

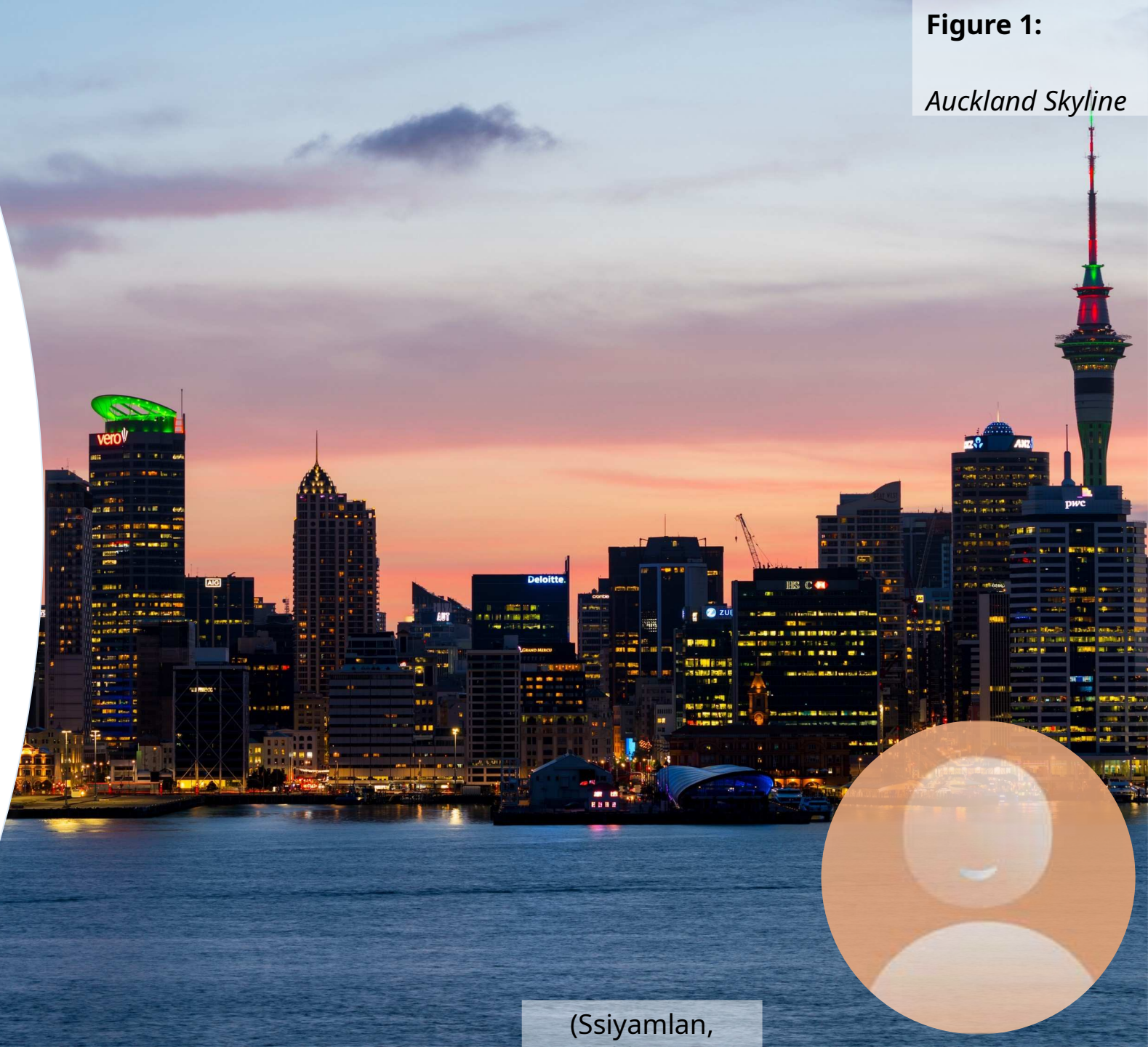
Figure 1:

Auckland Skyline

Transport Access Equity Gap

Arson Rashidmardani

Mina Al-Ali



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1:

Road Steepness Auckland

CBD

- Steep roads can be a major barrier for the elderly or disabled
- New Zealand Transport Agency states average slope of a path should be between 3-5% (Waka Kotahi NZ Transport Agency, n.d.)



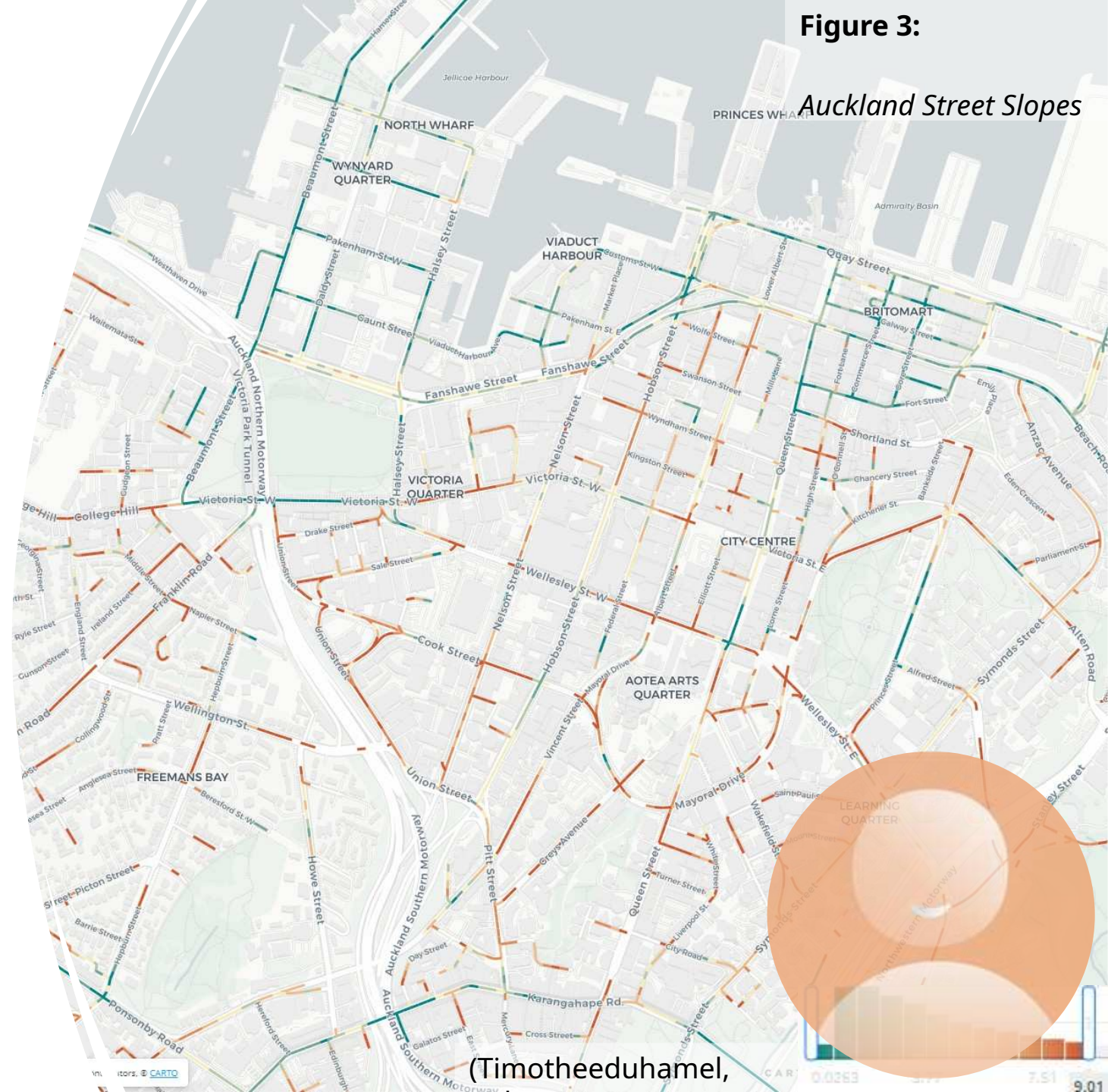
Figure 2:

Wellesley Street

(Google Street View,

1: Road Steepness Auckland CBD

- Figure 3 shows a map where street slopes across Auckland are highlighted
- Many of the roads around Auckland CBD are too steep to be accessible for all



1:

Road Steepness Auckland

CBD

- A literature review and study conducted found that steep gradients contribute to preventing disabled users from accessing public transport services (Park & Chowdhury, 2018)

Figure 4:

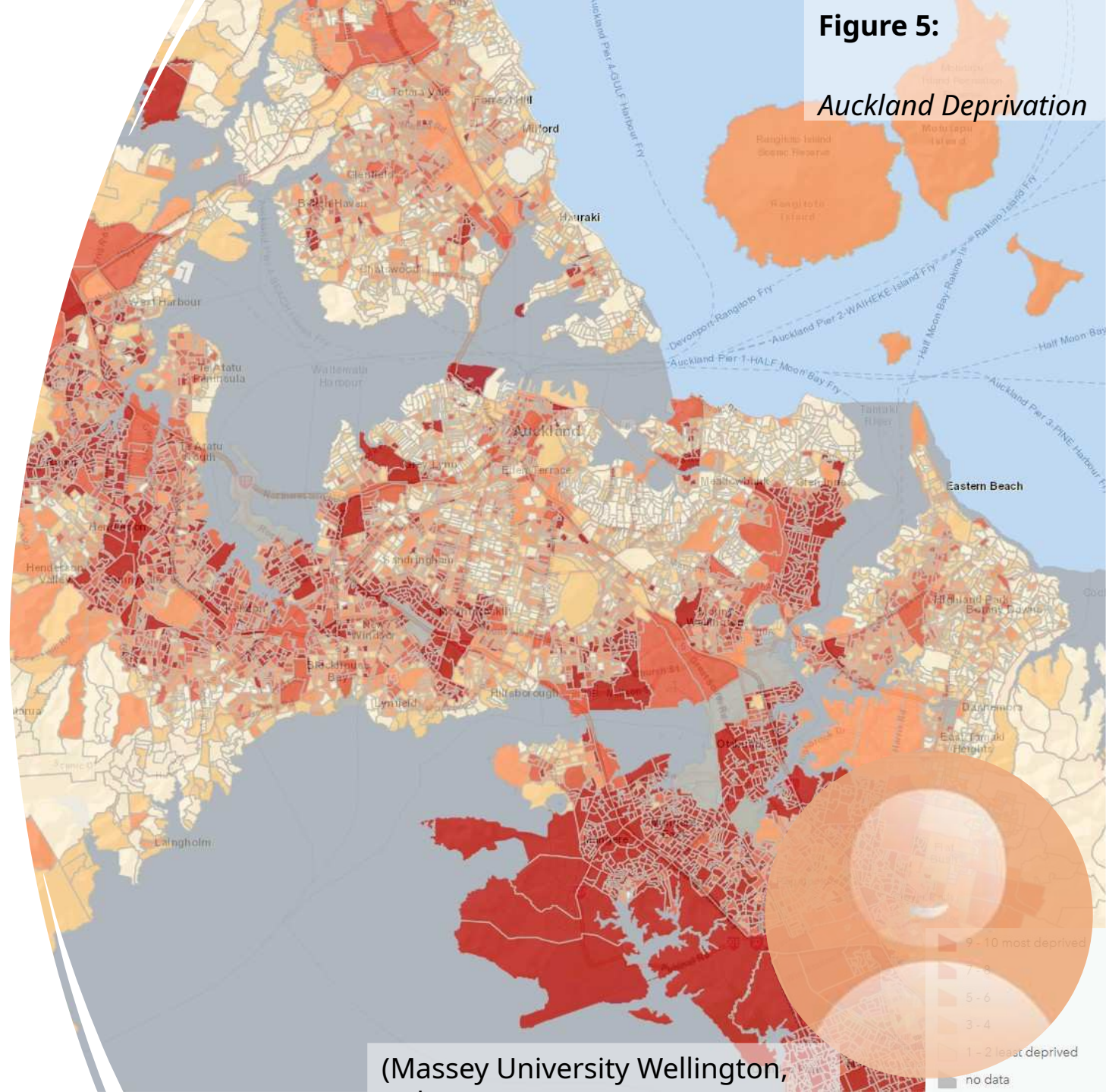
Liverpool Street



(Ingolfson,

Income Equity In Auckland

- New Zealand Deprivation Index provides a value of 1-10 demonstrating relative deprivation
- Figure 5 illustrates Auckland is severely segregated by socio-economic status
- Most deprived suburbs are located in the South and West

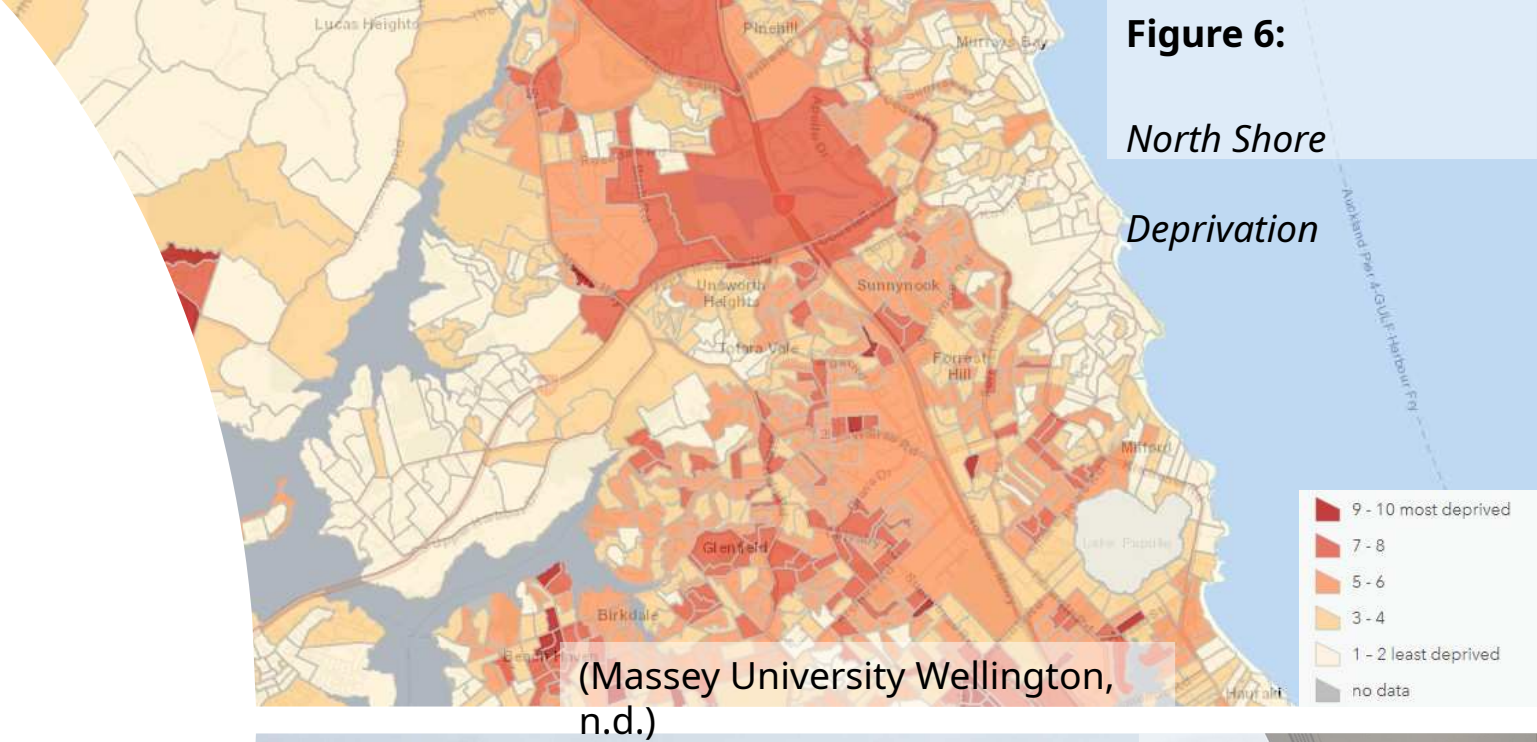


(Massey University Wellington,

New Zealand Example 2:

Income Equity Gap In Auckland

- The Northern suburbs are relatively well-off
- Well serviced by public transport
 - Northern Express
- Continued investment:
 - Albany busway extension

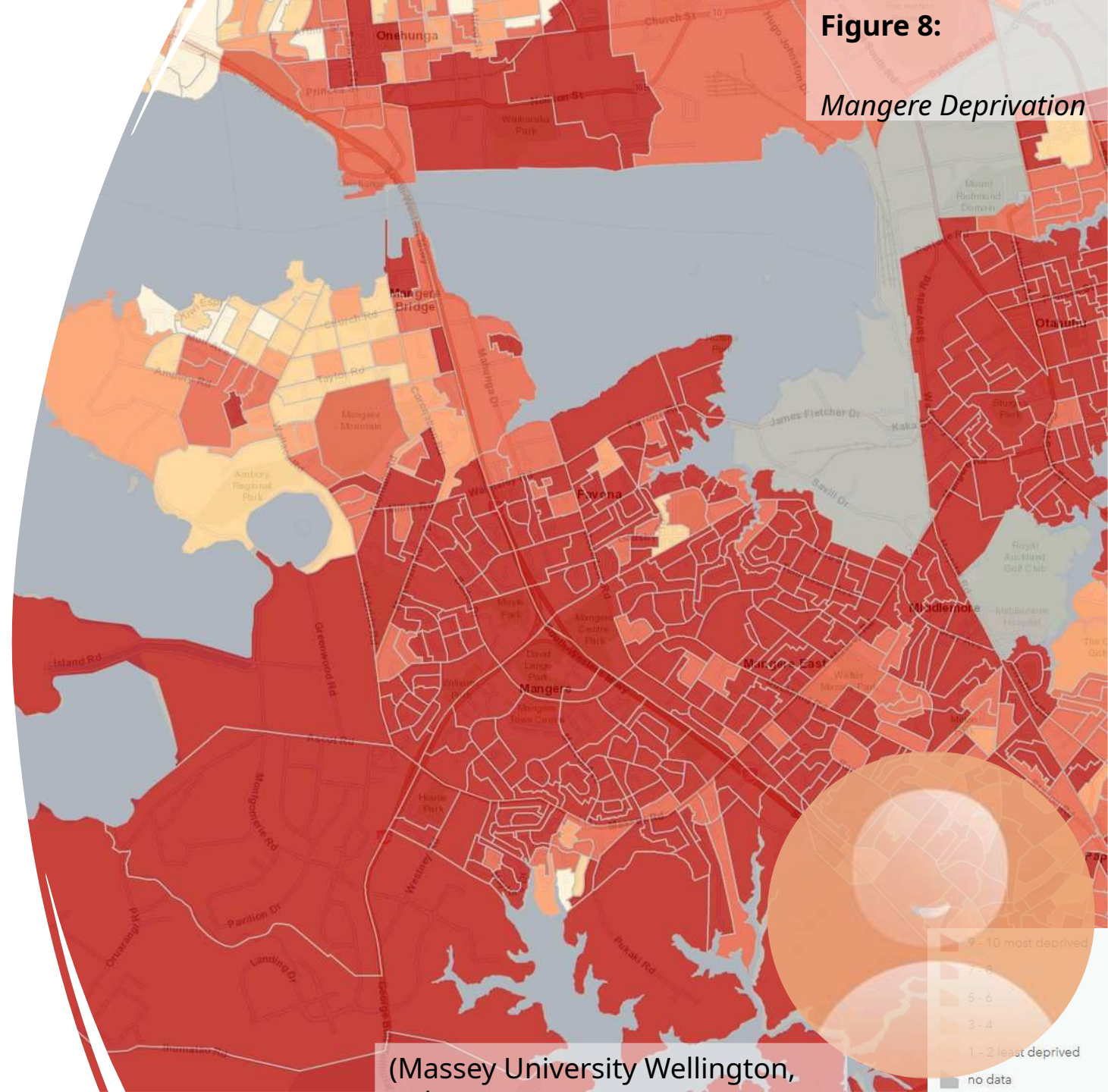


New Zealand Example 2:

Income Equity Gap In Auckland

- Mangere is a highly deprived suburb
- Very poorly serviced by public transportation
- Proposed to be served by Auckland Light Rail, but cancelled
- Recommendation to increase frequencies in low-income areas (Ministry of Transport, 2020)

Figure 8:
Mangere Deprivation



(Massey University Wellington,

New Zealand Example 3:

Gender Equity Gap In Auckland

- Public transport can be difficult for women to access and utilise
- Barriers include:
 - Safety Concerns
 - More likely to travel off peak
 - More complex travel patterns
 - Shorter, more frequent, more dispersed trips
 - (United Nations, 2008)
 - More likely to be encumbered while travelling

Figure 9:

Bus Stop



(Andrew Chew,

International Example: Income Equity Gap in Sydney

- Large portion of roads tolled
- Claims of being world's most tolled city
- 87% of people consider tolls are too high
- This leads to two classes of transport users:
 - Those who can pay and avoid traffic
 - Those who can't pay and get stuck in traffic
- (Smith, 2024)

Figure 10:

Sydney Motorway



(Kwasnicki, 2016)

International Example: Income Equity Gap in Sydney

- Hypothetical case study:
 - Acacia Garden To Rushcutters Bay
 - Toll roads
 - 35 minutes
 - \$20 dollars each way
 - (Transport for NSW, n.d.)
 - Free roads
 - 1-2 hours
 - Free
 - (Google Maps, 2024)
 - Public transport
 - 1.5 hours
 - 3-6 dollars
 - (Transport NSW, n.d.-b)



Figure 11:
Sydney Map

(Apple Maps, n.d.)



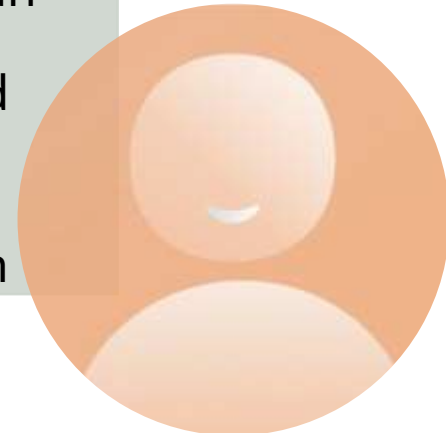
Relevance to Urban Planning

New Zealand example 1:

Urban environments are a major barrier
Transport services can be located on accessible routes
Footpaths and ramps can be made less steep

New Zealand example 2:

The population of Auckland is spatially segregated due to urban planning
Policies like inclusionary zoning can reduce concentration of low-income groups in certain deprived suburbs
An equitable funding system that prioritises the places worst off can be implemented





Relevance to Urban Planning

New Zealand example 3:

Lack of lighting can lead to a feeling of unsafeness

Crime Prevention through Environmental Design can address preception of safety and comfort

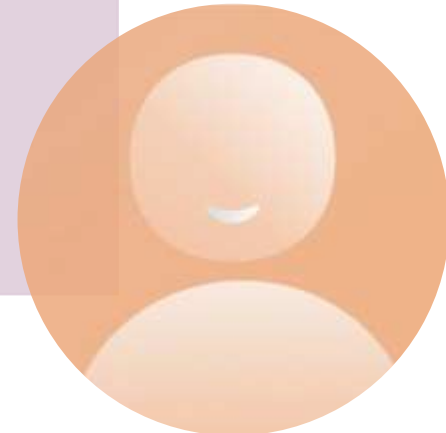
Public transport schedules can be re-designed to not disincentivise off-peak travel

International example:

The creation of transport infrastructure is a vital responsibility of planners

Retaining public ownership of roads can lead to fewer tolls

Non-regressive forms of funding such as a progressive income tax can be used to service loans for infrastructure projects, rather than regressive tolls



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