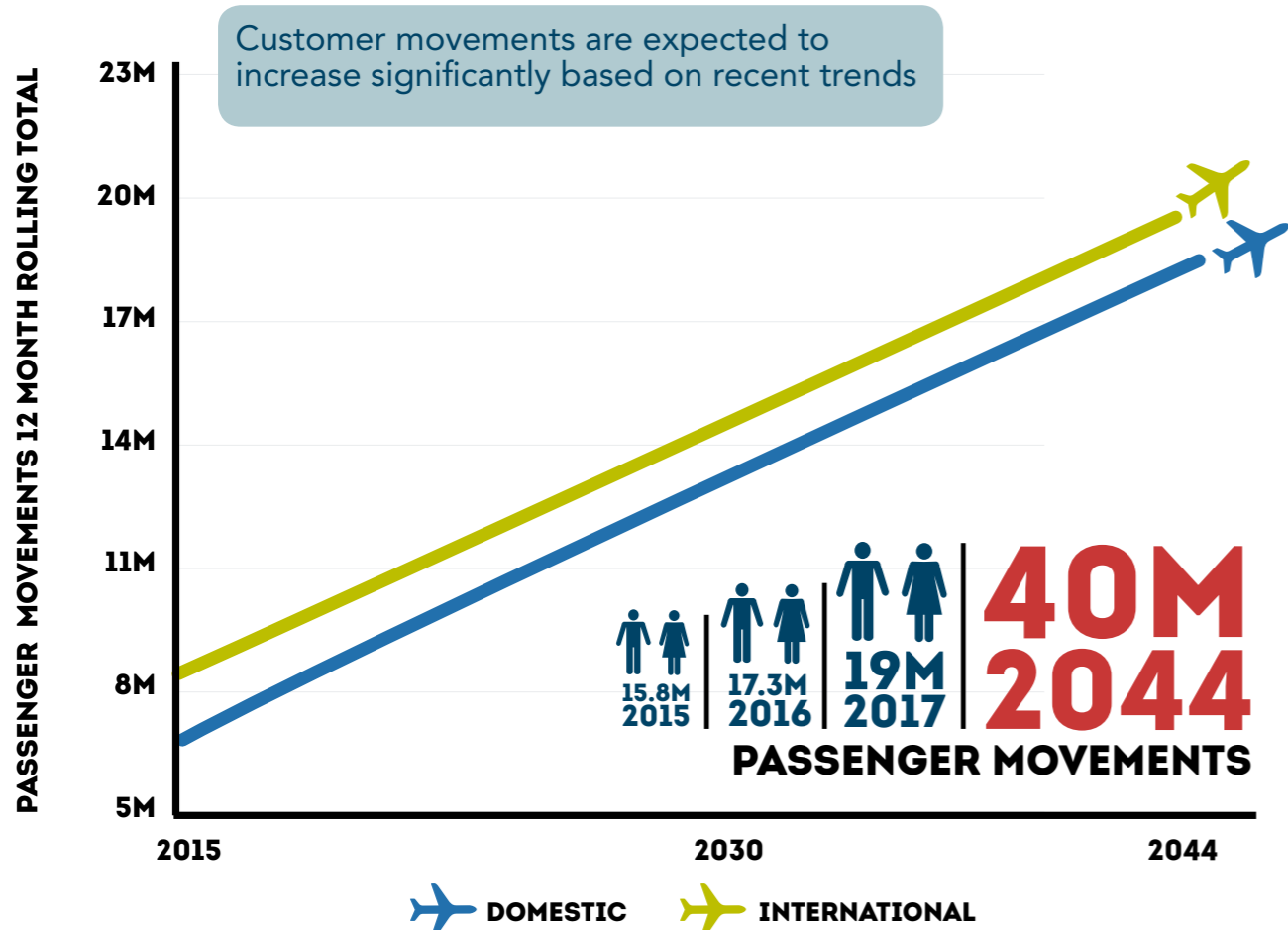


GROWTH & JOBS

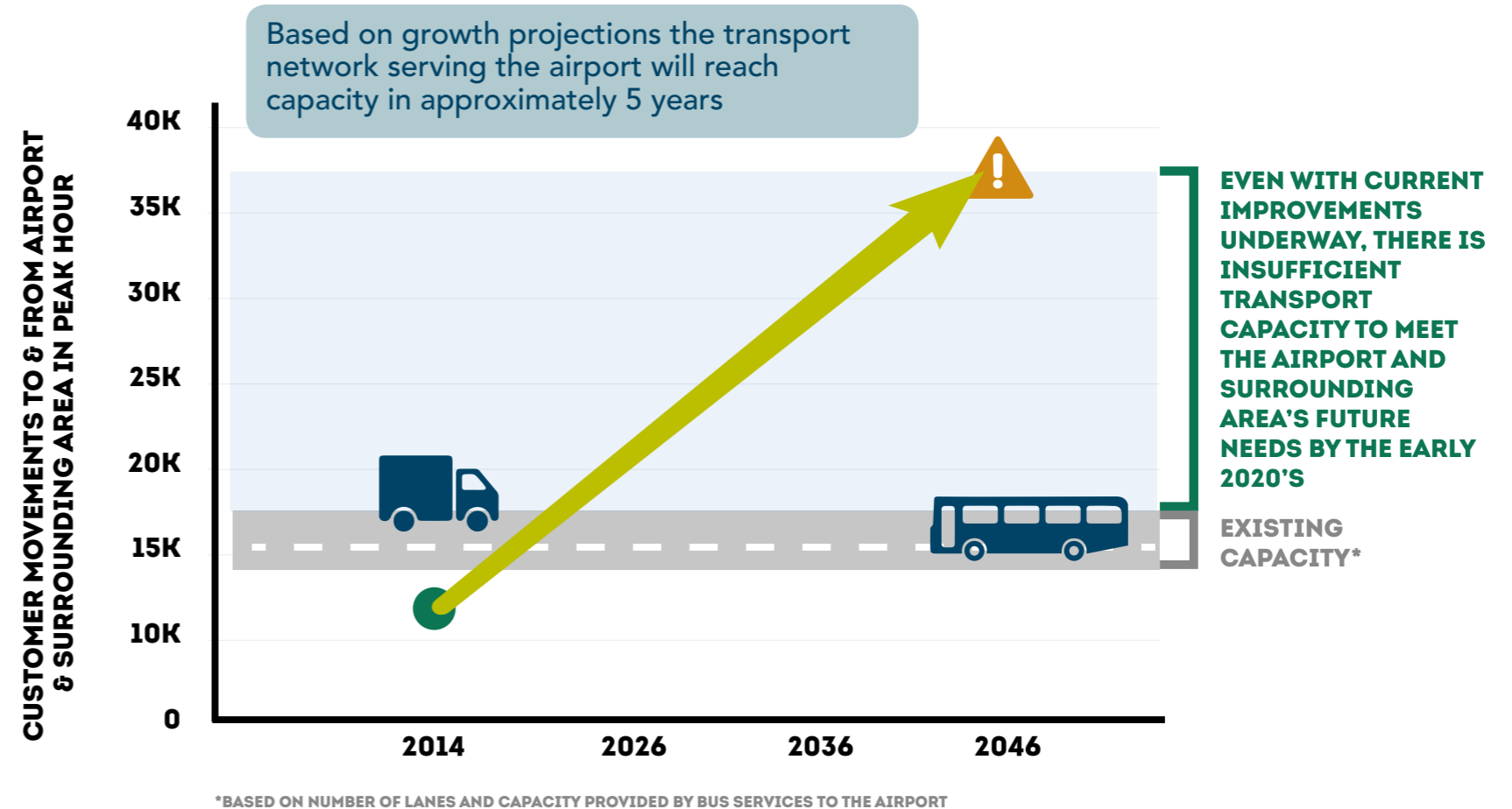


Source: Auckland Airport Master Plan, Sept 15

INCREASING AIRPORT ACTIVITY



SCALE OF THE PROBLEM

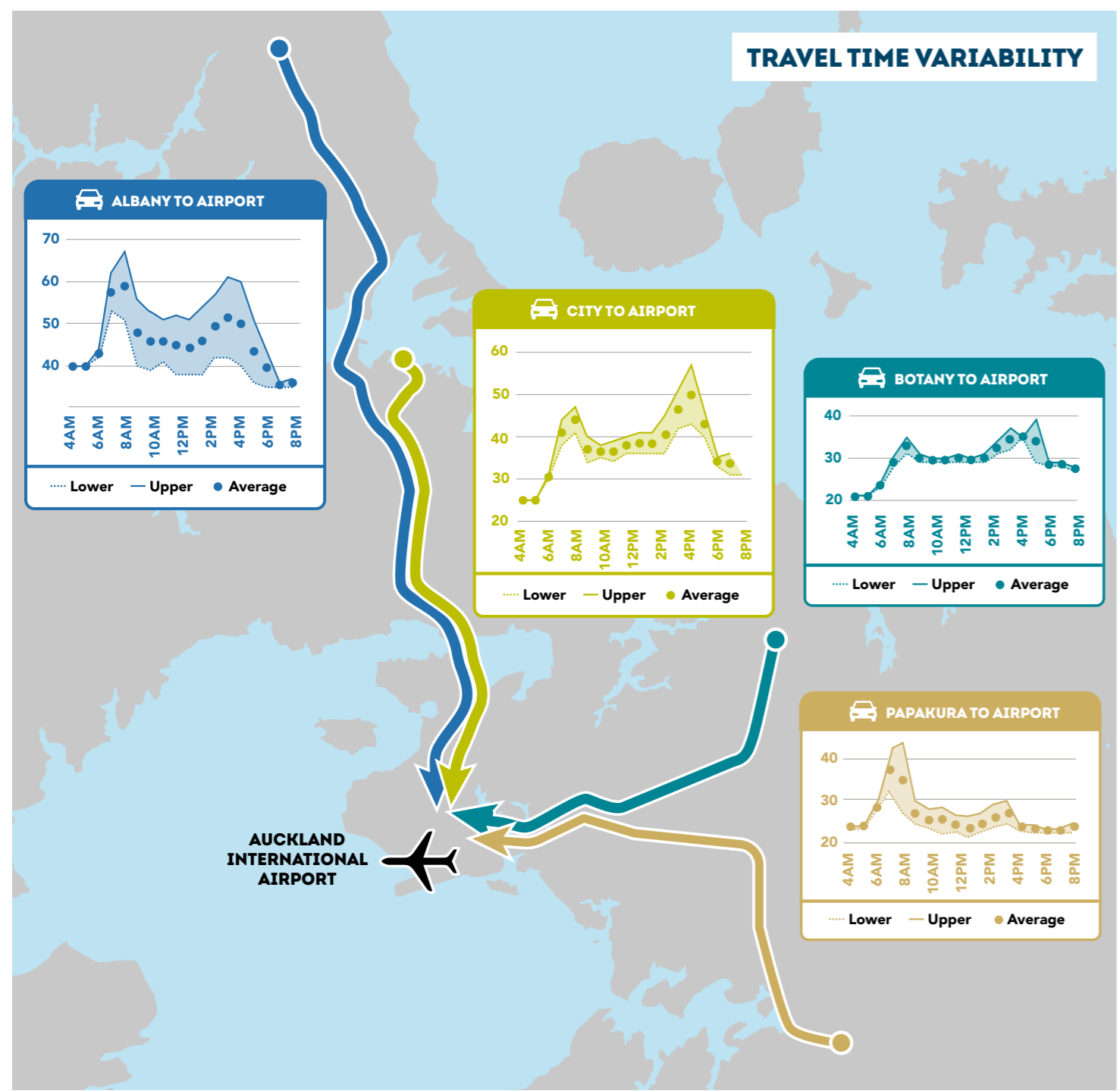


Source: 2015 & 2044 Auckland Bus Forum Sept 15.pdf: Page 3,4 Provided by Auckland Airport, Sept 15
2016 Auckland Airport Annual Report; 2017 Dec 2016 Monthly Traffic Update, Auckland Airport issued 1 Feb 2017

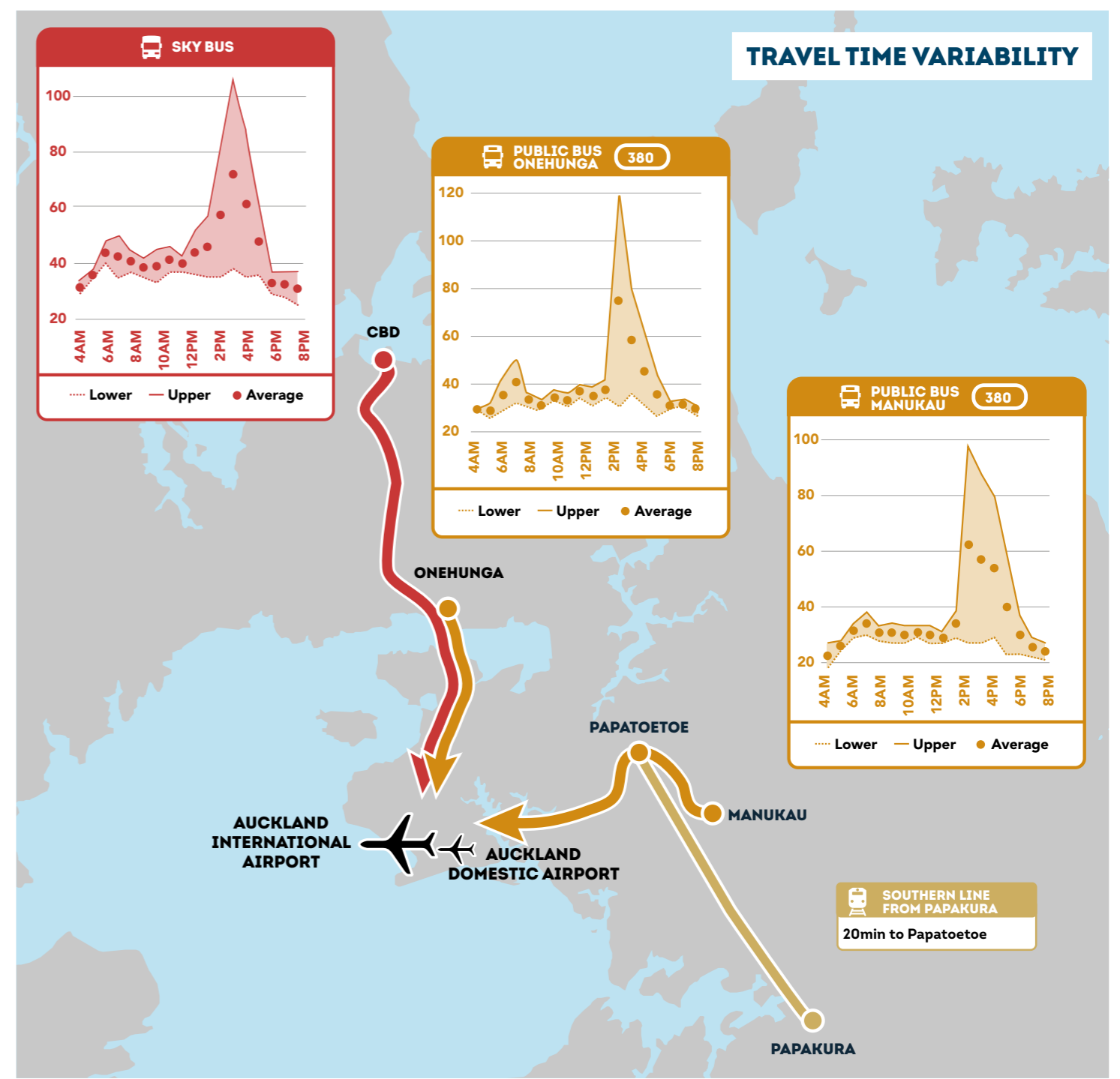
Source: TDG, Road Traffic Data Collection and Analysis, June 2016
ATAP data September 2016

JOURNEY EXPERIENCE

TRAVEL TIMES TO THE AIRPORT ARE UNRELIABLE, ESPECIALLY BY PUBLIC TRANSPORT



Source: ATOC data (25.12.16 – 10.3.17) provided by NZTA on 15 March 2017



Source: AT data for SkyBus and 380 Bus (1.-22.12.16) provided by AT on 27 February 2017

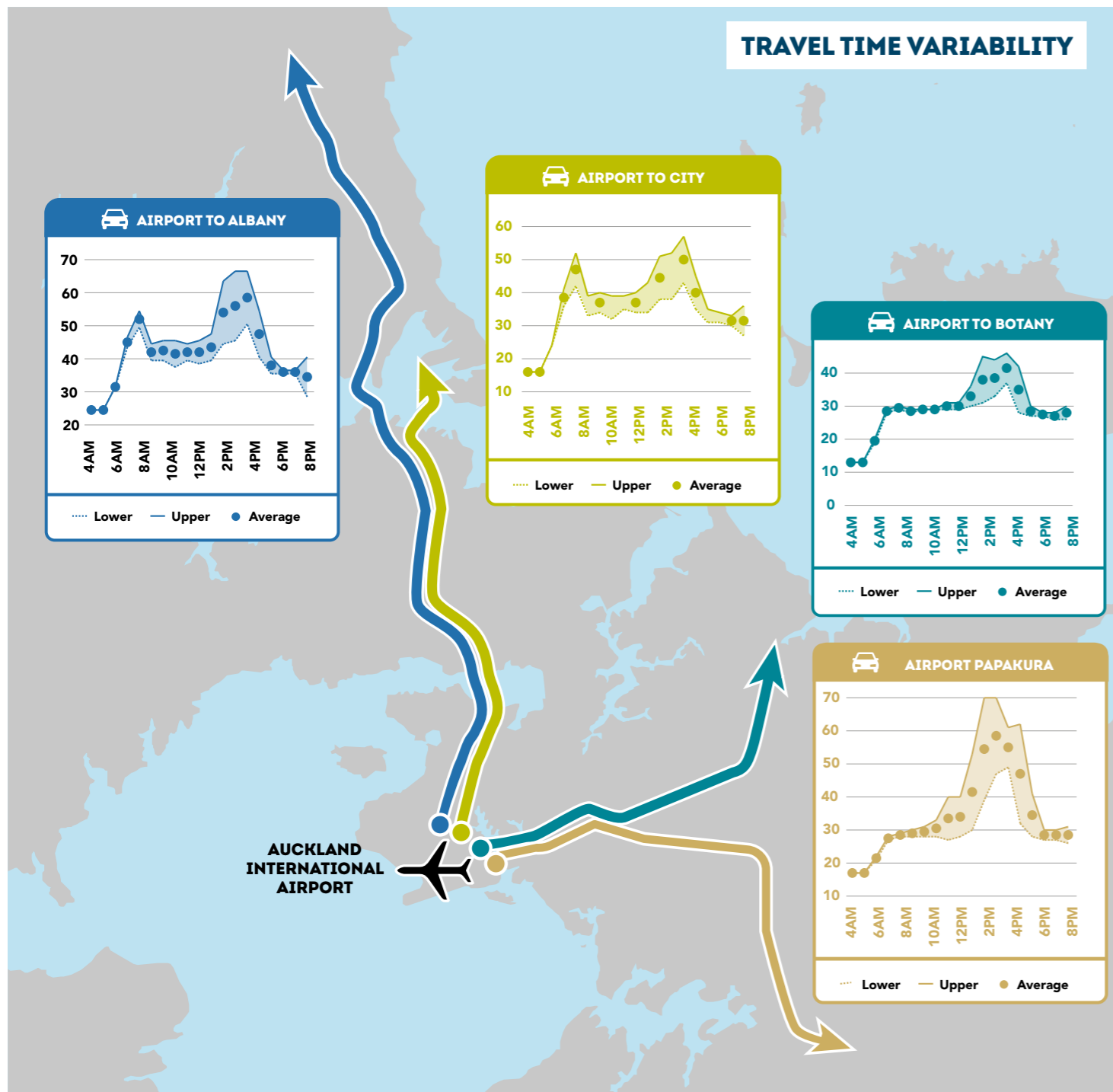


Last thursday I left my auckland office at 4:30 and at 6:30 I arrived at the airport...

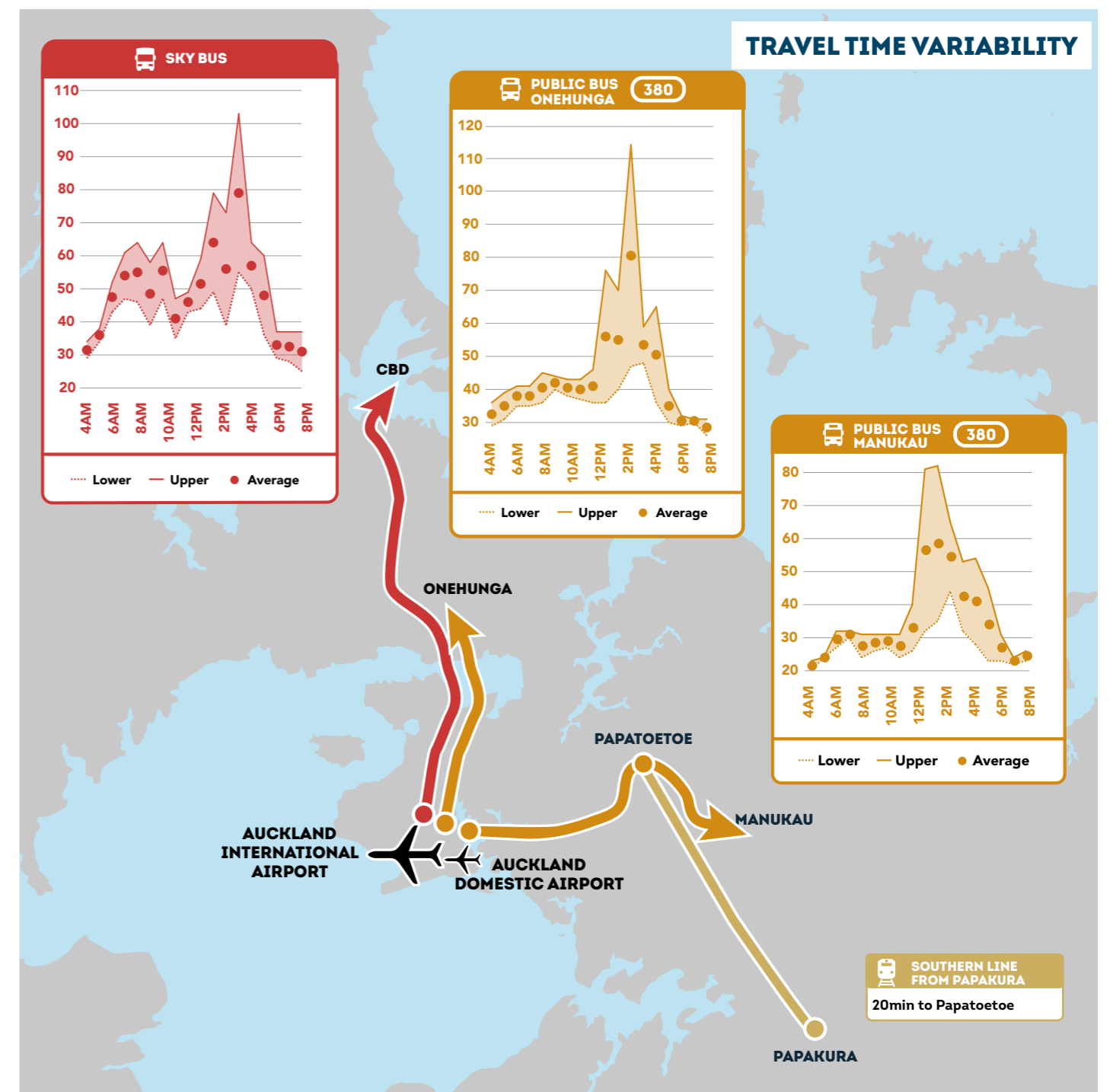
- Auckland Chamber of Commerce Chief Executive Michael Barnett

JOURNEY EXPERIENCE

TRAVEL TIMES FROM THE AIRPORT ARE UNRELIABLE, ESPECIALLY BY PUBLIC TRANSPORT



Source: ATOC data (25.12.16 – 10.3.17) provided by NZTA on 15 March 2017



Source: AT data for SkyBus and 380 Bus (1.-22.12.16) provided by AT on 27 February 2017



Our drive from Auckland Airport took half the time of our flight...
- Andrea T, Auckland Resident

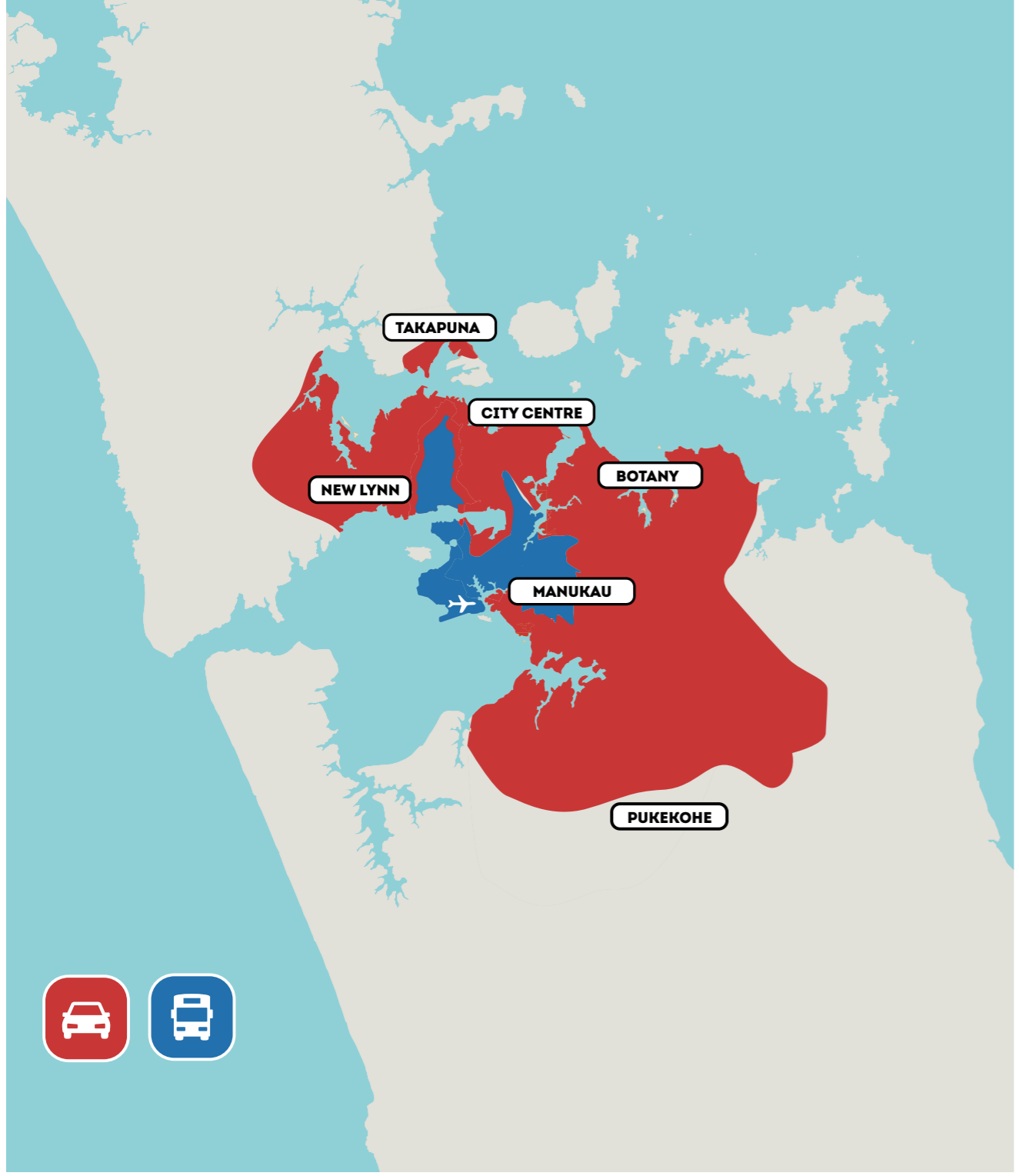


The buses are really hit and miss. We have a lot of times where staff are late or don't show...
- Survey from TNS Understanding Auckland Airport Corridor Employer Needs

TRAVEL CHOICE

LIMITED CHOICES FOR TRAVEL TO AND FROM THE AIRPORT

ABILITY TO TRAVEL TO AUCKLAND AIRPORT WITHIN 45 MINUTES AT PEAK



CYCLISTS

Difficult for travellers with luggage
 Long distances to travel for most employees
 Weather dependent



PUBLIC BUS

Low frequency and limited priority means journey times are too slow and unreliable for business travellers
 The small number of routes reaches only a small proportion of employees and travellers
 The service span doesn't meet the needs of shift employees
 The service is difficult to understand and access due to different fare products and limited information.



RAIL/BUS

Low frequency of 380 bus means there is uncertainty of connection at Papatoetoe Station



PARK & RIDE

Can be high cost for travellers depending on length of stay.
 Can cause delay for business travellers due to the need to wait for a shuttle bus
 Currently limited locations accessed from the north



SKY BUS

Only serves city centre/central isthmus bound travellers
 Unreliable journey times due to limited priority
 Serves only a small proportion of employees
 More expensive than a public bus



TAXI

High cost for non-business travellers and unrealistic for employees
 Subject to travel time unreliability along with all other road users



CAR

Requires parking at a cost for travellers
 Subject to unreliable travel times regardless of occupancy

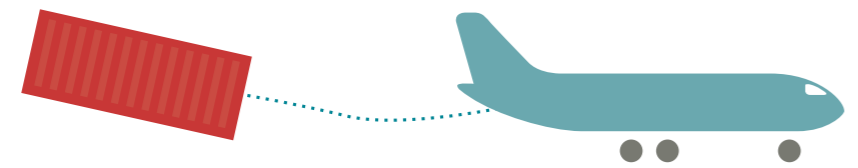
Congestion

Realistic travel choices are limited and all choices are subject to congestion affecting reliability & timeliness

Source: Google real travel time estimates (car). Actual journey time data from AT (bus).

FREIGHT

CARGO THROUGH AUCKLAND AIRPORT



50X PER TONNE **THE NZ AVERAGE VALUE**

HANDLES

12% OF NZ'S IMPORTS & EXPORTS

\$ BY VALUE



AUCKLAND INTERNATIONAL AIRPORT

NZ'S

2ND LARGEST IMPORT PORT

3RD LARGEST EXPORT PORT

\$ BY VALUE

AIRPORT FREIGHT TIME SENSITIVE



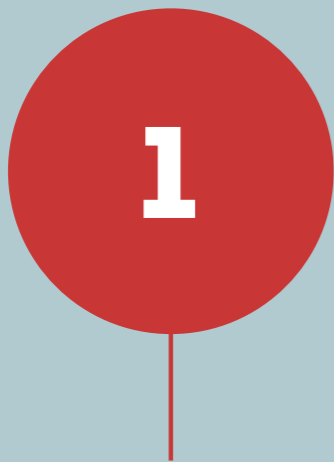
(Note: Information on other customer types will be developed in Programme Business Case)

WHY IS THIS SO IMPORTANT?



BENEFITS

The following are the benefits of solving these problems for our customers:



An improved journey experience to and from the airport



Improved access to jobs and labour



Better travel choices made by people and businesses



More efficient movement of high value goods

INVESTMENT OBJECTIVES



Influence travel behaviours through immediately delivering better choices to customers to access the airport and its surrounding area



Immediately commence delivering the access requirements of customers of the airport and its surrounding area



Progressively deliver reliable and timely journey times to the airport and its surrounding area

WHAT'S NEEDED

Refer to programme maps for implementation timeframe

BEHAVIOUR CHANGE

PROMOTE ALTERNATIVES

- Mobility as a Service (MaaS) platform providing real-time information on all travel options to provide end-to-end journey optimisation
- Provide incentives to employers to promote mode change among staff
- Advertise Public Transport in Airport and on route to/from airport
- Travel Demand Management Campaign, Share-the-road campaign
- Implement airport transport in ticket booking process

PROVIDE REALISTIC, RELIABLE & EFFICIENT ALTERNATIVES

- Optimise bus and shuttle service, involve employers in AKL area
- Promote Park & Ride facilities
- Provide and improve cycling and walking options

PRIORITISE HIGH-OCCUPANCY VEHICLES

- Pricing strategy for parking
- Increase number of High-Occupancy Vehicles (HOV) lanes
- Give priority to other modes Bus and HOV

IMPROVE TRAVELLER INFORMATION

- Pre-departure info
- Variable Message Signs at key decision making points
- Clear and intuitive signage in airport and precinct
- Meet & Greet

“MAXIMISE OPPORTUNITIES TO INFLUENCE TRAVEL DEMAND”

Source: Auckland Transport Alignment Project - Recommended Strategic Approach

IMPROVED NETWORK MANAGEMENT

INFLUENCE LAND USE

- Locations for new developments and businesses
- Auckland International Airport Park & Ride location
- Domestic terminal forecourt

ADJUST NETWORK

- Simple and intuitive connections
- Reallocate lanes by vehicle types (Bus, HOV)
- Prioritise buses
- Cycle provision
- Tidal flow lanes
- Alternative route inter terminals
- Clear signage
- Network Operating Framework
- Park & Ride Strategy

IMPROVE TRAFFIC FLOW

- Variable speed management
- Optimise signal phasing
- Interchange signalling
- Variable lane use pricing
- Variable Message Sign early warning
- Traffic separation by type

IMPROVE INFORMATION FLOW

- Permanent traffic data collection to identify congestion development
- Improved Incident detection and coordination of response
- Mobile app to inform on real travel times, suggesting routes and modes, info on P&R availability and connections

CAPACITY

INCREASE PEOPLE CARRYING CAPACITY

- Provide and improve cycling and walking facilities
- Increase number of bus and T3 lanes
- Increase numbers of shuttles and coordinate with work shifts
- Demand responsive transport pilot (dynamic lanes)
- Increase PT frequency
- Rapid transit connection Airport - Botany

INCREASE NETWORK CAPACITY & CONNECTIONS

- Widen shoulders on SH20b
- Upgrade intersections interchanges and roundabouts
- Increase remote Park & Ride capacities

“TARGET INVESTMENT TO THE MOST SIGNIFICANT CHALLENGES”

Source: Auckland Transport Alignment Project - Recommended Strategic Approach

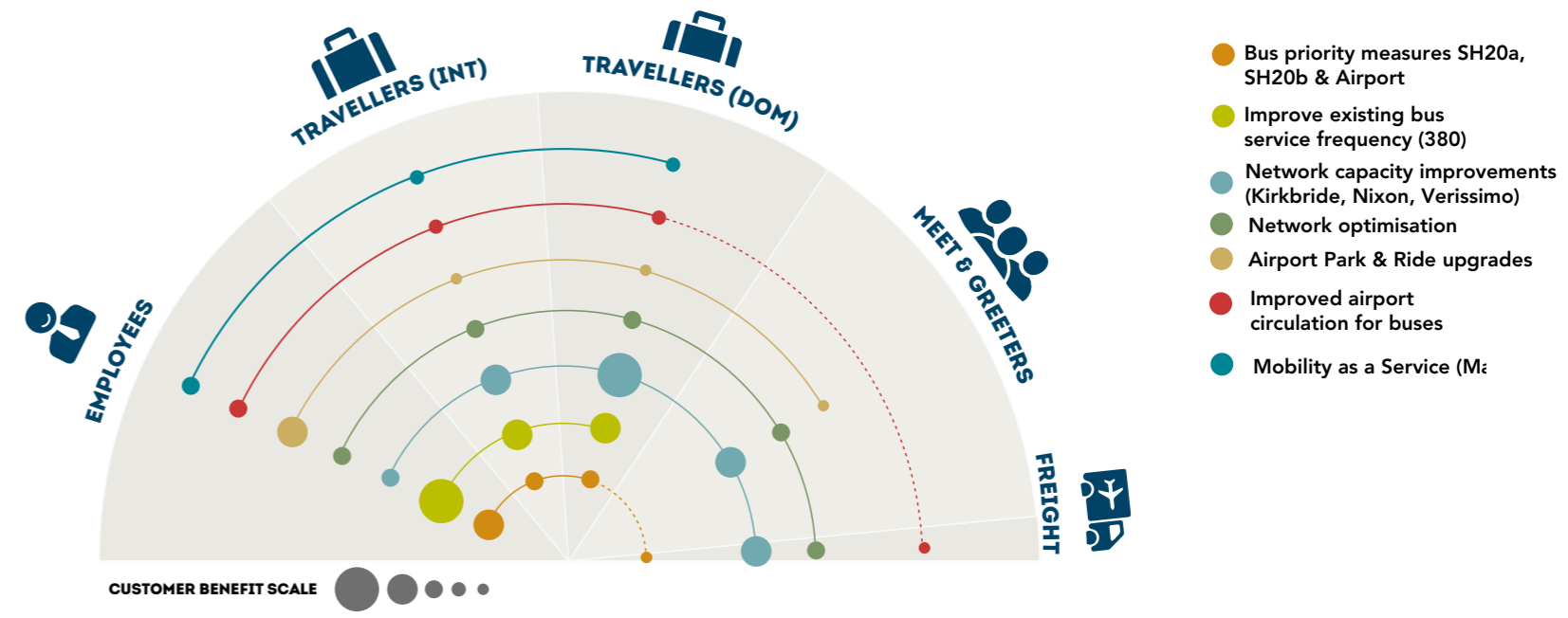
“MAKE BETTER USE OF EXISTING NETWORKS”

Source: Auckland Transport Alignment Project - Recommended Strategic Approach

EVALUATION - AIRPORT ACCESS PROGRAMME OF INTERVENTIONS - BY DECEMBER 2017



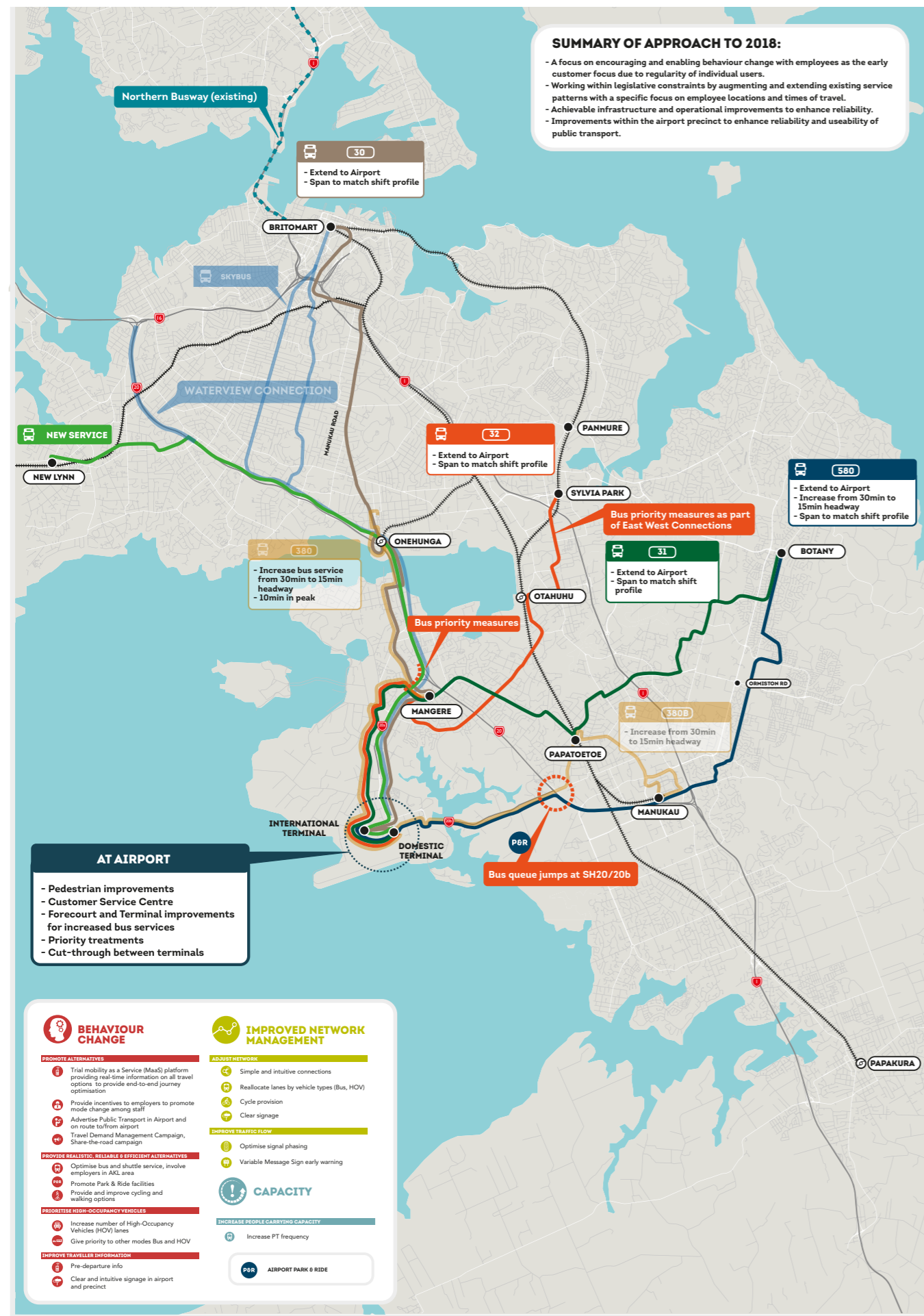
WHAT THIS PROGRAMME DELIVERS



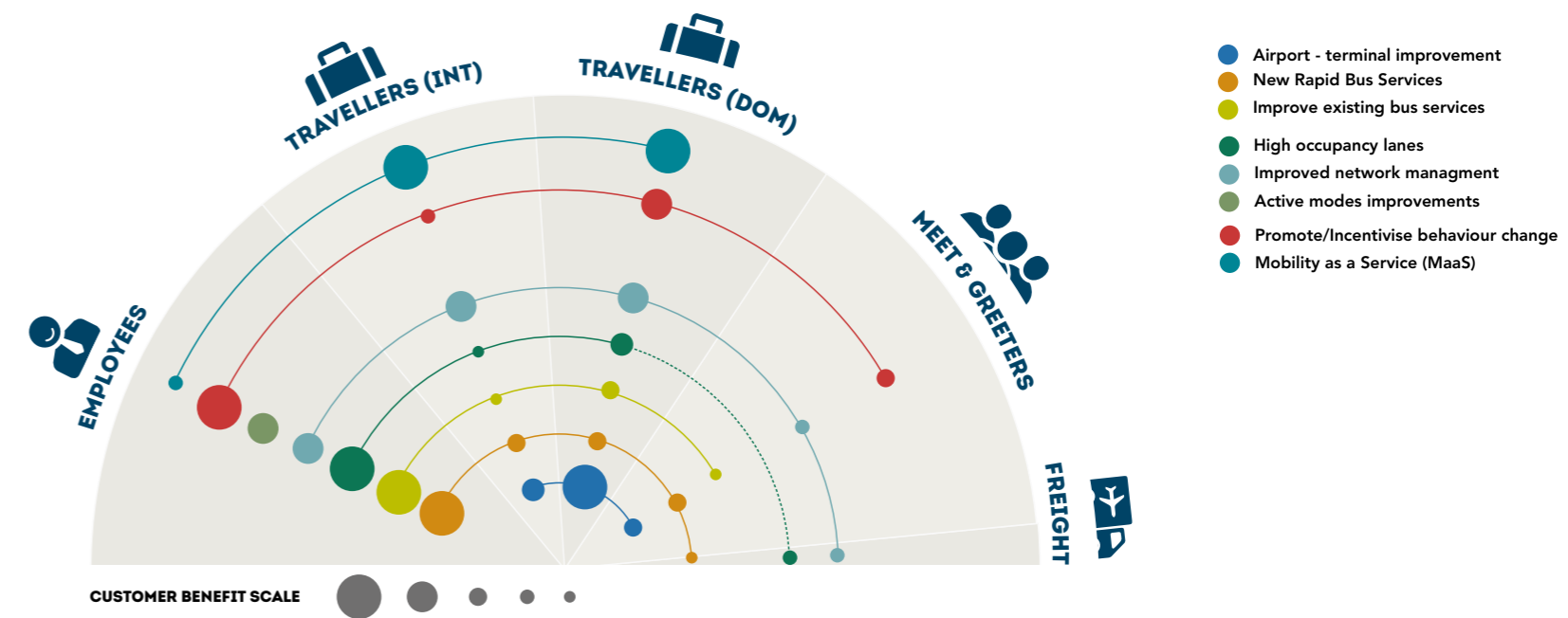
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| Landing Drive/Verissimo Drive signals | \$21M | NZTA/AIAL |
| SH20a Kirkbride grade separation (including southbound bus lanes on SH20a) | \$181M | NZTA |
| Airport bus lanes (Tom Pearce Drive & George Bolt Memorial Drive) | \$3M-\$5.5M | AIAL |
| Nixon road upgrade Park & Ride North Stage 3 | \$11M | AIAL |
| Inter-terminal bus resilience route | \$0.5M | AIAL |
| Mobility as a Service (MaaS) trial | \$1M | NZTA |
| SH20b/SH20 Puhinui Interchange capacity improvements | \$5M | NZTA |
| Infrastructure to support enhanced PT services (eg bus priority measures etc) | \$0.5M-\$1M | AT |
| Campaign and measures to promote and incentivise behaviour change | \$0.1M-\$0.5M | AT |
| TOTAL FUNDED PROGRAMME (CAPEX) | \$220-\$227M | |
| Increased bus frequency (OPEX) | \$2M | NZTA/AT |

- CUSTOMERS WHO BENEFIT**
- Improve circulation within Airport precinct
 - Increased frequency and span of PT services with a focus on serving employee needs
 - Provide improved bus priority measures within the Airport precinct and on the State Highway network
 - Improve network resilience, optimisation and increase capacity (Kirkbride Interchange, Nixon Road, Verissimo Drive)
 - Initiate Mobility as a Service (MaaS) in preparation for trial to support planned infrastructure investment

EVALUATION - AIRPORT ACCESS PROGRAMME OF INTERVENTIONS - BY 2018



WHAT THIS PROGRAMME DELIVERS



| | | |
|---|--------------------|--------------|
| Airport - terminal improvements | \$4M-\$6M | AIAL |
| Airport Park & Ride South | \$20M | AIAL |
| Infrastructure to support enhanced PT services (eg bus priority measures etc) | \$4M-\$15M | AT |
| Signals at Laurence Stevens Intersection | \$1M-\$2M | AIAL |
| Northbound High occupancy/bus priority lanes SH20a | \$12M-\$18M | NZTA |
| Improved network management | \$3M-\$5M | AT/NZTA |
| Active mode improvements | \$1M | AIAL |
| Promote/Incentivise behaviour change | \$1M-\$3M | AIAL/AT/NZTA |
| Mobility as a Service (MaaS) | \$1M-\$3M | NZTA |
| INDICATIVE PROGRAMME CAPITAL COST | \$47M-\$72M | |
| INDICATIVE PROGRAMME OPEX COST (per annum) | \$13.5M | |

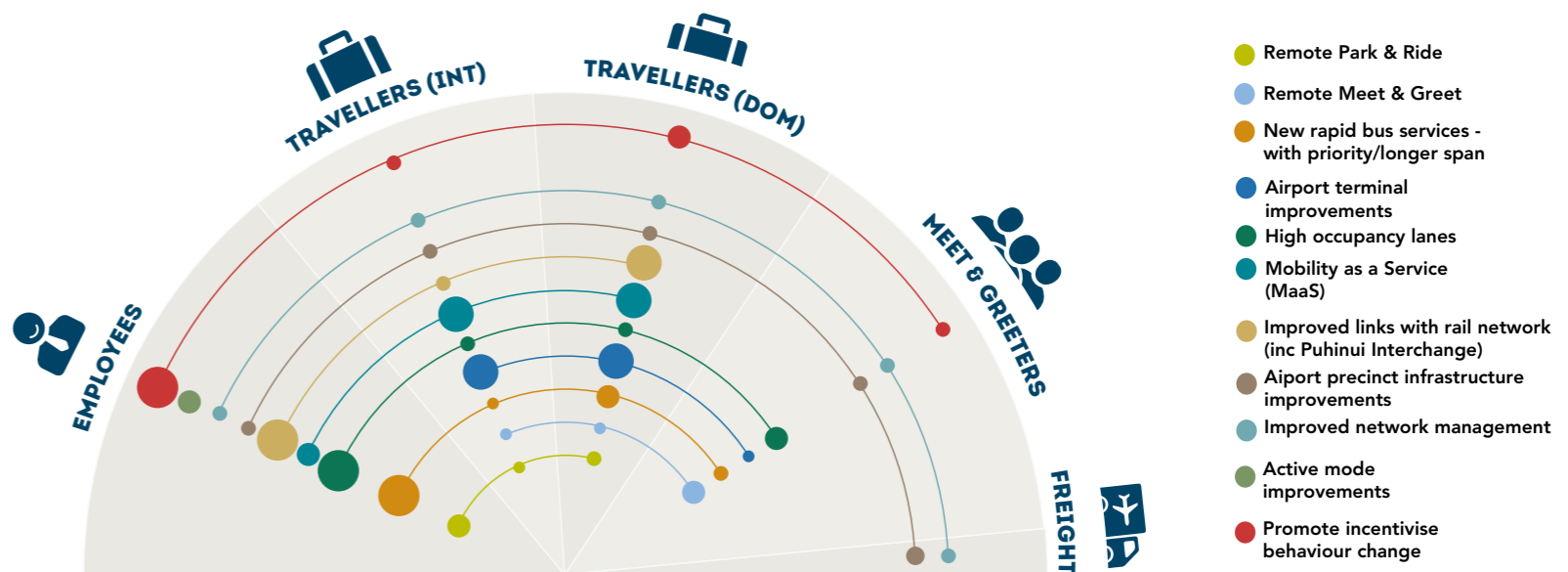
CUSTOMERS WHO BENEFIT

- Direct bus services from areas where employees live
- Improve the ability to transfer to rail through higher frequency services for all customers
- Larger public transport service span to service shift employees
- Bus shoulder lanes will increase capacity by 1,600 people p/hr, improving the reliability of bus services and allowing employees to have more confidence in journey times
- Better network management reliability for high value freight
- Better travel information and Mobility as a Service trial improves journey choices for travellers. As part of a suite of supporting measures the Transport Agency estimate this will generate a 15% mode shift

EVALUATION - AIRPORT ACCESS PROGRAMME OF INTERVENTIONS - 2020



WHAT THIS PROGRAMME DELIVERS



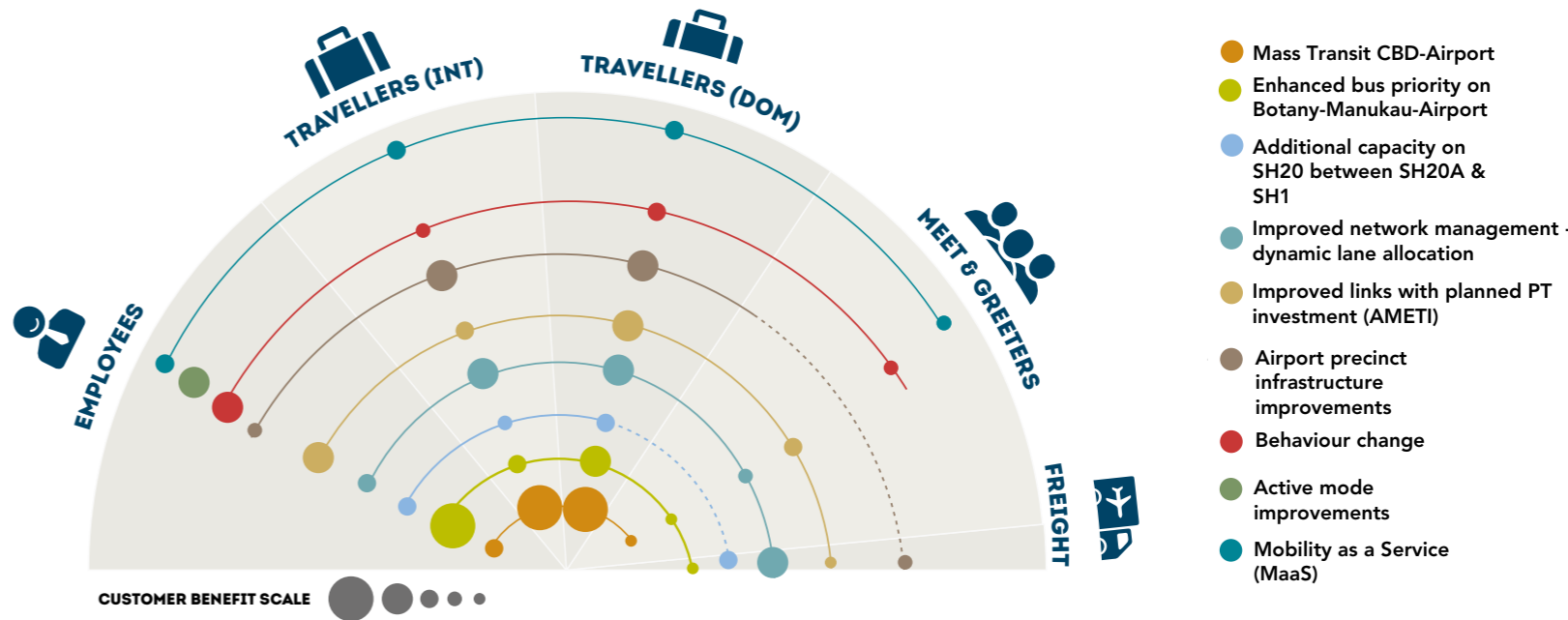
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| Remote Park & Ride | \$15M-\$30M | AT |
| Remote Meet & Greet | \$2M-\$4M | AT/AIAL |
| Infrastructure to support enhanced PT services (eg bus priority measures etc) | \$10M-\$30M | AT |
| Airport terminal improvements | \$1M-\$2M | AIAL |
| High occupancy lanes on SH20b | \$60M-\$70M | NZTA/AIAL |
| Mobility as a Service (MaaS) | \$40M-\$50M | NZTA |
| Improved links with rail network (inc Puhinui Interchange) | \$20M-\$40M | AIAL/AT/NZTA |
| Airport precinct infrastructure improvements | \$3M-\$5M | AIAL |
| Improved network management | \$5M-\$15M | AT/NZTA/AIAL |
| Active mode improvements | \$2M-\$3M | AT/AIAL |
| Promote/incentivise behaviour change | \$3M-\$5M | AT/NZTA/AIAL |
| INDICATIVE PROGRAMME CAPITAL COST | \$161M-\$254M | |
| INDICATIVE PROGRAMME OPEX COST (per annum) | \$13.5M | |

- CUSTOMERS WHO BENEFIT**
- A 400% increase in the number of airport employees within 45min public transport travel to the Airport
 - Better use of the speed and reliability of rail to reach customers
 - Enables meet and greet closer to home avoiding the need to travel to the Airport (currently 29% of trips)
 - Longer public transport service span to service shift employees
 - Bus & high occupancy lanes will increase transport capacity of the existing network by approx. 8,000 people p/hr
 - Better network management and mode shift improves reliability for high value freight
 - Better travel information and Mobility as a Service App provides more journey choices for travellers

EVALUATION - AIRPORT ACCESS PROGRAMME OF INTERVENTIONS - 2028



WHAT THIS PROGRAMME DELIVERS



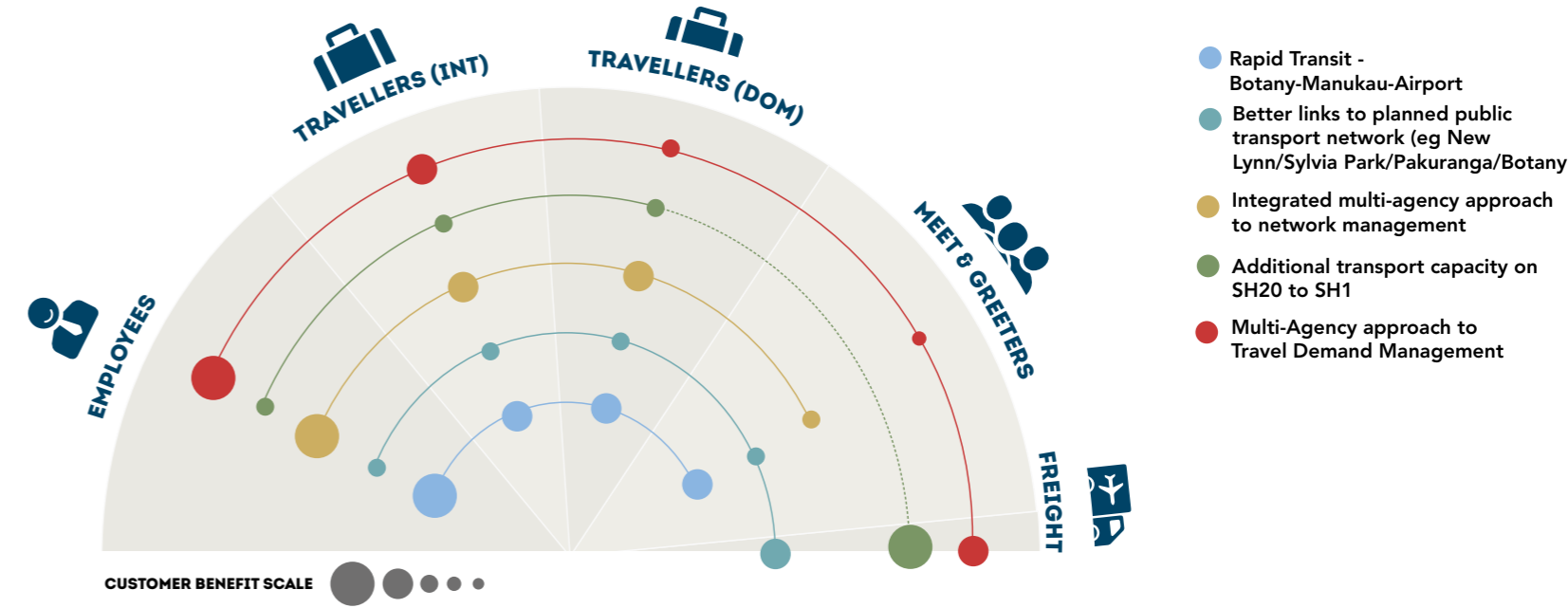
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| Southbound link SH20a to SH20 and increased capacity on SH20 | \$100M-\$150M | NZTA |
| Pukaki Bridge Widening | \$30M-\$50M | AIAL |
| Mass transit (CBD-Airport) | \$1,200M-\$2,500M | AT |
| PT Priority (Botany-Airport) | \$100M-\$200M | AT |
| SH20a-SH20b connection | \$15M-\$30M | AIAL |
| INDICATIVE PROGRAMME CAPITAL COST | \$1,445M-\$2,930M | |

- CUSTOMERS WHO BENEFIT**
- Enhanced public transport priority to improve customer experience through level-of-service improvements
 - Further improvements in customer experience through improved network management prioritising high-productivity vehicles
 - Improved network resilience with a direct connection from SH20A to SH20 southbound and capacity improvements on SH20 between SH20A and SH20B
 - Integrated airport terminal and precinct improvements enhancing reliability and usability of public transport
 - Better integration of existing investment in public transport networks (City Rail Link/ Auckland Manukau Eastern Transport Initiative (AMETI))

EVALUATION - AIRPORT ACCESS PROGRAMME OF INTERVENTIONS - 2038



WHAT THIS PROGRAMME DELIVERS

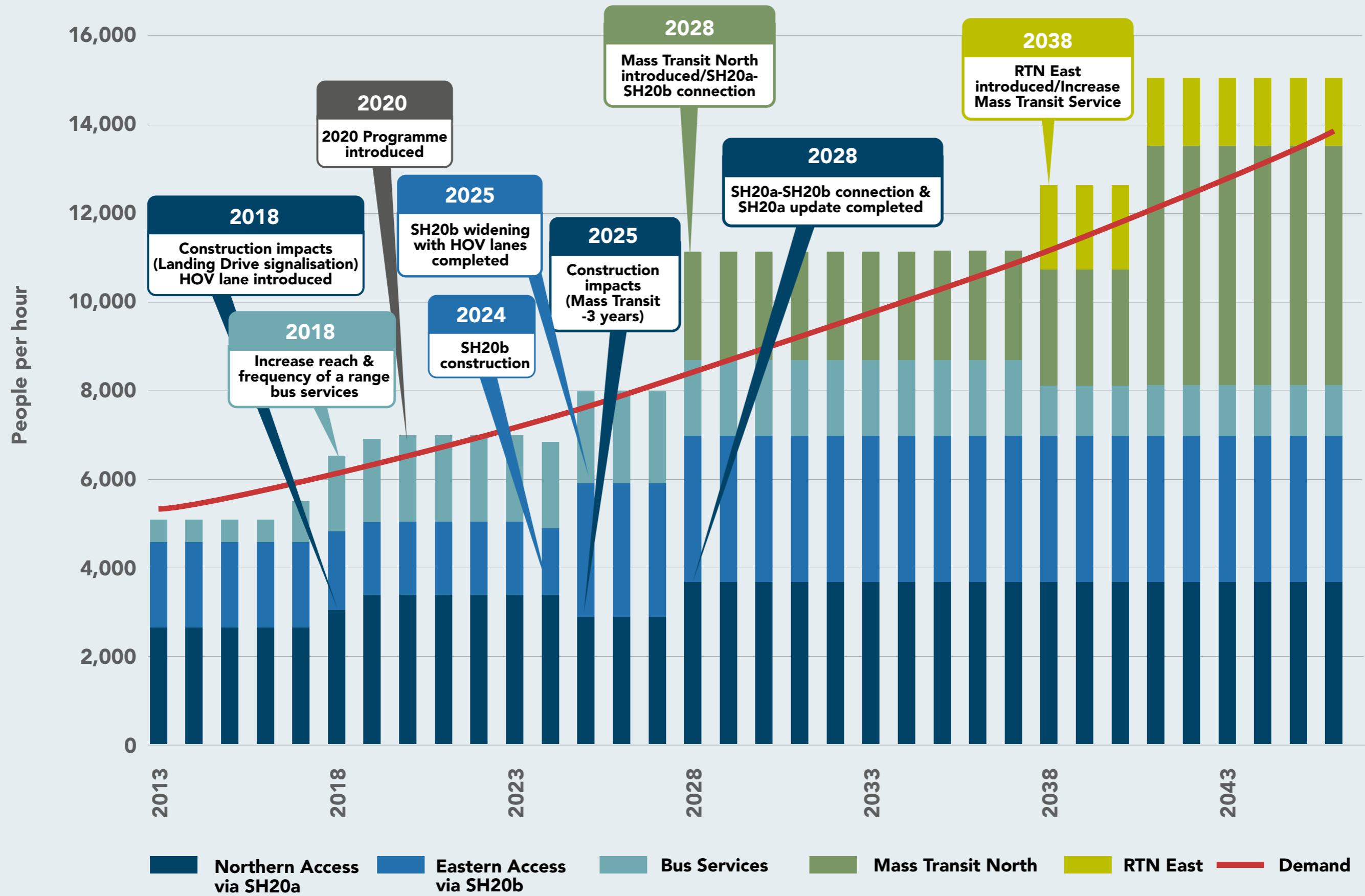


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|--|------------------------|------|
| Rapid Transit - Botany-Manukau-Airport | \$600M-\$1,400M | AT |
| Increased capacity on SH20 | \$100M-\$200M | NZTA |
| INDICATIVE PROGRAMME CAPITAL COST | \$700M-\$1,600M | |

- CUSTOMERS WHO BENEFIT**
- A quality, integrated transport service provided to customers
 - Maximising use of investment in public transport, integrating modes across Auckland
 - Improved transport capacity for customers meaning reliable journeys to and from the Airport
 - Travel choice to suit the requirements of customers of the airport and the Airport precinct

PEAK HOUR CAPACITY VS DEMAND

With programme interventions

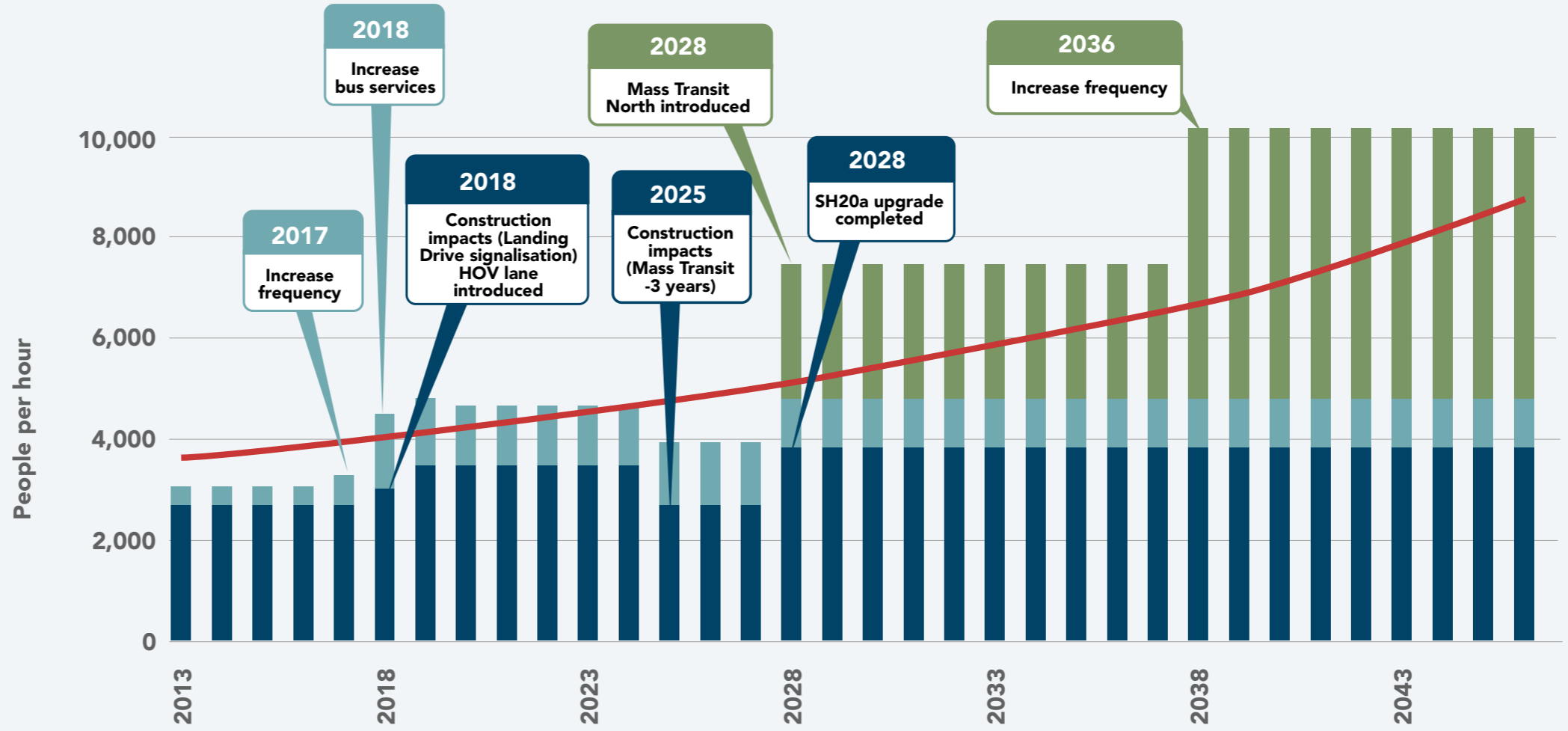


Demand Source: ART Scenario I9 Forecasts

PEAK HOUR CAPACITY VS DEMAND

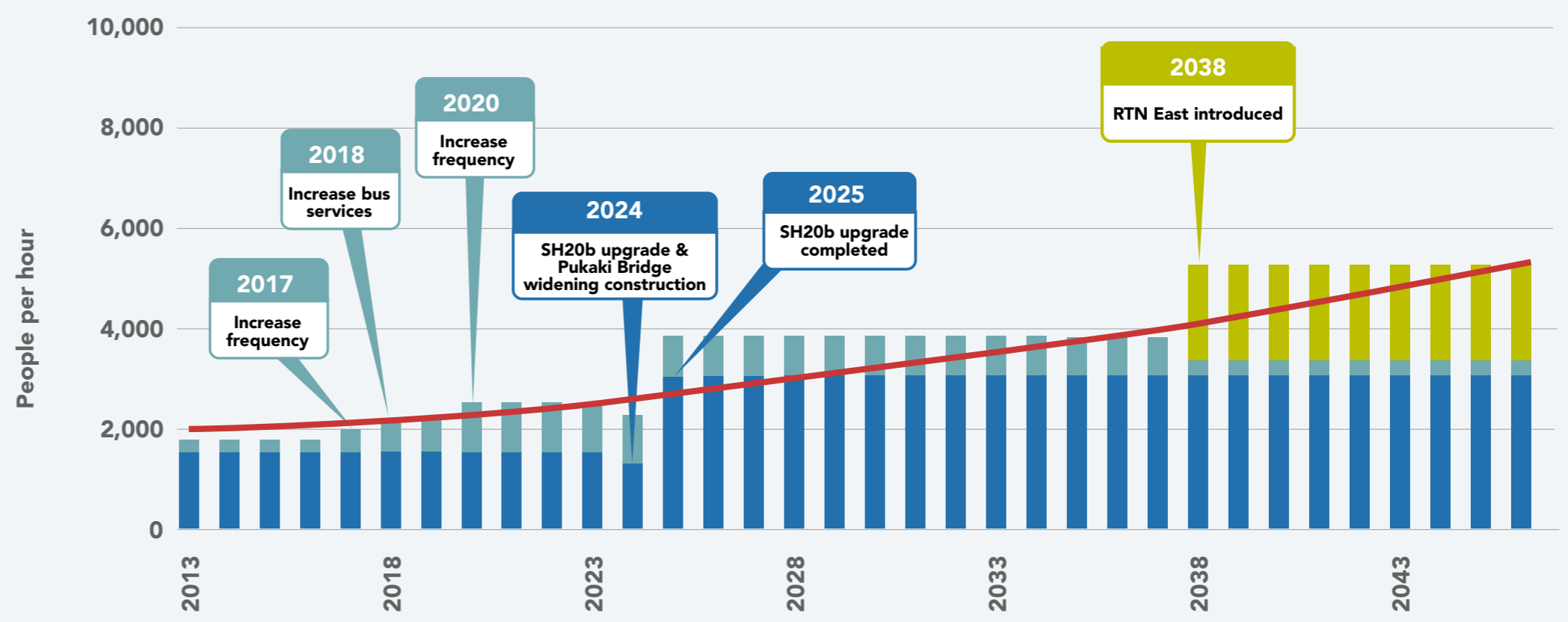
SH20a Peak Hour Capacity vs Demand

■ Northern Access via SH20a ■ Bus Services
■ Mass Transit North — Demand



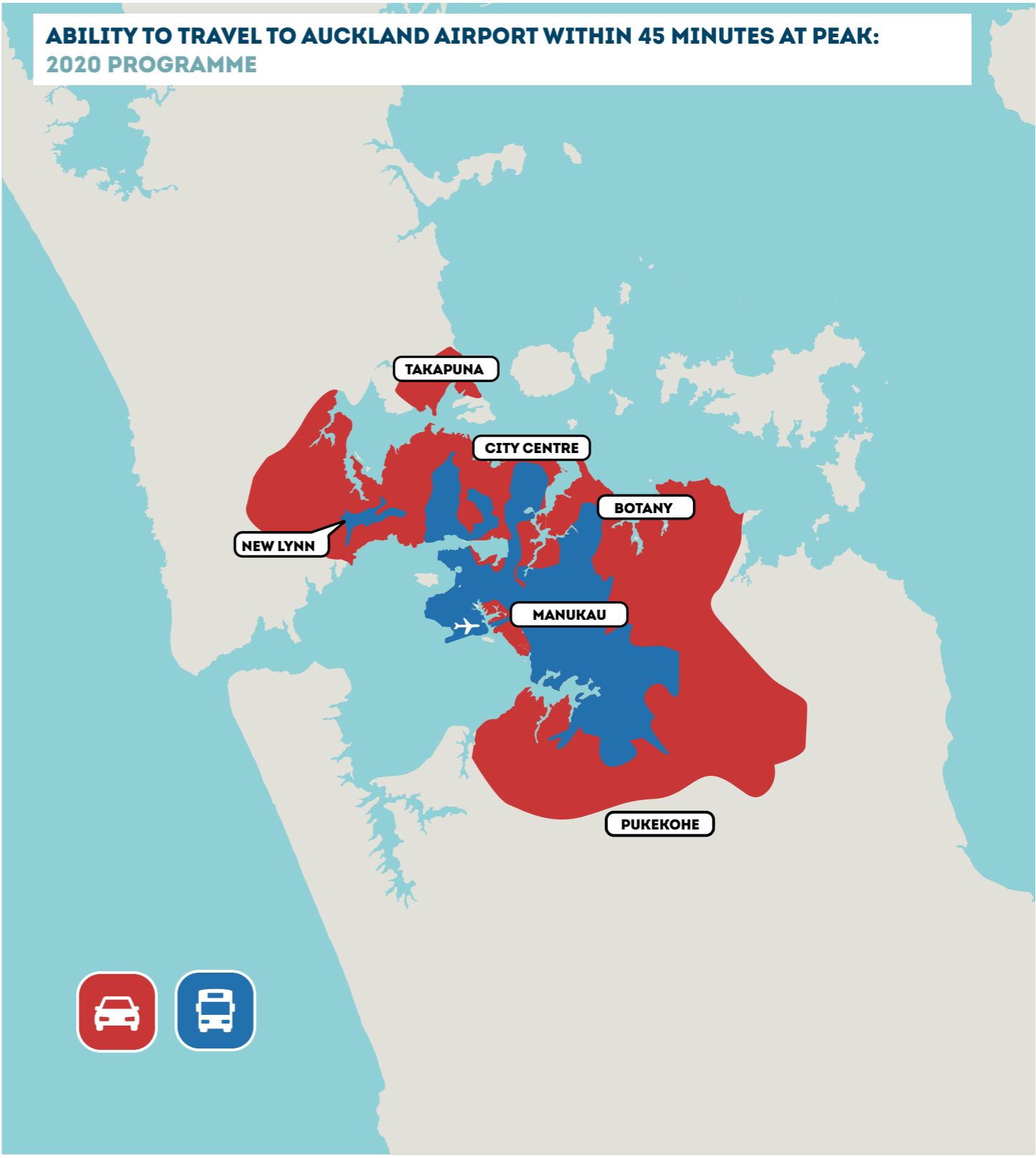
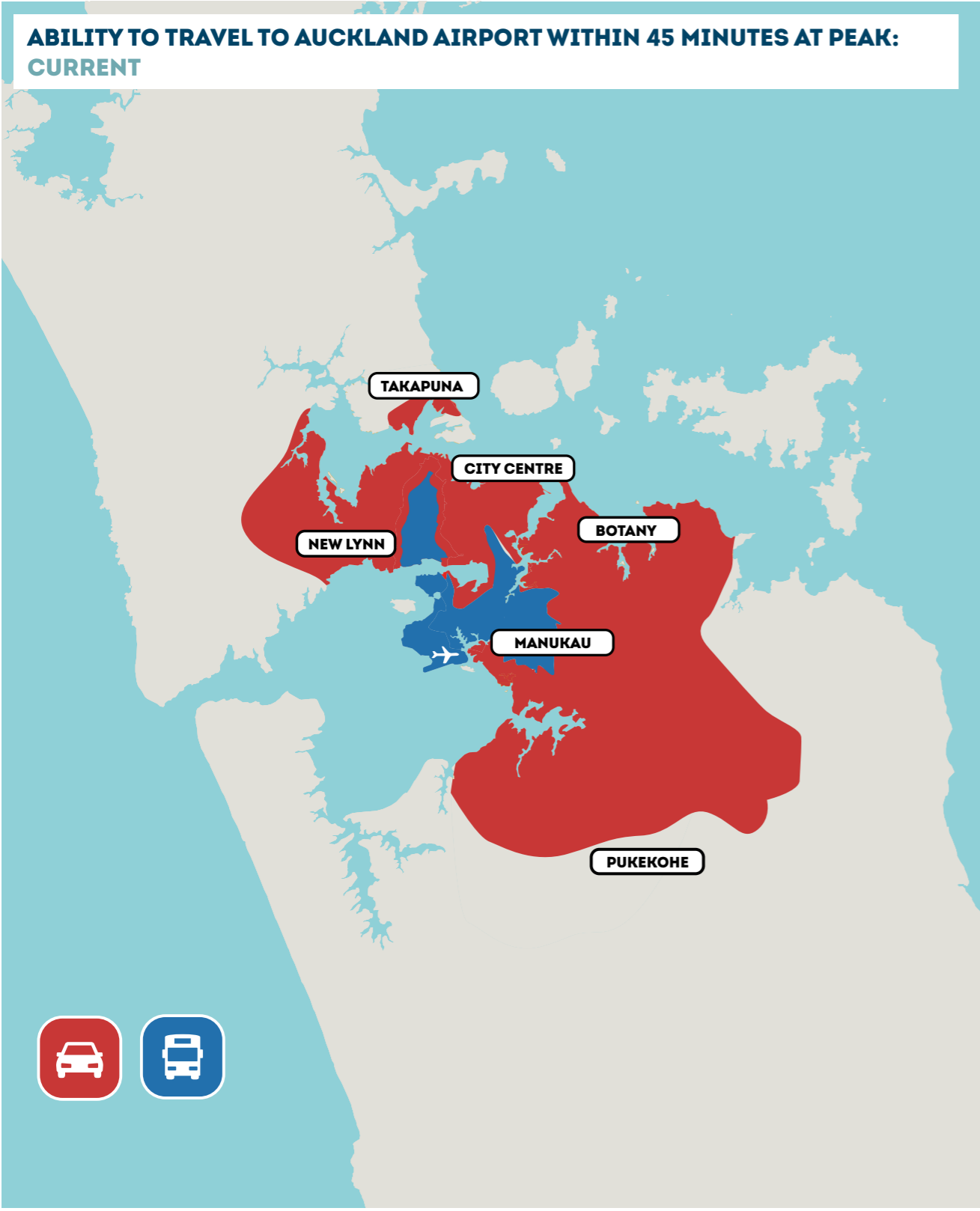
SH20b Peak Hour Capacity vs Demand

■ Eastern Access via SH20b ■ Bus Services
■ RTN East — Demand



2020 PROGRAMME EFFECTIVENESS

EFFECT OF 2020 PROGRAMME ON PUBLIC TRANSPORT ACCESSIBILITY TO THE AIRPORT & SURROUNDING AREA



Source: Google real travel time estimates (car). Actual journey time data from AT (bus).

Source: Google real travel time estimates (car). Actual journey time data from AT (bus). GIS travel time analysis