South West LRT

Perth Light Rail TOD Masterclass

PIA(WA) / ACNU
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  - objectives, destination/connections, issues
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- Actions / Strategies / Priorities
Masterclass Brief

1. Identify destinations / alternatives
2. Identify redevelopment opportunities
3. Locate stops / ped sheds / connectivity
4. Estimate densities (residents, workers, students, others)
5. Identify stops / TODS, priorities
6. Identify interchange opportunities
7. Test intensification options
8. Review green spaces
9. Prepare Corridor Plan
## South-West

<table>
<thead>
<tr>
<th>TEAM EXPERTISE/ROLE</th>
<th>LRT SOUTH WEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitators/Urban Designers</td>
<td>Steve Thorne  Peter Annand  Chris Hair</td>
</tr>
<tr>
<td>Transport specialist</td>
<td>Chris Stapleton (P/T)</td>
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<tr>
<td>Urban designer or architect</td>
<td>Jeff Thierfelder  Naomi Kavanagh</td>
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<tr>
<td>Transport focus</td>
<td>Simon Cox  Louise Howells  Michael Somerville-Brown</td>
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<tr>
<td>Planning focus</td>
<td>Mark Bancroft  Robina Crook  Jeremy Holland  Lucian Iocob  Michael Murphy  Michael Willcock</td>
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<tr>
<td>Engineering focus</td>
<td>Christie McKinnon  Eamonn O’Lionnain</td>
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<tr>
<td>Other</td>
<td>Diona Olarv (UWA)</td>
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South-West LRT Objectives

• Enhancing travel options between Perth, UWA, QEII and Kings Park
• Increasing the density and intensity of use surrounding these destinations
• Integrating and reconnecting the park with the city – respecting the value of Kings Park
• Making LRT an attractive and preferred choice for commuters
Destination Connections

- UWA – Perth – academia and industry
- QEII – UWA – teaching hospital synergies
- QEII – Perth – accessibility to essential health services
- Perth – Kings Park – 6M+ visitors per annum
- Metrorail – LRT – Perth Underground (CBD) and Esplanade 50-50 split (Perth Waterfront)
Destination Connections

- Kings Park – QEII/UWA – park connections and access to new town
- Perth visitors/residents – improved access to their “local park”
- Perth Waterfront – connections to the waterfront, improving its development potential along the Swan
Public Transport Plan to 2031

• State Government release of Plan for comment
• Indicative route: West Perth via Thomas Street to QEII and UWA
• Development of options to address issues along route
MetroRail Incoming Commuters
Route Exploration 2
Route Exploration 3
Route Exploration 4
Exploratory Evaluation

• No predominant route alignment
• Need to determine the role of LRT - mass transit or commuting between destinations
• Density and redevelopment opportunities
Issues / Alternatives

- UWA (60%) and QEII (30%) represent large majority of AM peak attractions (excluding CBD)
- Moderate growth potential in West Perth and one-sided catchment along Thomas Street
- Existing Bus Service from Esplanade to UWA / QEII provides fast and direct connection along Mount’s Bay Road
- Light Rail connections will not be competitive under existing conditions
- Provide more direct connections and opportunities for non-commuter use (e.g. tourist and recreation)
Route Analysis Options 1 & 2
Route Analysis Option 3
Initial Travel Time Comparisons

Stop Delays
- 40s delay per stop

Average Speed
- Fast Sections – 60kph
- Medium – 35kph
- Slow – 20kph

<table>
<thead>
<tr>
<th>Route</th>
<th>Travel Time (minutes)</th>
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<tr>
<td>West Perth</td>
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<tr>
<td>Subiaco / West Perth</td>
<td>30.5</td>
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<tr>
<td>Waterfront / Shenton Park</td>
<td>24.9*</td>
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<tr>
<td>King’s Park / St. George’s Terrace</td>
<td>23.9</td>
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* Serves UWA first
Route Analysis - Speed Comparisons
Patronage Forecasts

- Majority of trips between City Centre and UWA / QEII
- West Perth and Subiaco routes provide potential patronage
- Waterfront and King’s Park routes provide Esplanade connection
- Tidal peak demand on King’s Park and Waterfront options
- West Perth and Subiaco provide 2-way patronage during peak hours
## Initial Evaluation of Route Options

<table>
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<tr>
<th>Route</th>
<th>Travel Times</th>
<th>Trips</th>
<th>Development Opportunities</th>
<th>Legibility and Connectivity</th>
<th>Impact on other Transport</th>
<th>Total</th>
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<tr>
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<tr>
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<td>King’s Park / St. George’s Terrace</td>
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<td>+2</td>
<td>0</td>
<td>+3</td>
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Route Evaluation

- Subiaco Alignment does not stack up
- Waterfront Alignment is constrained by road widths (and risk of sea level rise)
- Three remaining alignments have similar travel times
- QEII to UWA route is indirect with many right-angle turns, resulting in long travel times
Revised Travel Time Comparisons

Differences

• Winthrop Avenue used for fast connection between QEII and UWA
• Waterfront route provides express service – UWA stop on Mount’s Bay Road

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<tr>
<td>Waterfront / Shenton Park</td>
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## Revised Evaluation of Route Options

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On the basis of this evaluation, Esplanade to Shenton Park Route is discounted.
Expected Demand – Thomas Street

LEGEND

 Likely user demand within 400m walkable catchment
Expected Demand – Kings Park
West End Town – Descriptors

- Urban village – built on UWA land
  - Public interface with UWA
  - Student living
  - Retail, food and beverage, entertainment
  - Research
- Capacity to redevelop / enhance Clarke Street
- 3, 4, 6 storeys from Fairway to UWA
- Broadway – consolidated ‘edge’ of Village
QEII Station
QEII Plaza
UWA Village
UWA Village

North East - 1,695 units

North West – 240 units

Fairway – 1,806 units
UWA Village
University Village
Mounts Bay Road – Kings Park
Cross-section
Indicative Engineering Cross-Sections
Actions, Strategies, Priorities

• Ensure capacity of Perth / Esplanade transport hub
• Prepare community engagement strategy to demonstrate public benefits of Kings Park / St Georges Terrace route to gain public support
• Construct LRT via Route A or B to QEII and UWA
• Reduce parking station at QEII if possible ... Collect $90 million
Actions, Strategies, Priorities

- Negotiate funding repayments for bus replacement
- Create Integrated Village / University Masterplan
  - Integrate university functions with wider community
  - Develop new transit village on Mounts Bay Road / Broadway
  - Apply strong place-making principles
Funding

• $180M for 4,500 cars
  – 10% reduction saves $18M
  – 20% reduction saves $32M
• Bus can save $3M on reduction of current routes
  – approx $5-7M on future routes
• Development yield
  – Residential units – 7,000 units (5,000 uni)
  – Retail – 5,000m²
  – Commercial – 5,000m²
  – University – 10,000m²
Costs and Benefits

COSTS

- Infrastructure
- Thomas Street (City bypass loss of capacity)
- Reduction of “wilderness” value of Kings Park
Costs and Benefits (ctd)

BENEFITS

• Coherent connection with capacity between University Village and City Centre
• Connection Kings Park and City (A)
• Clarifies structure of University Village
• Significant increase in residential accommodation
• Better address/access to iconic park
• Identifiable ‘place’
• Potential LRT / Ferry integration
• Connects Princess Margaret Hospital site (B)
• Improves access to workers in Wellington Street (B)
• Integrates with Esplanade Station (A)