

The Effects of The Northern Busway on Surrounding Land Use and Travel Behaviour

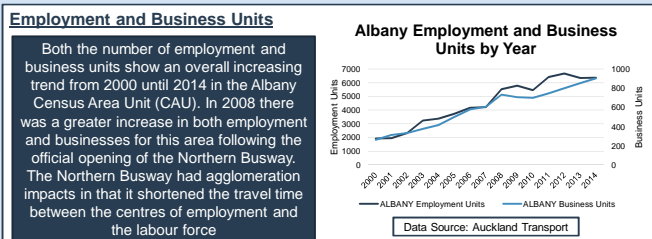
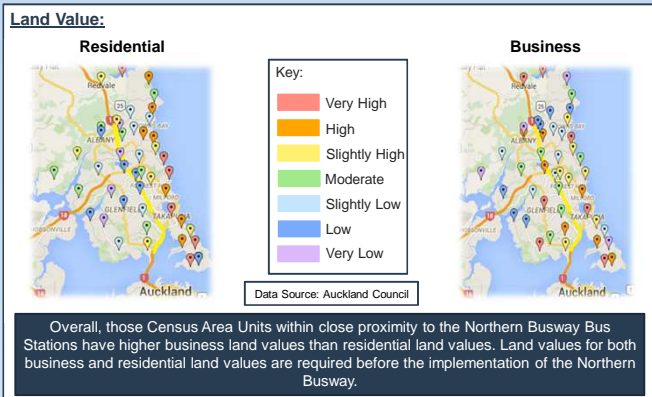
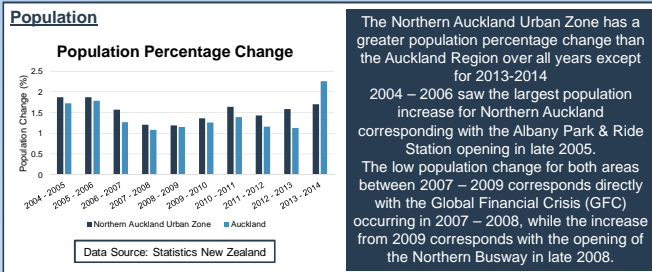
Project Number: #29
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Introduction

- Like many other major cities around the world, Auckland is moving towards **Public Transport (PT)** as a remedy to the worsening issue that is **traffic congestion**, while encouraging the city's use of **sustainable travel modes**.
- In year **2008**, Auckland's first **Bus Rapid Transit (BRT)** opened on Auckland's North Shore. Commonly known as **The Northern Busway**, this dedicated roadway for buses acts as a backbone of the PT network from the North Shore to Auckland's Central Business District (CBD), providing a fast, reliable and convenient mode of transport at a low cost for commuters.
- This new infrastructure has caused the **travel behaviour of North Shore residents to be unique in New Zealand**.

Land Use

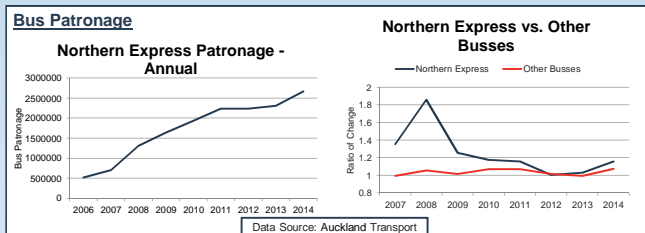
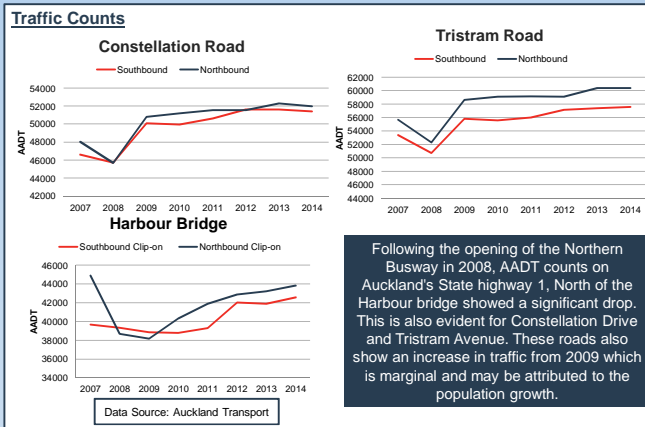


Research Aims

This research aims to *assess the impacts the Northern Busway has had on the North Shore in terms of travel behaviour and land use.*

- In order to achieve this, the following **objectives** are required:
- Assess the effects of the Northern Busway on **land use (Population, Land Values and Employment)**
 - Determine the **shift in travel mode** due to the Northern Busway (**Car vs. Bus**)
 - Assess **multimodal integration (Bus and Bike)**

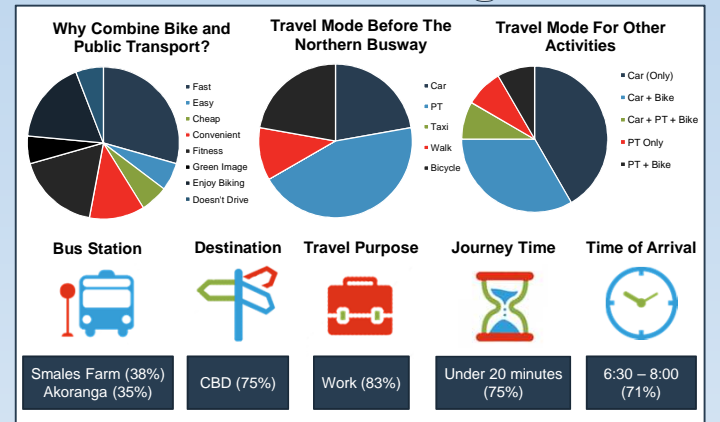
Travel Behaviour



Methodology

- Land Use**
- Population** was analysed by comparing population change in percentage for the Northern Auckland Urban Zone to the greater Auckland region.
 - Land values** were assessed by identifying Census Area Units (CAU's) within close proximity to the Northern Busway Bus Stations and comparing the residential and business land values between each
 - Employment and Business** units were assessed only for the highly commercial area of Albany. Particular interest was paid to the years 2005 (opening of the Albany Park & Ride) and 2008 (opening of the Northern Busway)
- Travel Behaviour (Car vs. Bus)**
- Relevant **AADT (Average Annual Daily Traffic)** figures were extracted from State Highway AADT spreadsheets and then plotted against time so that trends could be analysed.
 - Raw figures for **patronage** on the Northern Express service and all other busses were obtained. The trends and ratios of change were then compared between the two groups.
- Multimodal Integration (Bus and Bike)**
- Survey** undertaken at each of the 5 Northern Busway Stations (Albany, Constellation, Sunnynook, Smales Farm, Akoranga)
 - Performed during 2 **working weeks** (Monday – Friday) between the 6:30am and 9:30am **peak hours**
 - Type of **travel modes** used and reasons behind the use of these were determined.
 - Typical cyclists **characteristic** were also determined
 - Data was analysed using **percentages** and **trend analysis**.

Multi-modal Integration



Key Conclusions

- The amount of people living in the Northern Auckland Urban zone has consistently increased at a greater percentage rate than the rest of Auckland since before the Busways introduction.
- In those **Census Area Units** surrounding the **Northern Busway**, **Business land values** are on average **greater than residential land values**.
- Following the opening of the Northern Busway, **Albany Employment and Business units** both saw a **greater increase**.
- AADT's on State Highway 1** decreased sharply in both Northbound and Southbound directions following the introduction of the Northern Busway.
- The number of people using the Northern Express, the most frequent bus service along the Northern Busway, has shown a **steady increase** since its implementation in late 2005.
- Integration of bike and bus** is a **popular travel choice** since the opening of the Northern Busway, being a **fast and enjoyable travel mode** that incorporates **fitness** into the commuters travel routine.
- Overall it can be concluded the Northern Busway has had a **positive effect on both travel behavior and land use**