

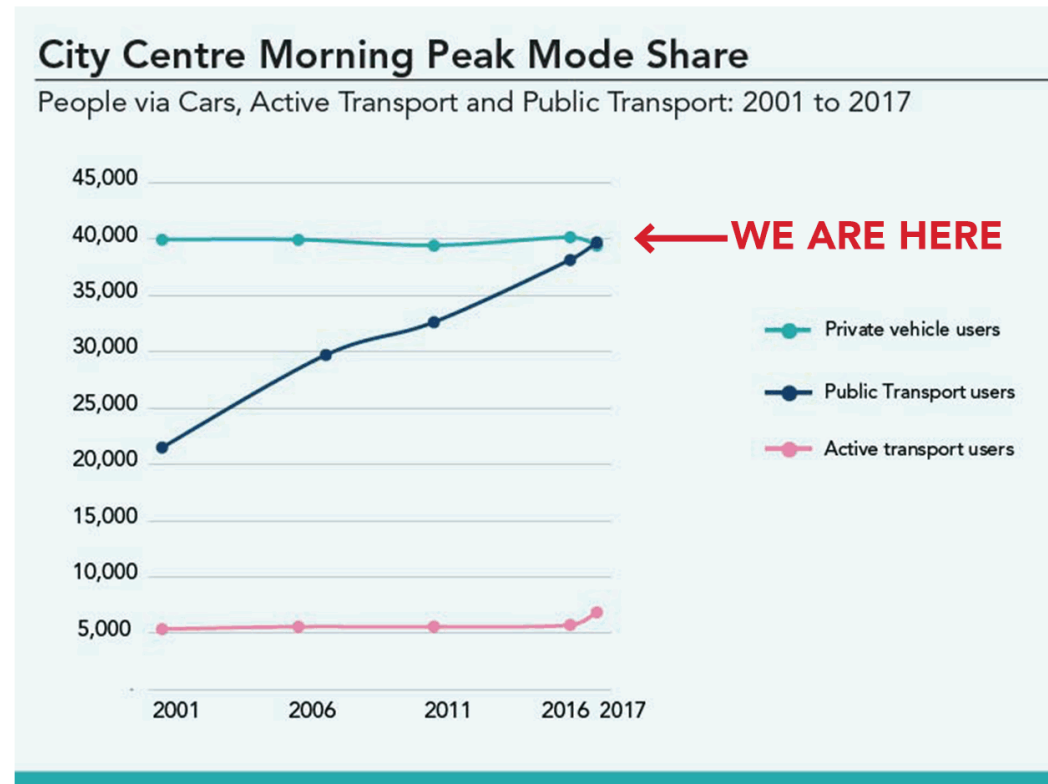


Business Case for Walking

Investigating the Economic Value of Walking in the Auckland City Centre

The Rise and Rise of the Auckland City Centre

- For the first time since the 1950's there are more people commuting to the City Centre by public transport, walking, and cycling than driving
- The resident population (50,000) has doubled over the last ten years. Residents now outnumber the people commuting in by cars
- Number of jobs in the City Centre is now to 110,000
- The estimated total daytime population is 149,000 people
- There are an estimated 500,000 internal walking trips



Public Life

The number of pedestrians on Queen Street has doubled since 2012

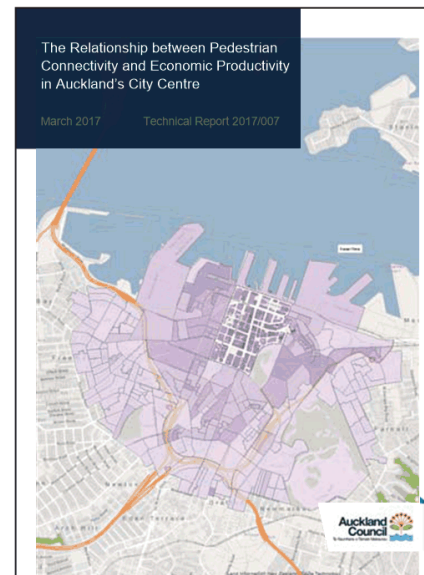
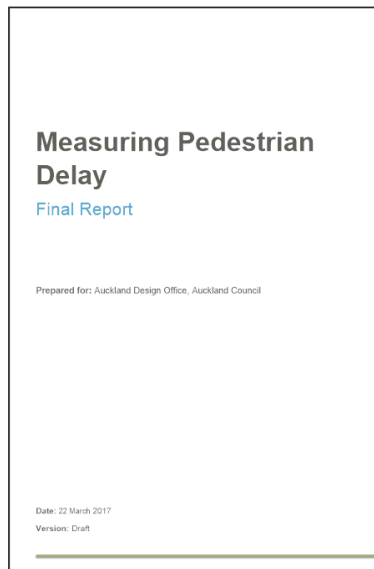
+34% increase in pedestrians across the City Centre

+49% of retail spending since 2010 (now \$1.8 billion/year)

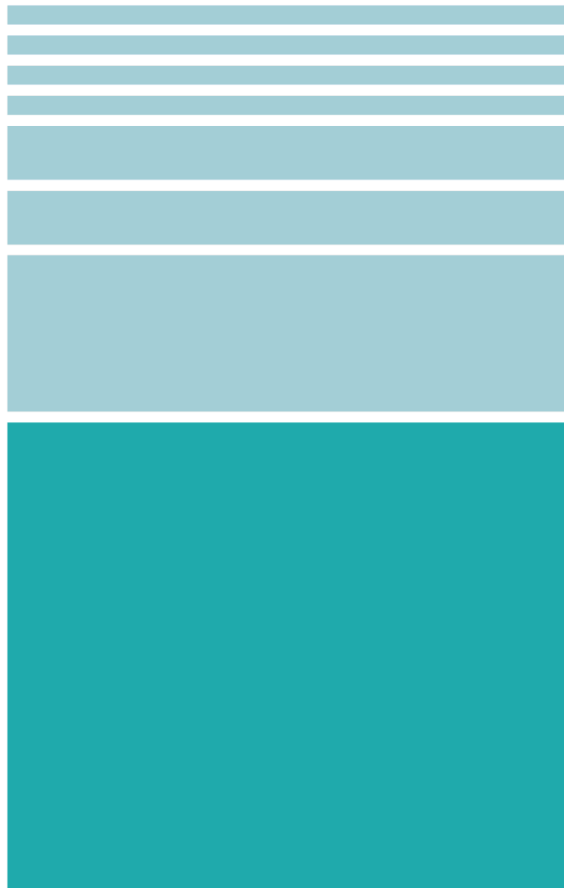
+41% increase in cafe seats across the City Centre since 2010

+61% increase in public seating places across the City Centre since 2010

PUBLIC LIFE SURVEYS- 2010-2016 (GHIEL, AITKEN TAYLOR)



Transport Economics



- OTHER
- HEALTH BENEFITS
- ENVIRONMENTAL BENEFITS
- TRANSPORT RELIABILITY BENEFITS
- HEALTH BENEFITS (WALKING)
- WIDER ECONOMIC BENEFITS**
 - Productivity
- TRANSPORT USER BENEFITS**
 - Travel Time Benefits
 - Quality Improvements



Valuing the Urban Realm (VURT)

Estimating the user benefits from public realm investment

- Methodology created and used by Transport for London
- Objective, evidence-based justifications for investment in public realm
- Quantifies **user benefits**
- Comparative before & after evaluation
- Measures & compares changes in public realm quality
- Link and space values: moving through, lingering, and sitting



Valuing the Urban Realm (VURT)

- Uses Pedestrian Environment Review System (PERS)
- Some factors are more important than others
 - » Future user numbers
 - » Effective footpath width
 - » Personal security
 - » Sense of place
 - » Feeling comfortable

Valuing Urban Realm Toolkit



User Benefits - Step One

Scheme Name	
Section Number	

Base Input Data

Pedestrians Moving	Baseline	Scenario	Change (S-B)
Number (per hour)			0
Average Walk Distance (m)			
Average Walk Speed (m/s)	1.33	1.33	

Static Users	Baseline	Scenario	Change (S-B)
Number			0
Average Dwell Time (mins)			

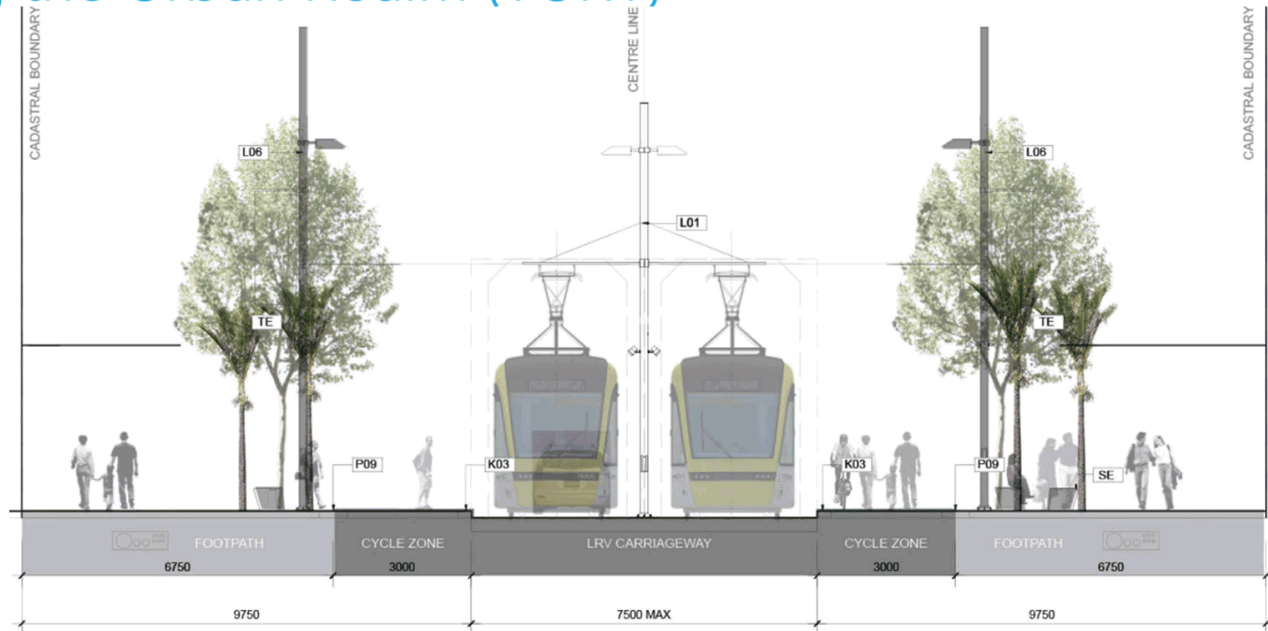
Time Period of Analysis	
Weekday Scaling Factor	
Annualisation Scaling Factor	0

PERS Changes

PERS Link Attributes	Baseline	Scenario	Change (S-B)	Baseline Value	Scenario Value	Change (ppm)
Effective width			0			0.000
Dropped kerbs			0			0.000
Obstructions			0			0.000
Permeability			0			0.000



Valuing the Urban Realm (VURT)



Queen Street Future Transit Mall

- Future Light Rail Transit / Pedestrian Mall
- 200% growth footfall
- NZ\$702,000 annual benefits
- NZ\$15,150,000 lifetime benefits

Measuring Pedestrian Congestion

Counting pedestrians in travel time assessment

- Transport assessment is largely based on the **user benefits** (or disbenefits) of changes in travel time
- Delay measurement typically estimates vehicle delay, with monetary values assigned using standard value of users travel time (including for non-work purposes)
- NZTA's (2016) *Economic Evaluation Manual* provides guidance on valuing travel time delays incurred by transport users, **regardless of mode of travel**
- However, **pedestrian delay is rarely measured** during cost benefit analysis of a project



Auckland's \$1.25b gridlock bill

5:30 AM Sunday Mar 24, 2013

Auckland Region Road Transport Traffic Transport

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It is commuters and businesses who pick up most of the tab, through wasted petrol, wasted time and delayed shipments. Photo / NZ Herald

Measuring Pedestrian Congestion



13x

pedestrians as vehicles on High Street all day



4x

pedestrians as vehicles on Queen Street all day





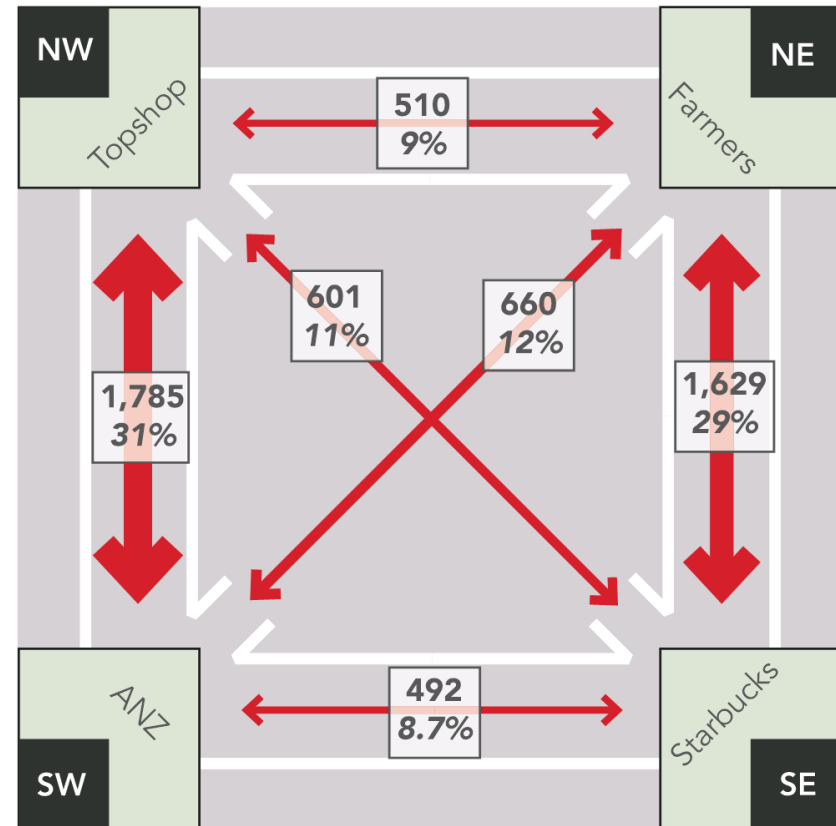
Measuring Pedestrian Congestion

- Over **7,700** pedestrians moved through the intersection in 1 hour
- **1,200** cars passed through the intersection in same hour
- Average delay per pedestrian **27 seconds**
- **161,115** hours of annual delay to pedestrians
- Annual wasted time due to delay "costs" **\$2.2 million**
- NPV is **\$36 million** for free flow conditions*

*based on a 40 year period with 6% discount rate

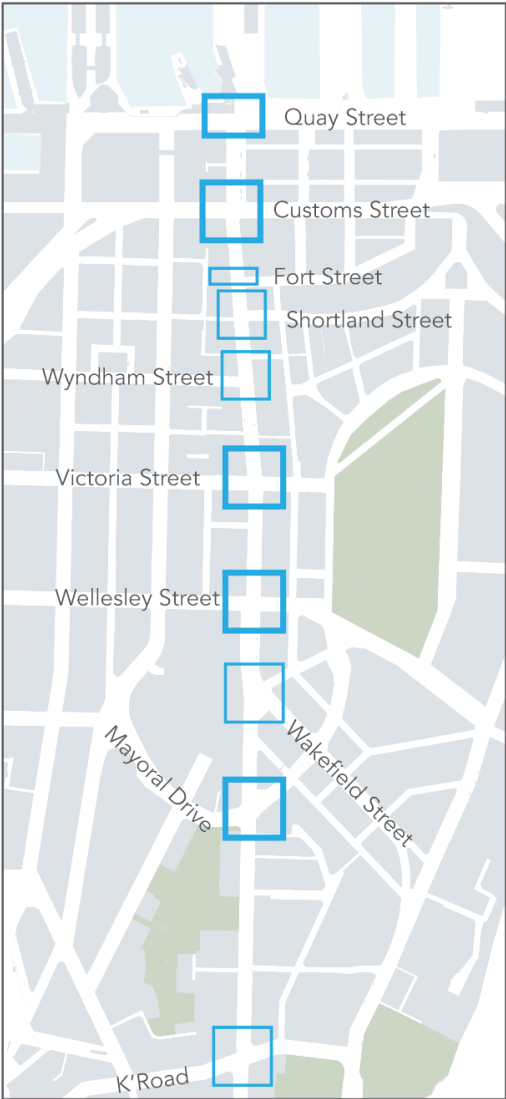


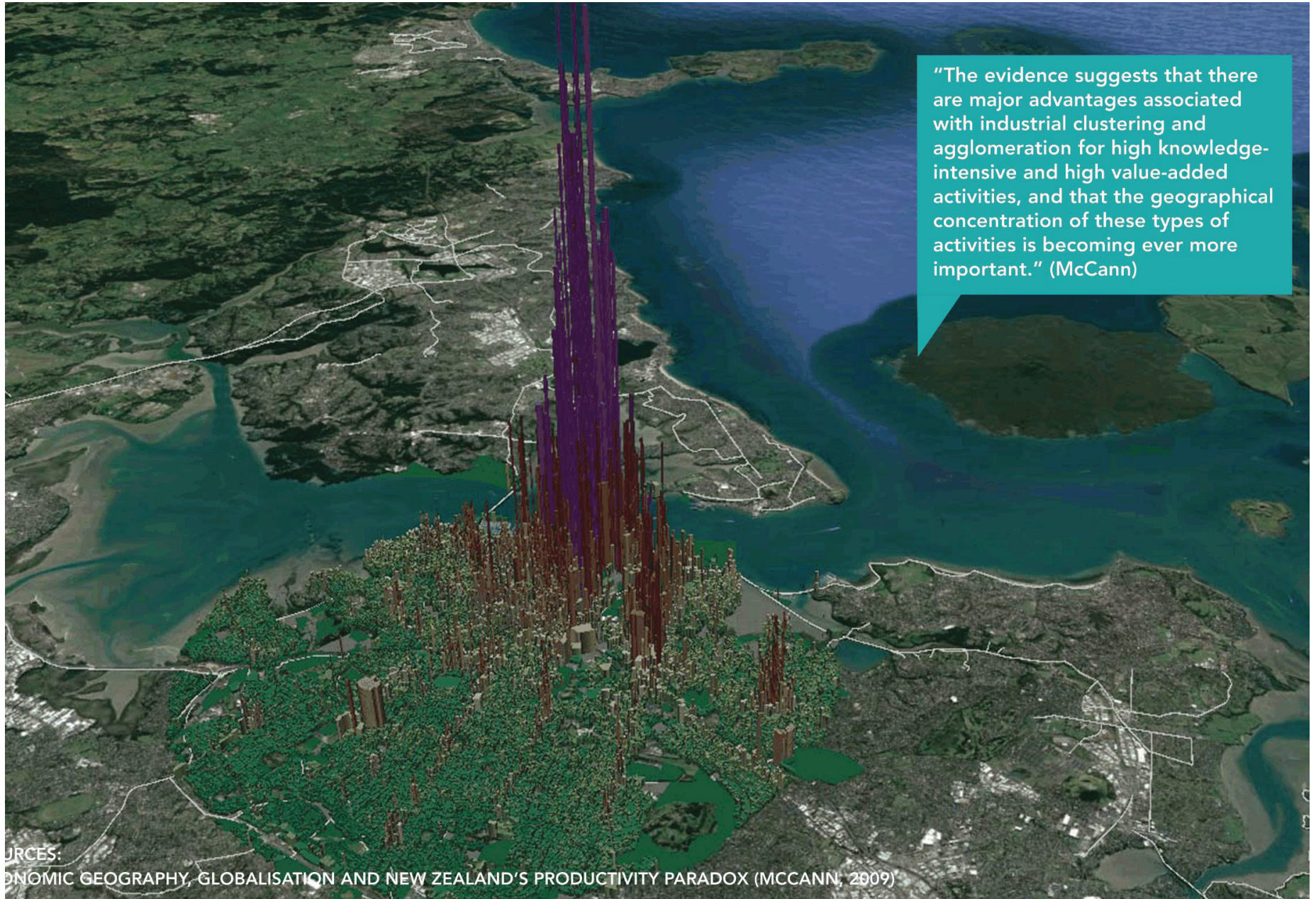
Victoria St / Queen St



Street Name	Intersection Type	Estimated Cost of Delay/Year
1. Quay Street	Barnes Dance, Midblock Crossing, Very High Ped Volumes.	~\$2M
2. Customs Street	Barnes Dance, T-Intersection, Very High Ped Volumes.	~\$2M
3. Fort Street	Barnes Dance, Midblock Crossing, High Ped Volumes.	~\$.5M
3. Shortland Street	Barnes Dance, T-Intersection Crossing, High Ped Volumes.	~\$.9M
4. Wyndham Street	Barnes Dance, T-Intersection Crossing, High Ped Volumes.	~\$.9M
5. Victoria Street	Barnes Dance, X-Intersection, High Ped Volumes.	\$2.2M
6. Wellesley Street	Barnes Dance, X-Intersection, High Ped Volumes.	~\$2.2M
7. Wakefield Street	Barnes Dance, T-Intersection, Med Ped Volumes.	~\$.5M
8. Mayoral Drive	Phased, X-Intersection, Med Ped Volumes.	~\$.7M
9. Karangahape Road	Phased, X-Intersection, Med Ped Volumes.	\$.7M
		~\$11.7M

NPV = ~\$186M





Proximity



Locating “in the centre of things” also means it is easier to meet people more often; whether it be a quick catch up coffee, a meeting with a number of people from different organisations, or simply bumping into people on the street – it is easier and less time consuming.

For most businesses, proximity to amenities for staff - including banks, supermarket, cafes, and services is an important location decision criterion.

Cost may not be a critical consideration for those committed to an A-Grade location

SOURCES:
DRIVERS OF BUSINESS LOCATION IN THE AUCKLAND CBD (GRAVITAS, 2011)

Pedestrian Connectivity and Economic Productivity

- Walking facilitates personal and business networking within business centres. Attractive public spaces and walkable streets create a platform for business and social exchange and support the spread of knowledge.
- The research suggests that walkability within the Auckland city centre is likely to make a positive contribution to economic productivity.



Pedestrian Connectivity and Economic Productivity

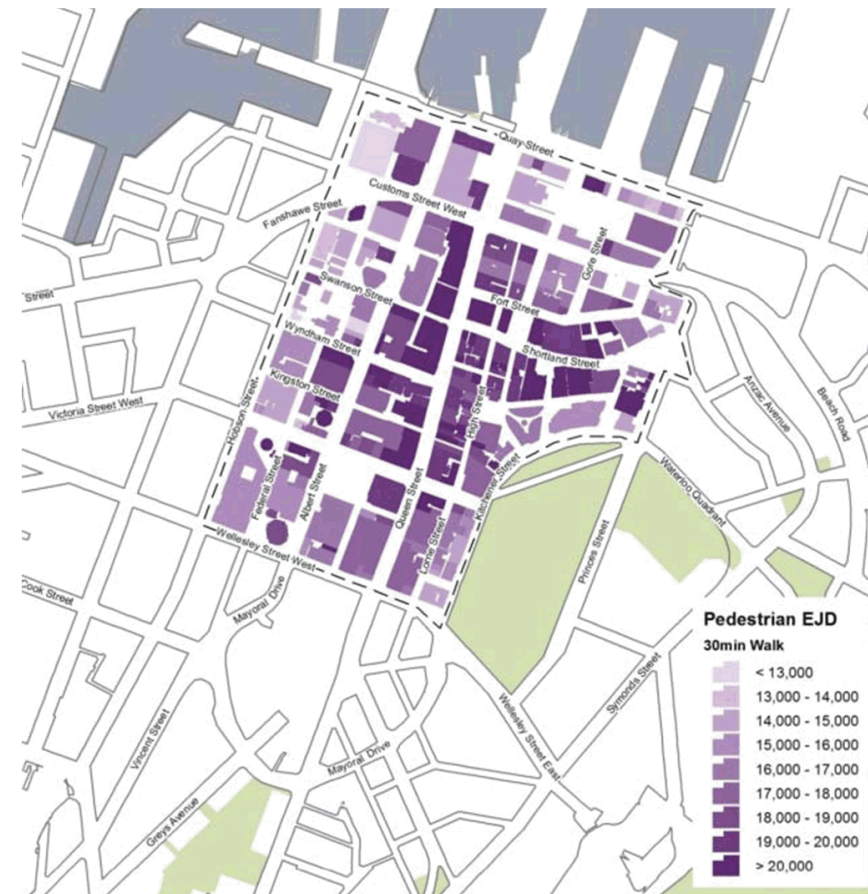
- A pedestrian network was developed based on the existing road network in the study area.
- Pedestrian links were assigned values based on their speed
- 'Network analyst software' was run to estimate the travel time between each origin and destination point.

Walking network within the study area



Pedestrian Connectivity and Economic Productivity

- Pedestrian travel time matrices were combined with detailed estimates of employment to create a measure of the Effective Job Density (EJD) by walking in all buildings within the study area.
- Agglomeration economics literature suggests that there is a positive and causal relationship between EJD and productivity.



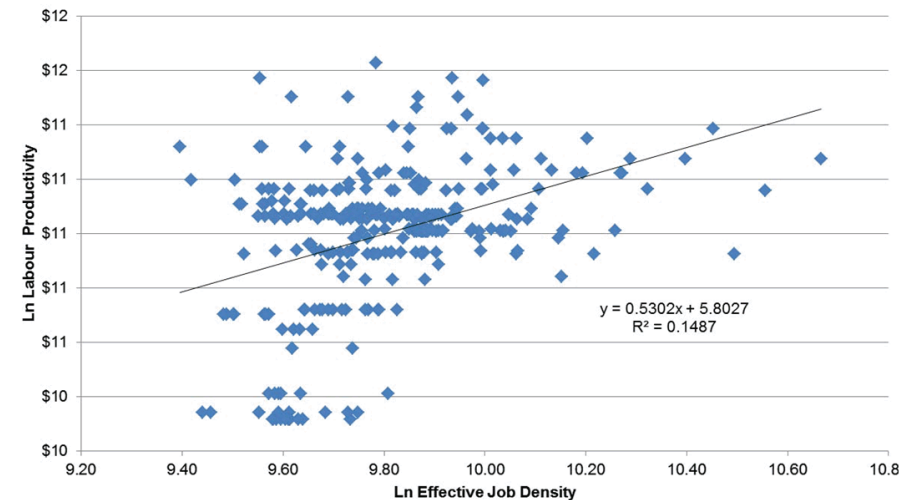
Source: Authors' estimates

Business Case for Walking | Pedestrian Connectivity and Economic Productivity

Pedestrian Connectivity and Economic Productivity

- A proxy measure for labour productivity was estimated based on detailed data on average annual wages from Statistics NZ's Data (2015).
- The point estimate suggests that a 10 per cent increase in walking EJD is associated with a 5.3 per cent increase in productivity.
- This means that a **1%** increase in walking EJD will increase the value of economy of the study area by 0.53% or approximately **\$42 million** based on the authors' estimate of \$8.01 billion GDP for the study area.

Figure 19: The association between walking EJD and labour productivity



Source: Authors' estimates

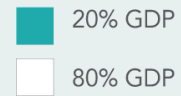


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Pedestrian Connectivity and Economic Productivity

- Scenario Testing placeholder

Auckland GDP



SOURCE: RIMU (2017), THE RELATIONSHIP BETWEEN PEDESTRIAN CONNECTIVITY AND ECONOMIC PRODUCTIVITY IN AUCKLAND'S CITY CENTRE (BASED ON 2015 DATA)



Share of Auckland Region's Employment in City Centre

By Industry, 2015



Source: Authors' estimates based on Infometrics customised (2015) data

Growing the City Centre

City Centre Masterplan “moves” to resolve spatial challenges



Staff Attraction: why firms locate in the City Centre

"For professional services firms that rely heavily on being able to recruit high quality graduates, a CBD location is considered essential to attract staff "

"For most businesses, proximity to amenities for staff - including banks, supermarket, cafes, and services is an important location decision criterion."

"There is prestige attached to working in the CBD. One of our competitors in the 1980s was located in low rise in [CBD fringe] and it probably set them back for a decade because it just wasn't the place where young professionals wanted to be working..."

SOURCE: DRIVERS OF BUSINESS LOCATION IN THE AUCKLAND CBD (2011)