Panmure: The Evolution of an Interchange

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Why Is Good Interchange Important?

- Interchange is unpopular
  - Takes time
  - Involves uncertainty
  - Can increase cost
  - But often unavoidable

Seek to Reduce “Interchange Penalty”

- What is Interchange Penalty?
  - Users’ perceptions of the “cost” of interchange
  - Can be deterrent to public transport use, or mode choice
  - Varies according to design and service quality, but also from person to person

Valuing “Interchange Penalty”

- In modelling terms
  \[ U = \alpha I + \beta TT + \delta W \]

- Function of:
  - Need to interchange (inconvenience factor)
  - Travel (walk) time, weighted by quality
  - Waiting time, weighted by quality
  \[ \alpha = \lambda_2 \mu_1 T + \lambda_3 \mu_2 + \lambda_4 \mu_3 + \lambda_5 \mu_4 + \lambda_6 \mu_5 \]
So how do we reduce the “cost”?

- Good interchanges need:
  - Stops /platforms / parking / drop off zones that are close together
  - Connections direct and obvious, safe and cater for mobility impairments
  - Information, real time service updates, clear wayfinding
  - High quality, safe, secure waiting areas, ideally with toilets, refreshments
  - Frequent and reliable services

- Seeking to achieve integration - the seamless journey
**RTN Service Plan 2016**

- 62 buses/hr/direction across Panmure Bridge
- + 24 buses/hr on local routes
  - = **86** buses/hr/direction at Panmure Interchange
- 50% of RTN buses terminate at Panmure station
- Also big bus-bus interchange
- Need 6 bus stops in each direction in 2016

**Scheme Stage (2009) Proposal**

**Scheme Stage Proposal**

- 2 Bus Stops per direction

**Scheme Stage Proposal + Enhanced Capacity**

- 6 Bus Stops per direction
Scheme Stage Proposal + Enhanced Capacity 2

- Local Bus Stops per direction
- RTN Bus Stops per direction

Segregated Busway – Lagoon Drive

- Panmure Station
- Lagoon Leisure
- Church Crescent

Segregated Busway

- Local Bus Stops
- RTN Bus Station

Segregated Busway + Local Bus Road 1

- Local Bus Stops
- RTN Bus Station
Segregated busway provides better reliability, capacity for growth

Interchange better serves both station and town centre

Big improvement to bus-bus and bus-rail interchange

Trade off against increased cost

Summary

Interchange Design is an essential element of a PT system

Quality of interchange will affect patronage

Consider the end users, including mobility impaired, young and old

Minimise walk times, maximise quality of connections and waiting space
Thank You