Overview

• Strategic Context
• City Rail Link
• Light Rail
• Summary
Strategic Context
Auckland Public transport patronage by mode 1920-2014

- Tram
- Bus
- Trolley bus
- Train
- Ferry

Million of passenger trips per annum

1920-1924: The Great Depression 1929-1935
1939-1945: World War Two
1952-1959: Northern, Southern, Western motorways opened
1956: Last Tram line decommissioned
1970's oil shock
1959: Auckland Harbour Bridge opens
2004: Patronage funding
1999-2003: Kick Start funding

Auckland Transport
An Auckland Council Organisation
City Access

- The number of people entering the city centre is increasing
- Since 2001, more people take PT to the city centre during the morning peak and fewer take cars

People Entering The City Centre by Car and PT: 2001-2014
(Morning Peak Period, 7am-9am)

Number of People travelling into the City Centre

- Public Transport
- Private Vehicle

<table>
<thead>
<tr>
<th>Year</th>
<th>Public Transport</th>
<th>Private Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Growth Challenge

Household Growth

Employment Growth

1 dot = 100 HHLDs
2006 Households
HH increase 2006-21
HH increase 2021-31
HH increase 2031-41

1 dot = 100 jobs
2006 Employment
Empl increase 2006-21
Empl increase 2021-31
Empl increase 2031-41

(Art3 2a Scen | Mod88)
City Centre Capacity

Peak Inbound Bus Volumes

Peak Inbound Bus Volumes

Auckland Transport
An Auckland Council Organisation
City Centre Congestion
Frequent Transit Network (FTN)
CRL does not address access from the north, the central and southern isthmus or university and Wynyard Quarter

- Buses from non rail areas will create significant congestion and affect economic growth

- Bus terminal capacity is at a premium and will become challenging and costly

- More of the same means bumper to bumper cars will be replaced by wall to wall buses
CCFAS Findings

- Access crisis into the city centre by 2021 with medium population growth and despite completion of all (pre-CRL) planned transport improvements.

- Auckland’s growth will outstrip its road capacity and maximising rail is an essential part of an integrated access solution

- Bus-only investment will meet demand for only a few years and require significant land take for priority lanes and depots

<table>
<thead>
<tr>
<th>Now</th>
<th>2021</th>
<th>2041</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network at capacity, especially on critical corridors</td>
<td>Bus volumes on key routes will need to double</td>
<td>Virtually all key road corridors at capacity</td>
</tr>
<tr>
<td>Vehicle speeds 16kph</td>
<td>Vehicle speeds more than halve to 7kph</td>
<td>Vehicle speeds down to walking speed- 5kph</td>
</tr>
<tr>
<td>Rail approaching capacity</td>
<td>No additional rail services can be provided</td>
<td>Rail over capacity but additional services can’t be provided</td>
</tr>
<tr>
<td>Access to city centre becoming constrained</td>
<td>Access to city becoming restricted</td>
<td>Demand for travel to city centre cannot be met</td>
</tr>
</tbody>
</table>
CCFAS2 Objectives

• Significantly contribute to lifting and shaping Auckland's economic growth

• Improve the efficiency and resilience of the transport network of inner Auckland and the city centre

• Improve transport access into and around the city centre to address current problems and for a rapidly growing Auckland

• Provide a sustainable transport solution that minimises environmental impacts

• Contribute positively to a liveable, vibrant and safe city

• Optimise the potential to implement a feasible solution
## CCFAS2 scope

### Corridors:
Comprehensive review of urban arterials and city centre corridors

Focus on those with significant PT patronage and/or connections to significant land use

### Modes:
Multi modal combinations considered including a mix of public transport options:
- Bus, high capacity bus (double decker/bendy), bus rapid transit
- Commuter rail
- Light rail

### Network:
Multi modal networks were developed that targeted forecast demands
Different combinations of corridors and modes were developed

All network options included CRL and surface bus improvements
New bus network
## Typical mode capacity

<table>
<thead>
<tr>
<th>Modal Characteristics</th>
<th>Bus shared path</th>
<th>Bus lane separate</th>
<th>Busway priority</th>
<th>Light rail shared path</th>
<th>Light rail priority</th>
<th>Commuter rail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum capacity (people/hr)</td>
<td>2,500</td>
<td>4,000</td>
<td>6,000</td>
<td>12,000</td>
<td>18,000</td>
<td>20/25,000</td>
</tr>
<tr>
<td>Average speed (km/h)</td>
<td>10-14</td>
<td>14-18</td>
<td>15-22</td>
<td>15-22</td>
<td>18-40</td>
<td>18-40</td>
</tr>
<tr>
<td>Cost (est) $m/km</td>
<td>n/a</td>
<td>&lt;1</td>
<td>35</td>
<td>20-40</td>
<td>50-100</td>
<td>&gt;</td>
</tr>
</tbody>
</table>
Commuter and light rail

Commuter rail – CRL – links what exists

- A regional solution to optimise rail for an efficient transport network

Light rail - a new solution

- Optimises road within the transport network
City Rail Link
City Rail Link

• CCFAS identified CRL with surface bus improvements as the only option to meet predicted transport demand

• Auckland’s number one transport priority

• Provides for growth

• Catalyst for economic development

• Integrated land use

• Supports special housing areas

• Environmental imperatives
## CRL Travel Times

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Travel by train / bus (minutes)</th>
<th>Percentage improvement in travel time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Before CRL</td>
<td>After CRL</td>
</tr>
<tr>
<td>New Lynn</td>
<td>Aotea Station</td>
<td>51</td>
<td>23</td>
</tr>
<tr>
<td>Morningside</td>
<td>Aotea Station</td>
<td>39</td>
<td>14</td>
</tr>
<tr>
<td>Onehunga</td>
<td>K'Road Station</td>
<td>47</td>
<td>27</td>
</tr>
<tr>
<td>Manukau</td>
<td>K'Road Station</td>
<td>61</td>
<td>42</td>
</tr>
<tr>
<td>Newmarket</td>
<td>Aotea Station</td>
<td>27</td>
<td>10</td>
</tr>
<tr>
<td>Britomart</td>
<td>Mount Eden</td>
<td>16</td>
<td>9</td>
</tr>
</tbody>
</table>
Development opportunities

CRL - Driving Auckland Development
“The CRL is the foremost transformational project in the next decade. It creates the most significant place shaping opportunity” – Auckland Plan

“Auckland’s central business district needs 18 more PWC Towers, 18 Metropolis buildings and 18 shopping centres by 2031” – Alan McMahon national director of research and consulting at Colliers International
CRL progress

- CRL notified Jan 2013
- Designation confirmed April 2014
- Six appeals now in mediation
- About 70 properties being purchased—nearly 50 to date
- About 30,000sq m of property under active management
- November 2014 – Council resolved to fund early construction
- Subterranean purchase to start this year
# CRL Programme

<table>
<thead>
<tr>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018-2024</th>
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</table>

## Main Works

- **NoR & Property Acquisition**
- **Reference Design & tender preparation**

## Early Works

- **Design & consenting (Phase 1)**
- **Construction (Phase 2)**
Design Progress

- 100 strong integrated design team in co-located project office
- Expertise drawn from New Zealand, Europe, Asia, America and Australia
- Benchmarking best practice from new underground railways around the world
- Significant design work with Manawhenua to combine cultural and technical excellence to create a unique experience
Construction Footprint
Construction Works Packages

Contract 1 – Britomart to Downtown Shopping Centre (DSC)
- Temporary accommodation at Britomart behind the glass box
- Temporary bridging and decking for pedestrians and cyclists on lower Queen St
- Removing the subway between the CPO building and DSC

Downtown Shopping Centre (DSC)
- Precinct to develop a 40 level tower on DSC site, and constructing CRL tunnels below
Construction Works Packages

Contract 2 – Albert St from Downtown Shopping Centre to Wyndham St

- Running tunnels up Albert St to the southern side of the Wyndham St intersection
- A laydown area in lower Albert St and keeping Customs St active
- Stormwater relocation from Wellesley to Swanson Streets
Enabling Works Construction Timeline

Early 2015
• Resource consents notified
• DSC agreement
• Early works design contract awarded
• Community Liaison Group (CLG) set up
• Main works reference design

Mid – late 2015
• Early works detailed design complete
• Negotiation process for early works construction
• Work starts at Britomart to Wyndham Street

2016+
• Works progress in the city centre and become more evident
• CLG continues
• Ongoing communication with affected parties
Light Rail
**History**

- Horse drawn trams start 1884
- Electric trams start 1902
- Last tram 1956 – covered 72kms
- Trolley buses roll out 1949-56
- Trolley buses end 1980

**More recently**

- 1990 NZ Rail proposed light rail to ARC and ACC
- ARC proposed light rail on western line and city centre
- ACC future proofs Britomart for light rail
- Central Transit corridor design in early 2000s
- 2012 CCMP includes light rail potential
- Waterfront Plan considers trams
Future city centre transport network

LRT Overview

[Map showing proposed light rail network and bus corridors in Auckland, highlighting key locations such as Britomart, Wynn Vale Quarter, Learning Quarter, and Newmarket.]
Queen St past and future

LRT Overview
Britomart past and Fanshawe Street future

LRT Overview
Key Features/benefits

<table>
<thead>
<tr>
<th>Greater capacity (300 people)</th>
<th>Space efficient- no need for terminus or turn around</th>
</tr>
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<tbody>
<tr>
<td>Uses less road space</td>
<td>Quiet</td>
</tr>
<tr>
<td>More doors to keep the dwell times below 30 seconds at peak</td>
<td>More likely to get people out of their cars</td>
</tr>
<tr>
<td>Faster</td>
<td>Permanent infrastructure encouraging development</td>
</tr>
<tr>
<td>Level boarding across a narrow gap</td>
<td></td>
</tr>
<tr>
<td>Improved way finding</td>
<td></td>
</tr>
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</table>
International Experience

LRT Overview

Gold Coast - ahead of expectations - 238k passenger trips in the first 14 days
Heritage/Civic Spaces

LRT Overview
Summary
Summary

- CRL starts construction later this year
- No solution to city centre road congestion identified that doesn’t involve light rail
- Regular report back to council on these initiatives
Transport - Conclusions

• There is an established way of approach transport appraisal based on straight line growth forecasts and values of time with fixed population and employment patterns, but it is not clear that it reflects what actually happens.

• In reality transport drives land use patterns just as much as land use drives transport demand.

Delivering transport choices to get you where you want, when you want.

Our Vision