

PERTH LIGHT RAIL MASTERCLASS

23-25 September 2011

A unique opportunity for mid-career professional planners, designers and related practitioners to achieve a speedy and intensive 'step change' in designing and delivering transit-oriented and infill development.

Sponsors



OVERVIEW

The Australian Council for New Urbanism and the Planning Institute of Australia WA Division will host a three day Transit-oriented Development (TOD) Masterclass for industry professionals in Perth.

The new Public Transport Plan for Perth in 2031 introduces Light Rail Transit (LRT) as a new rapid transit system. The Masterclass will analyse and advance the urban design of three elements, an LRT spine proposed through Perth's Northern Suburbs and proposed links to the city to Curtin University and the University of Western Australia.

The Masterclass will be led by internationally acclaimed urban designers and facilitators, Stef Polyzoides and Wendy Morris. Professor Peter Newman from Infrastructure Australia and co-author of The Knowledge Arc Light Rail will give the Masterclass the benefit of his international knowledge of LRT and how to position LRT as an Infrastructure Australia project for Perth.

Highly experienced urban designers from around Australia will facilitate professionals in cross-disciplinary teams to produce indicative designs to inform this very live and timely project for Perth's urban future. They will be joined by transport experts Jim Higgs and Chris Stapleton.

A key success factor for *some* built TOD projects is their architecture, whose character emulates their local Sense of Place. Stefanos Polyzoides is a strong critic of anonymous modernist architecture that is often a major cause of community opposition, often despite the other benefits of urban projects.

Therefore, this Masterclass will have another focus on TOD architecture that is 'of its place'. Stef Polyzoides has, perhaps more than any other practicing New Urbanist worldwide, succeeded in designing highly successful TODs that are 'of their place'. See www.mparchitects.com for further information on Stef's work across the world.

PERTH LRT BACKGROUND

PLANNING

Perth's metropolitan plan is called Directions 2031. The plan has identified three integrated networks that form the basis of the spatial framework:

1. Activity centres network: A network and hierarchy of centres that provide a more equitable distribution of jobs and amenity throughout the city
2. Movement network: An integrated system of public and private transport networks that are designed to support and reinforce the activity centres network
3. Green network: A network of parks, reserves and conservation areas that support biodiversity, preserve natural amenity and protect valuable natural resources.

By 2031 the region will have a population of at least 2.2 million people. This represents over half a million new residents to be housed in 328,000 new dwellings and needing 353,000 new jobs. Directions 2031 has set a target of 47 per cent or 154,000 of the required 328,000 dwellings as infill development.

TRANSPORT

The new Public Transport Plan for Perth in 2031 introduces Light Rail Transit (LRT) as a new rapid transit system. The Masterclass will analyse and advance the urban design of three elements, an LRT spine proposed through Perth's Northern Suburbs and proposed links to the city to Curtin University and the University of Western Australia. (see <http://www.transport.wa.gov.au/23281.asp>)

THE CASE FOR LRT

Peter Newman and Jan Scheurer of Curtin University Sustainability Policy (CUSP) Institute prepared a Knowledge Arc Light Rail Transit proposal that sets out a substantial rationale for LRT (see http://sustainability.curtin.edu.au/research_publications/publications.cfm).

They argue that Perth has done well in its public transport development since electrification and extensions of the heavy rail to each major corridor. Public transport is now faster than traffic down each major corridor. The passenger load on rail has increased from 7 million a year in 1991 to 55 million a year in 2009. It is a global success story that is told around the world and has led to each other Australian city finally moving to expand their rail systems – with Federal Government assistance through Infrastructure Australia.

Newman and Scheurer reason that the Perth metropolitan region is growing fast and its traffic is a problem with an increase in car ownership and the freeways are all full at peak time even with the rail system down the centre carrying the equivalent of 8 lanes of traffic. They see Perth as needing to create another cross-city rail network which can be a new light-rail technology, integrated with land development and involving a private operator that can establish a new kind of public transport system in Perth. The many advantages they see include:

- Light rail - a modern tram can fit into street medians or replace a parking lane and which can carry up to 20 times more people than a lane of traffic.
- It can run fast down sections of track where priority is assigned and can go slow when near pedestrians.
- It can provide the means for funding the infrastructure through value capture associated with planned land developments at stations.
- Light Rail Transit (LRT) is attractive to developers as it gives the boost that is

needed to genuinely get people out of their cars and thus enables much less parking and much more productive and attractive development to be placed on any site.

The Knowledge Arc Light Rail Transit proposal identifies development now planned along the KA route as including:

- The doubling of Curtin University (including six 20 storey towers of residential activity);
- The doubling of Technology Park;
- The large increase in residences on the western side of Victoria Park as well as commercial development along Albany Highway;
- The Riverside Development by LandCorp on the river adjacent to the WACA and Trinity which are also building extensive high rise and medium rise residences and commercial premises;
- The eastern end of Central Perth where most of the new high rise has been happening and more is expected;
- The Northbridge link or Hub is the largest urban regeneration in Central Perth directly above the Central rail station and the new underground bus terminal. If linked by the Knowledge Arc LRT it would create the biggest interchange point in the whole metropolitan public transport system - now easily linking the whole metropolitan area to Curtin and UWA as well as the rest of the KA centres;
- The redevelopment of the PMH site on Thomas Street;
- The largest health complex in Perth with the new PMH and Sir Charles Gardiner Hospitals which are seriously compromised in their growth and functionality by traffic and parking issues; and
- The UWA complex, the State's premier knowledge hub which is set to double in size and has little ability to grow in its parking.

MASTERCLASS RESPONSE

The Masterclass will test the opportunities and constraints offered by the proposed LRT system for transit oriented development opportunities. GB Arrington suggests that successful TOD starts with the earliest decisions on the shape and design of the transit system¹:

- Is the station located in an area with development potential?
- Are transit facilities designed in a compact, pedestrian-friendly manner?
- Does the design of station facilities allow for direct pedestrian connections to adjacent communities?
- Has the park-and-ride area been designed in a manner that does not separate the station from the community it is intended to serve?
- Has TOD been appropriately incorporated into the transit facility design?

The Masterclass will therefore review existing plans for LRT and particularly test the proposed LRT routes before they are fully fixed including operational approach, stops/station spacings, locations and design. Then the different scales of TOD will be explored – regional; 400m, and station/stop precincts so that the design of transit facilities can be made TOD friendly without sacrificing transit performance.

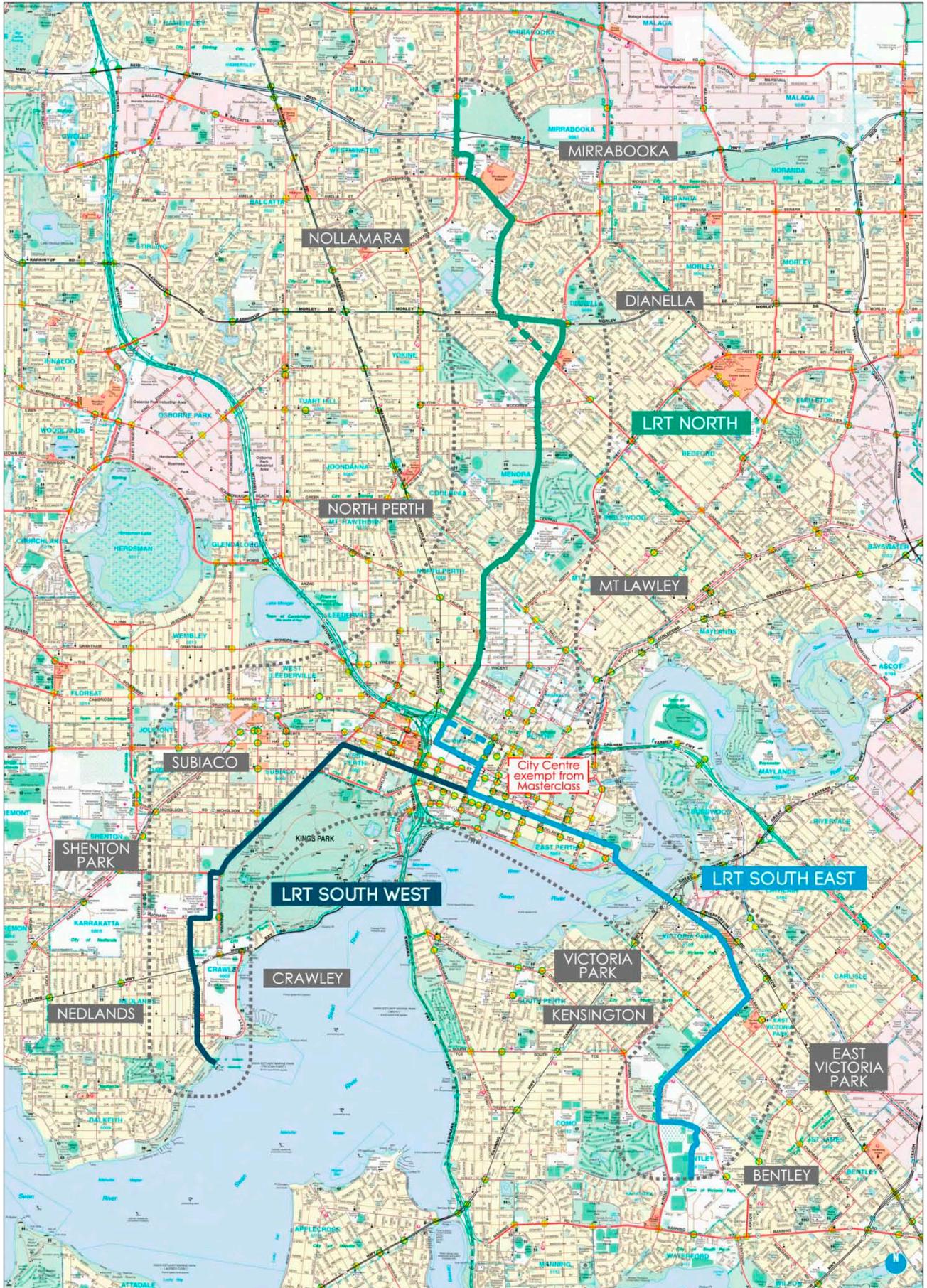
MASTERCLASS OBJECTIVES

The Masterclass will bring together urban planners, transit planners, architects and others into a design process to test proposals for LRT in Perth and develop an urban design response for transit-oriented development opportunities arising from the proposed LRT.

Masterclass Objectives:

1. Critique existing plans for LRT and particularly test the proposed LRT routes before they are fully fixed including operational approach, stops/station spacing's, locations and design.
2. Explore the different scales of TOD – regional; 400m, and station/stop precincts.
3. Test the opportunities and constraints offered by the proposed LRT system for transit oriented development opportunities.
4. Test the design of transit facilities to be TOD friendly without sacrificing transit performance.
5. Consider TOD architecture that contributes to TOD and is 'of its place'.
6. Build on funding and implementation proposals.
7. Document outcomes to contribute new insights into the Government and community discussion on Perth's proposed LRT .

¹ Transportation: Being An Alternative To The Car Is Not Enough: Making Transit More Sustainable. G.B. Arrington, Network Sustainable Development November 2004 • Issue No. 59 • Volume XIX • Number 3



LRT CORRIDORS

MASTERCLASS AND TEAM LEADERS

The Masterclass will be undertaken through three groups with two facilitators for each corridor. The transport engineers will be allocated to assist in nominated corridors but will also be a shared resource.

Architect Chip Kaufman will facilitate an additional Masterclass team which will focus on preliminarily designing 'Architecture of its Place'

for specific TOD sites, which in this case will celebrate the rich context of Perth generally and likely focus on the UWA more specifically.

Planner Evan Jones will advise on TOD development feasibility and recommended implementation approach including urban coding.

Team leader	Team Task
Stef Polyzoides, Wendy Morris	Masterclass Leaders
Professor Peter Newman	Masterclass Guest Expert
Jim Higgs TTM Chris Stapleton	Specialist Input: Route Analyses, Feasibility, Station Design, Implementation
Chip Kaufman	Facilitator + Urban Design
Peter Richards	Facilitator + Urban Design
Clive Alcock	Facilitator + Urban Design
Evan Jones	Implementation
Peter Annand	Facilitator + Urban Design
John Stimson/Chris Hair	Facilitator + Urban Design
Malcolm Mackay	Facilitator + Urban Design
Ben De Marchi	Facilitator + Urban Design
Steve Thorne	Facilitator + Urban Design
Crystal V. Olin	Sketch-up Operator/Architect
Xiaojian	Renderer
Stephen Bowers	Organisation and documentation
Matt Cain	Organisation and documentation

In addition, the following Australian Urban Design Research Centre staff may participate in the class.

Dr Julian Bolleter
 Dr Anthony Duckworth Smith (in part)
 Prof Richard Weller (in part)
 Donna Broun
 Paul Verity

TEAMS

Participants will be allocated in to one of three teams with the following lead designers:

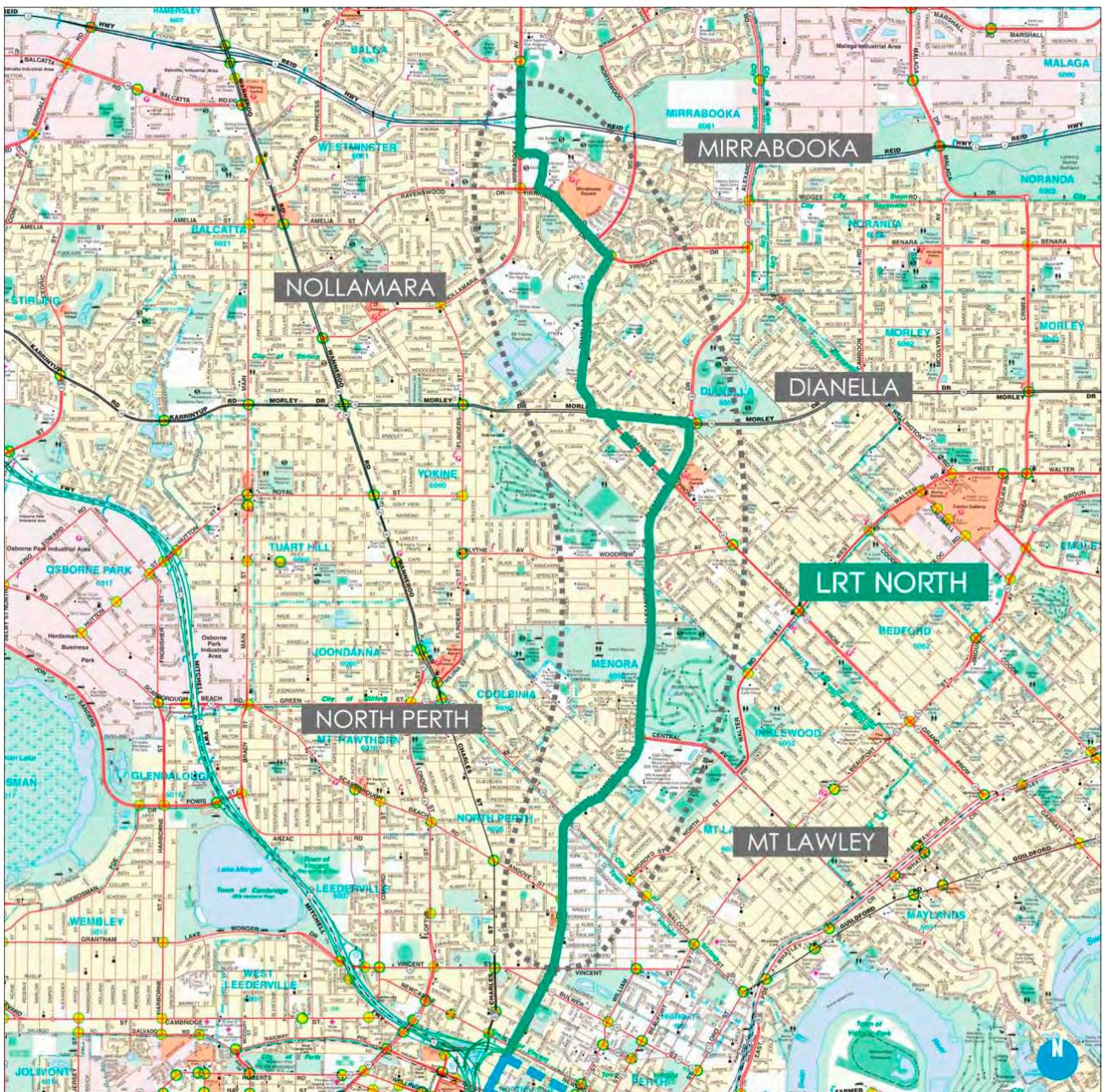
LRT NORTH

Designers: Clive Alcock; Ben DeMarchi (Taylor Burrell Barnett)

Engineer: Jim Higgs (TTM Consulting)

The Department of Transport is preparing detailed plans for the proposed Perth – Mt Lawley ECU – Mirrabooka route.

The Masterclass will explore the proposed route, station locations and opportunities for urban development and redevelopment along the route including the North Perth centre, Dianella Plaza and environs, residential corridor along the LRT and plans for the redevelopment of the Mirrabooka centre.

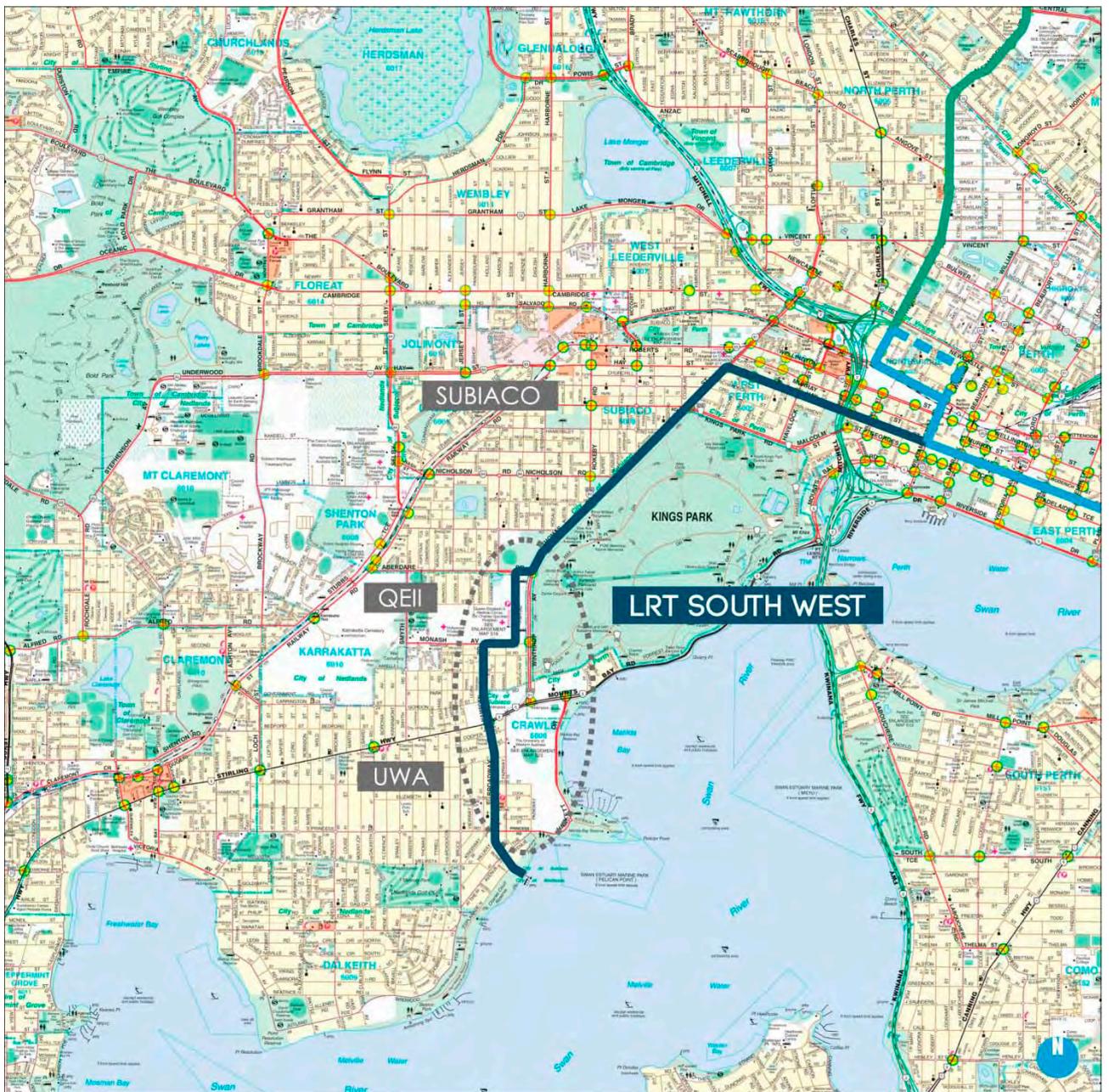


LRT SOUTH WEST

Designers: Stephen Thorne (Design Urban);
Peter Annand (Annand & Assoc Urban Design);
Chris Hair (Department of Planning WA)

Engineer: Chris Stapleton (Chris Stapleton &
Associates) (part time)

This group will explore the western leg of the proposed Knowledge Arc for Perth to UWA and Crawley. A link to Subiaco will be tested together with termination at UWA rather than Crawley foreshore. Opportunities for urbanism along the route will be evaluated and tested in detail.

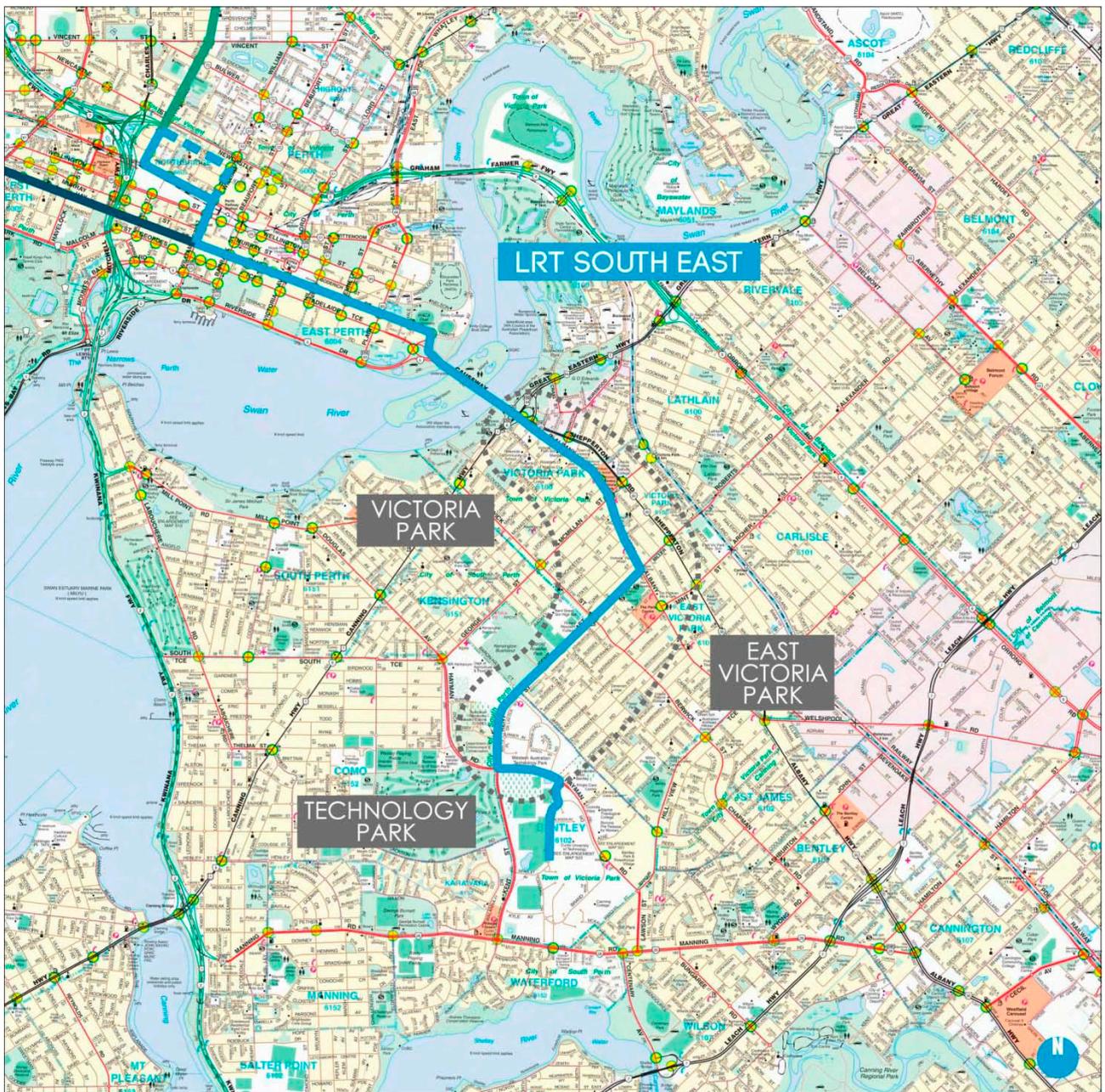


LRT SOUTH EAST

Designers: Peter Richards (Deike Richards), Malcolm Mackay (Mackay Urban Design), John Stimson (Fairmont Group)

Engineer: Chris Stapleton (Chris Stapleton & Associates) (part time)

This group will explore the eastern leg of the proposed Knowledge Arc for Perth to Curtin University, testing Albany Highway vs Shepparton Road in terms of LRT operations and opportunities for new development.



DRAFT MASTERCLASS PROGRAM

DAY 1: FRIDAY, 23 SEPTEMBER

Time	Who	Event
8:00 am		Coffee/breakfast snacks at venue, registration
8:30 am	Wendy Morris	Commencement, introductions, how the Masterclass will work
9:00 am	Evan Jones, DoT Peter Newman Ben De Marchi Chris Stapleton/Jim Higgs	Project Briefing (TOD content) KALRT and Funding Briefing Booklet Operational Principles and Choices for LRT
10:30 am		Coffee break
10:45 am	All	Separate bus tours of the 3 corridors and potential TOD sites
1:00 pm		Lunch back at venue
1:30 pm	Stef Polyzoides	TOD principles, Pasadena TOD case studies and designing architecture for place
2:30 pm		Coffee break
2:45 pm	Wendy Morris, Jim Higgs	Aerials and Existing Conditions Drawings, materials, teams, scenarios, route evaluation criteria and process for next two days
3:15 pm	All	Team Design Session One
6:00 pm	Wendy Morris/Stef Polyzoides	First Design Presentations with Review/Critique of all team analysis/schemes
7:00 pm		End for night

DAY 2: SATURDAY, 24 SEPTEMBER

Time	Who	Event
8:00 am		Coffee/breakfast snacks at venue
8:30 am	Wendy Morris/Stef Polyzoides	Team Design Session Two
8:40 am	Peter Richards	Graphic presentation techniques
9:00-11:00 am		Coffee and pin-up, prepare presentations
11:15 am	Wendy Morris/Stef Polyzoides	Design Presentations with Review/Critique of all team schemes
12:30 pm		Lunch at venue
1:00 pm	Wendy Morris/Stef Polyzoides	Scenarios revision,
1:30 pm	All	Team Design Session Three
4:30 pm	Wendy/Stef	Pin-up and then Second Design Presentations with Review/Critique of all team schemes
7:30 pm +		End for night

DAY 3: SUNDAY, 25 SEPTEMBER

Time	Who	Event
8:00 am		Coffee/breaky snacks at venue
8:30 am	All	Team Design Session Four
11:15 am	Wendy Morris/Stef Polyzoides	Pin-up and then Third Design Presentations with Review/Critique of all team schemes
12:30 pm		Lunch at venue
1:15 pm	Wendy Morris/Stef Polyzoides	Briefing for final sprint
1.30 pm	All	Team Design Session Five
4:30 pm	Wendy Morris/Stef Polyzoides	Pin-up and then Final Design Presentations with Review/Critique of all team schemes
6:30 pm		Celebration at venue. Concluding remarks by Peter Newman, Evan, Stef and Wendy
7:15 pm		End Masterclass

MASTERCLASS OUTCOMES AND OUTPUTS

1. Analyses of Route Feasibility of Northern Line and KLART from standpoints of LRT operations (station location, potential passengers, carrying capacity, headway etc); infrastructure cost; existing reserve widths; current uses and regulatory contexts, what's needed to optimise implementation.
2. Development Feasibility/Key Success Factors of the selected TOD catchment.
3. Indicative Designs for various scenarios for selected TOD catchment, ranging in scales from 1:5000 to 1:500.
4. Indicative exterior Architectural Designs for key TOD buildings within the selected 'transect', which emulate the local Sense of Place.

SELECTED LRT URBAN DEVELOPMENT OPPORTUNITIES

LRT NORTH

MIRRABOOKA



MIRRABOOKA – CONTEXT



MIRRABOOKA – DETAIL



MIRRABOOKA – VIEW NORTH

SELECTED LRT URBAN DEVELOPMENT OPPORTUNITIES

LRT NORTH

DIANELLA



DIANELLA – CONTEXT



DIANELLA – DETAIL

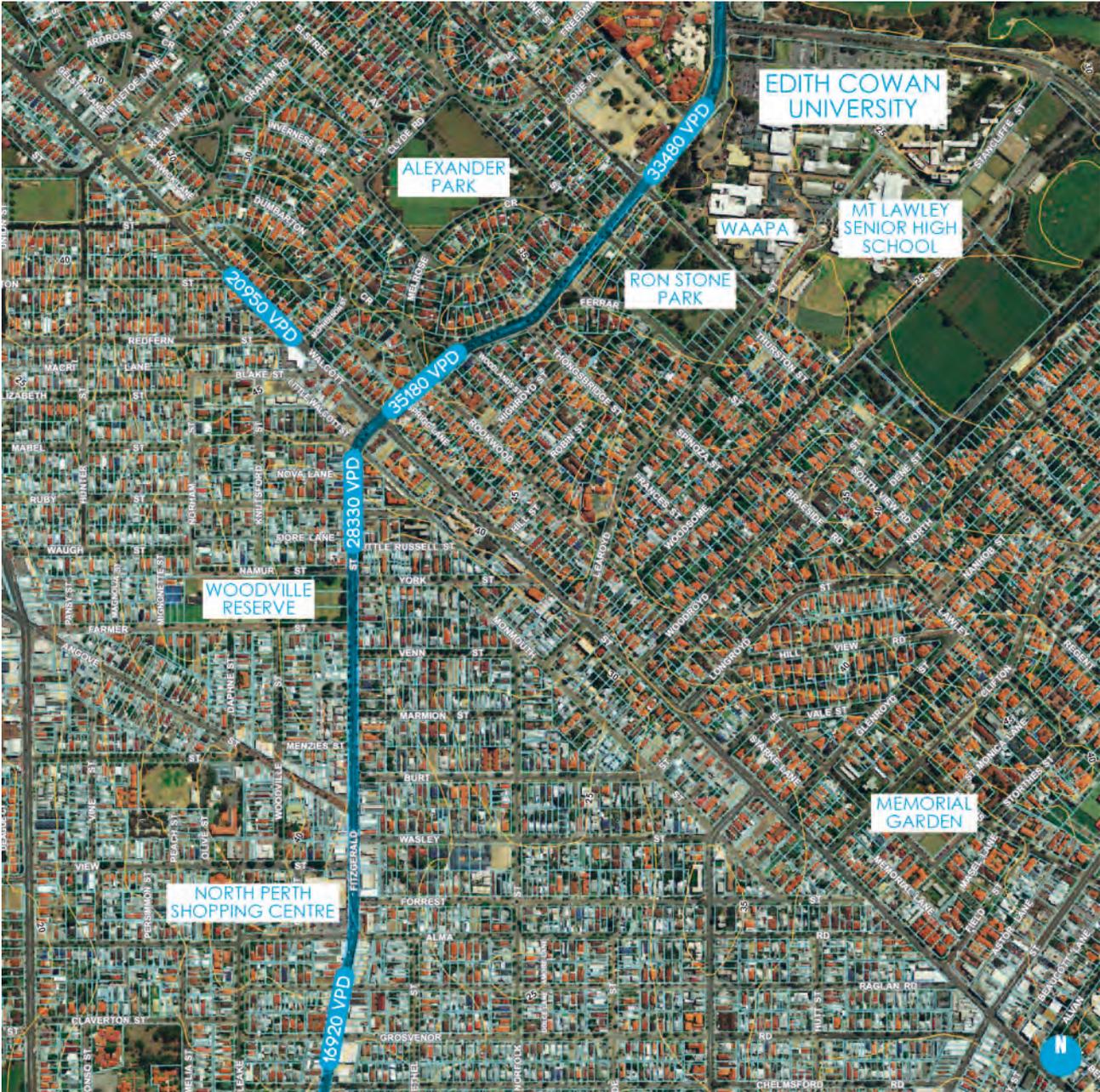


DIANELLA – VIEW NORTH

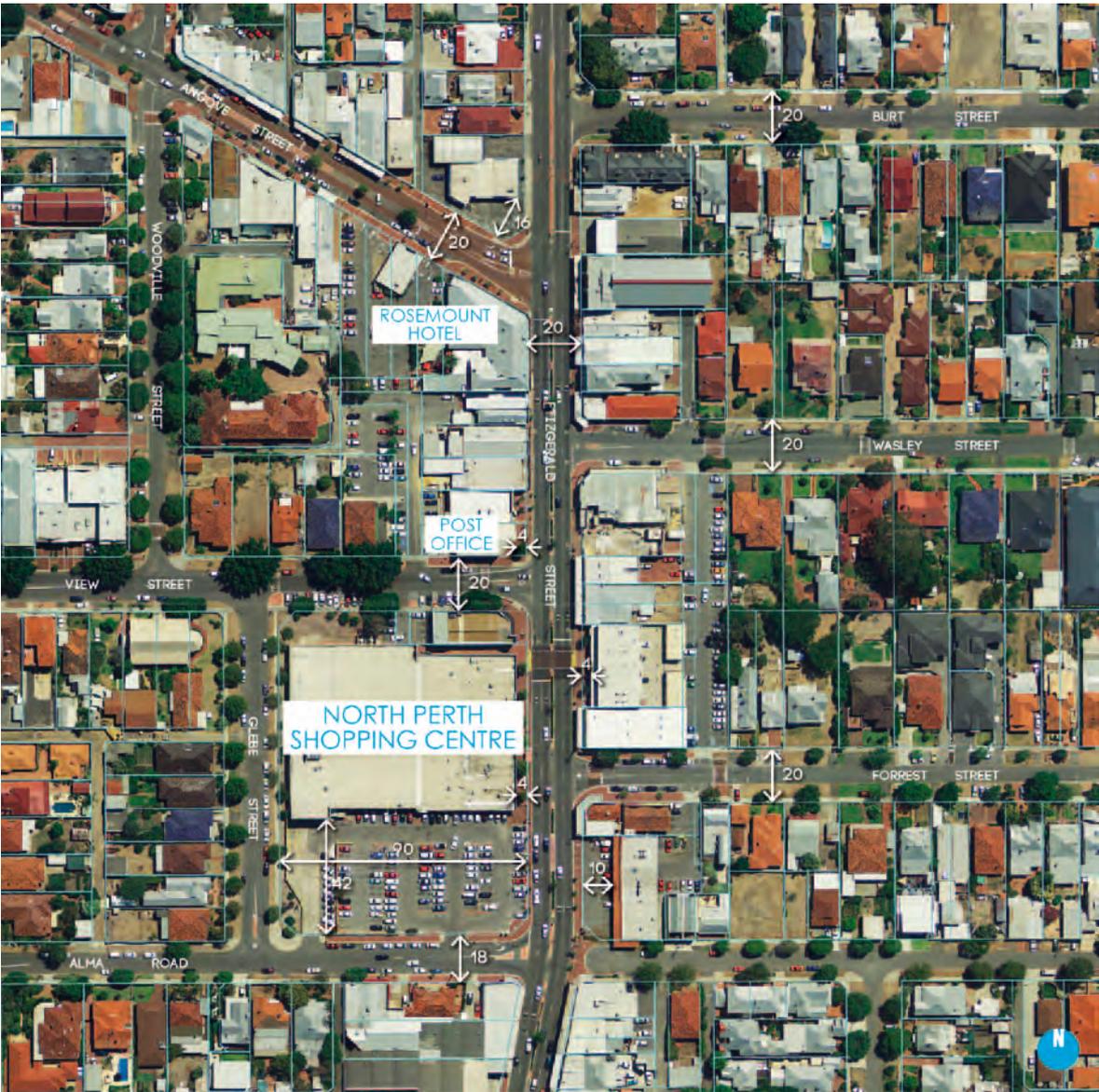
SELECTED LRT URBAN DEVELOPMENT OPPORTUNITIES

LRT NORTH

NORTH PERTH



NORTH PERTH – CONTEXT



NORTH PERTH – DETAIL



NORTH PERTH – VIEW SOUTH

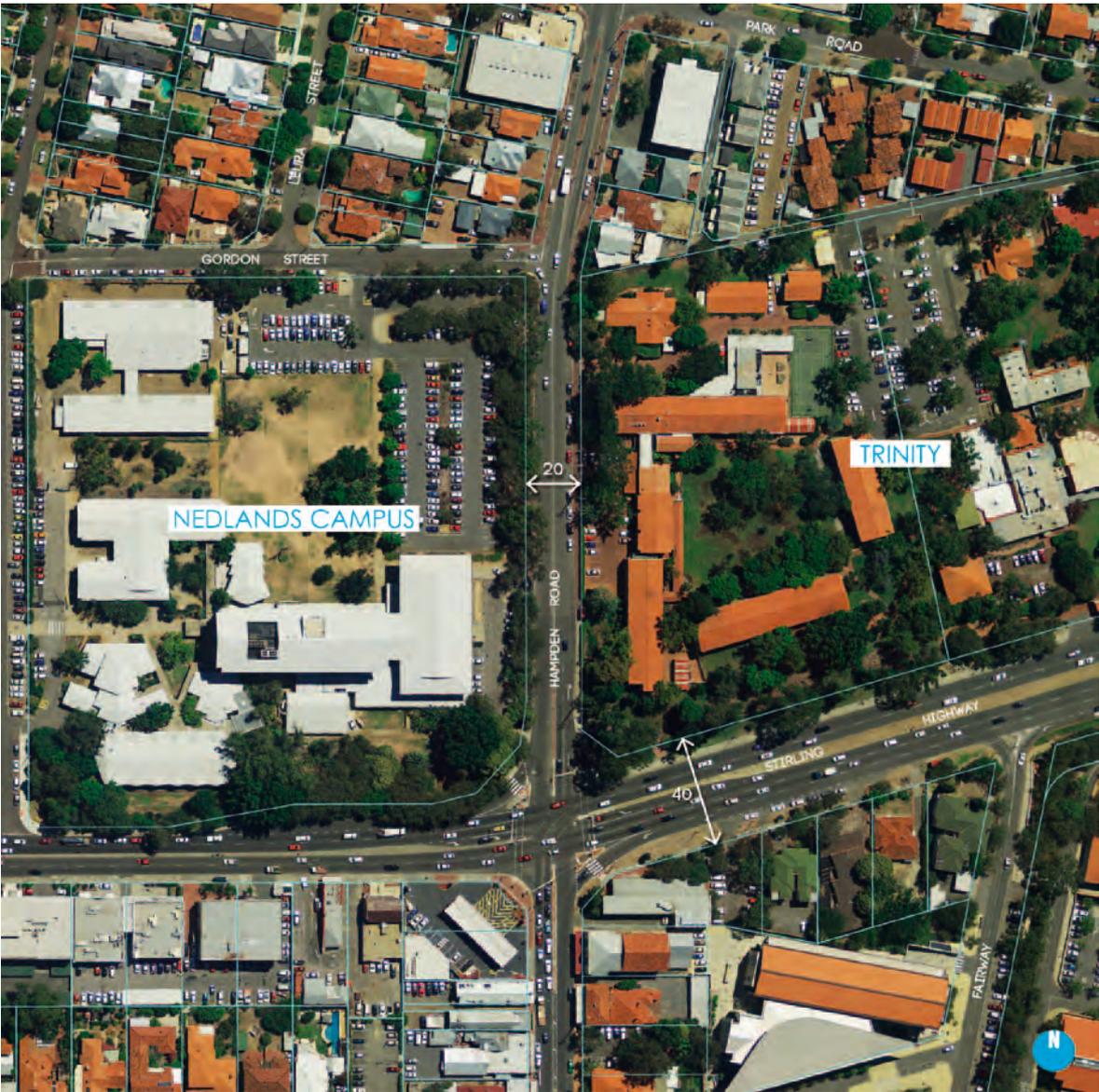
SELECTED LRT URBAN DEVELOPMENT OPPORTUNITIES

LRT SOUTH WEST

UWA



UWA – CONTEXT



UWA – DETAIL

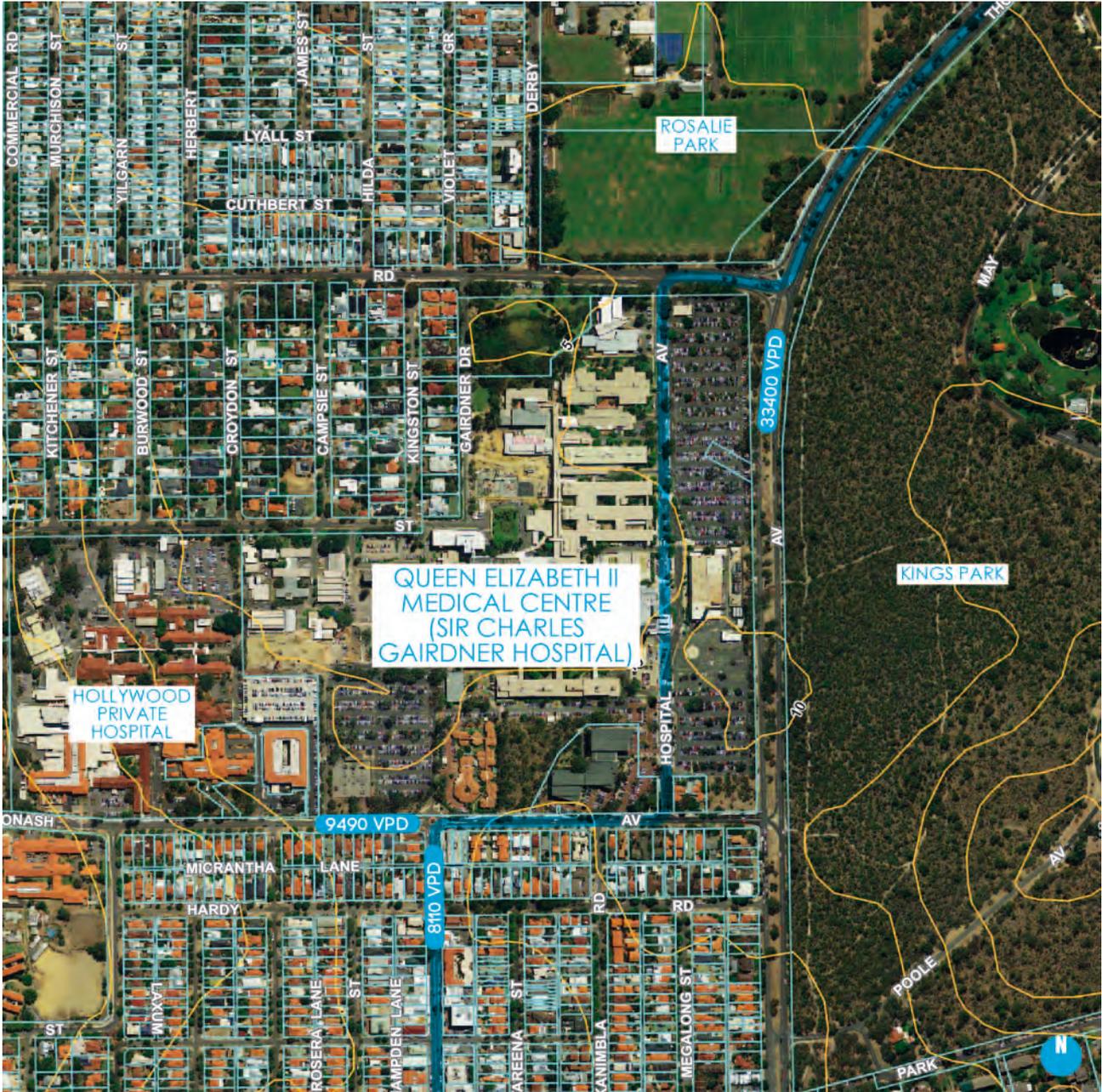


UWA – VIEW NORTH

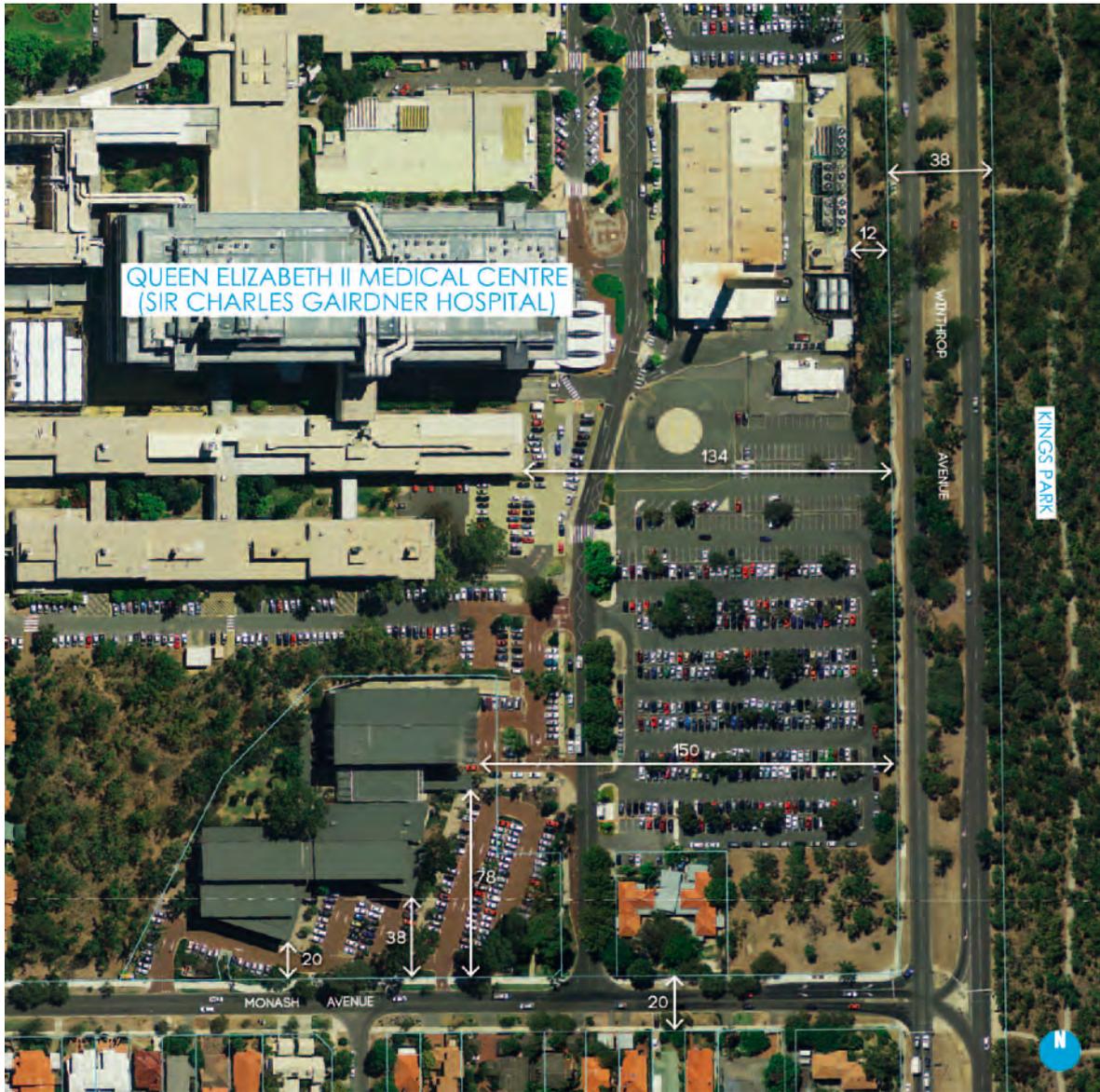
SELECTED LRT URBAN DEVELOPMENT OPPORTUNITIES

LRT SOUTH WEST

QUEEN ELIZABETH II MEDICAL CENTRE



QEII – CONTEXT



QEII – DETAIL

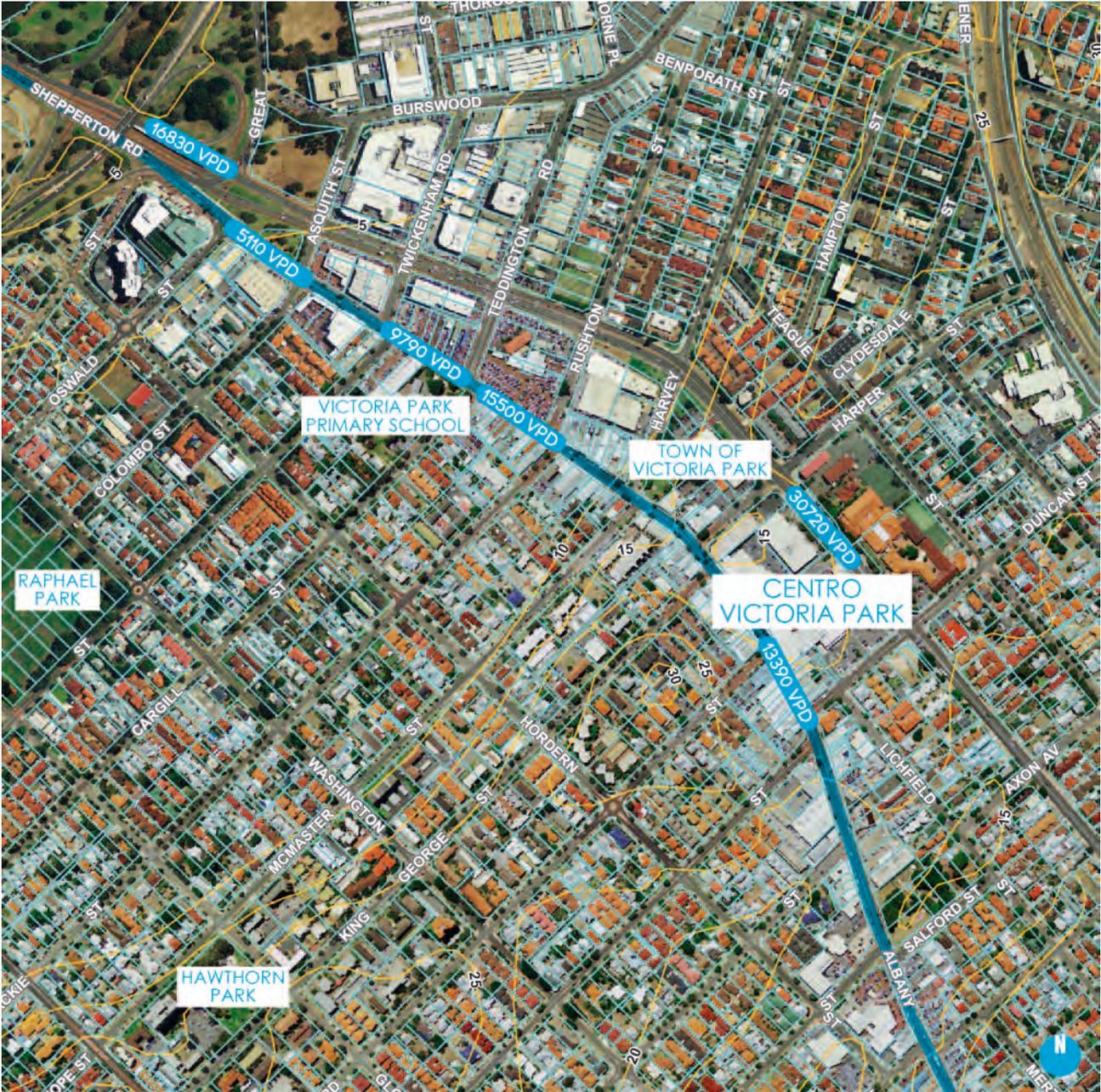


QEII – VIEW NORTH

SELECTED LRT URBAN DEVELOPMENT OPPORTUNITIES

LRT SOUTH EAST

VICTORIA PARK (WEST)



VICTORIA PARK (WEST) – CONTEXT



VICTORIA PARK (WEST) – DETAIL

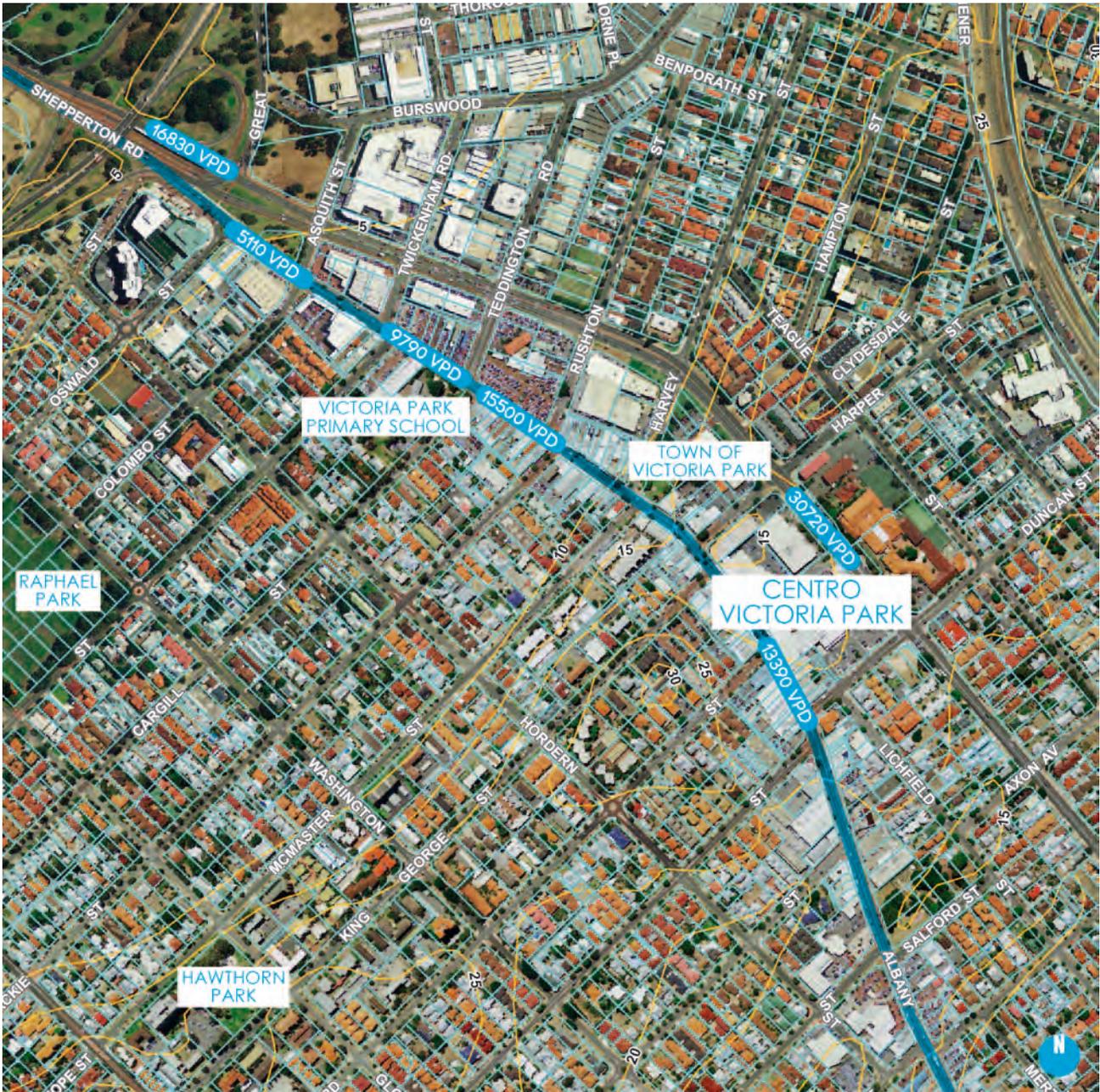


VICTORIA PARK (WEST) – VIEW EAST

SELECTED LRT URBAN DEVELOPMENT OPPORTUNITIES

LRT SOUTH EAST

VICTORIA PARK (CENTRAL)



VICTORIA PARK (CENTRAL) – CONTEXT



VICTORIA PARK (CENTRAL) – DETAIL

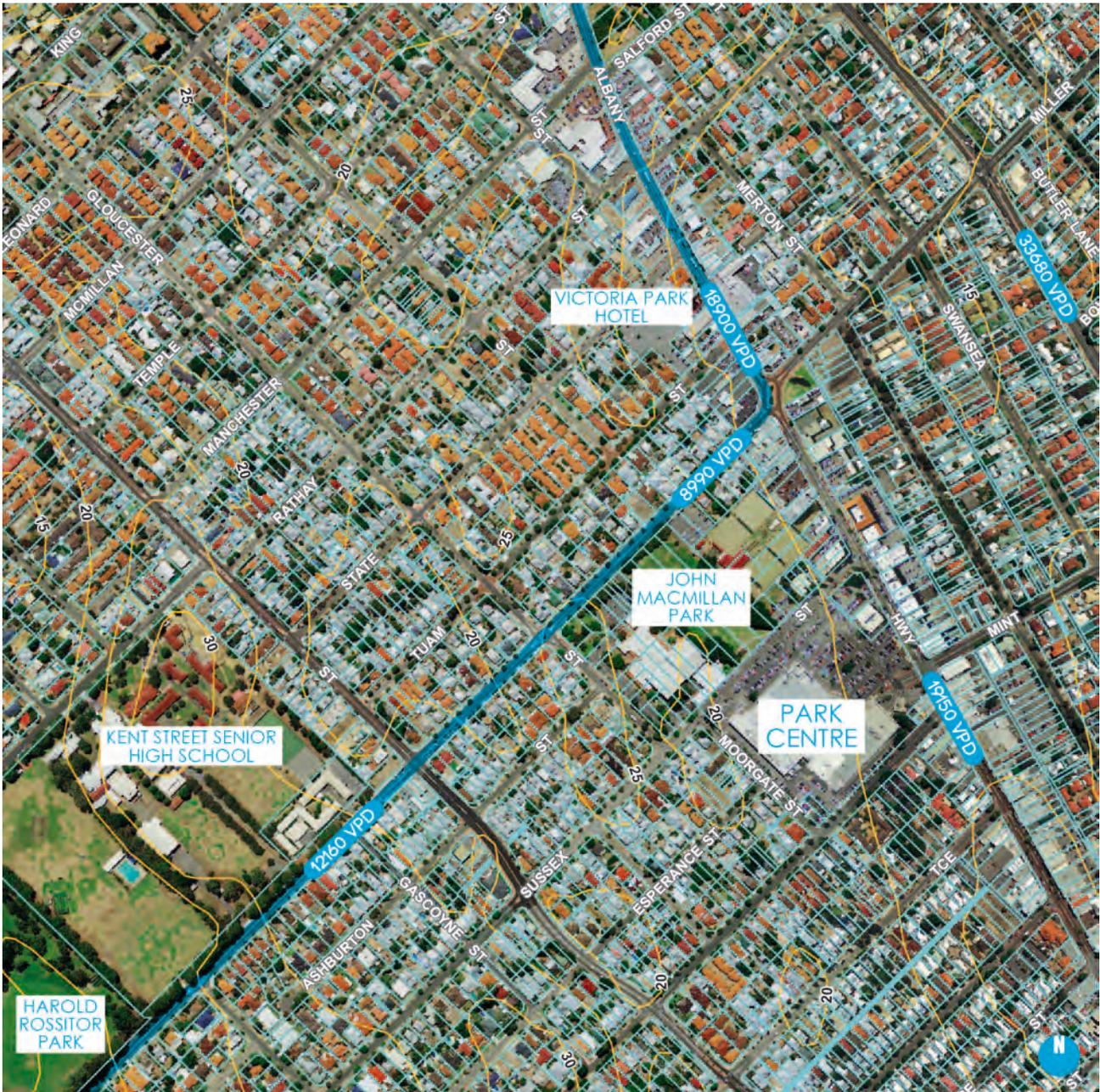


VICTORIA PARK (CENTRAL) – VIEW EAST

SELECTED LRT URBAN DEVELOPMENT OPPORTUNITIES

LRT SOUTH EAST

EAST VICTORIA PARK



EAST VICTORIA PARK – CONTEXT



EAST VICTORIA PARK – DETAIL

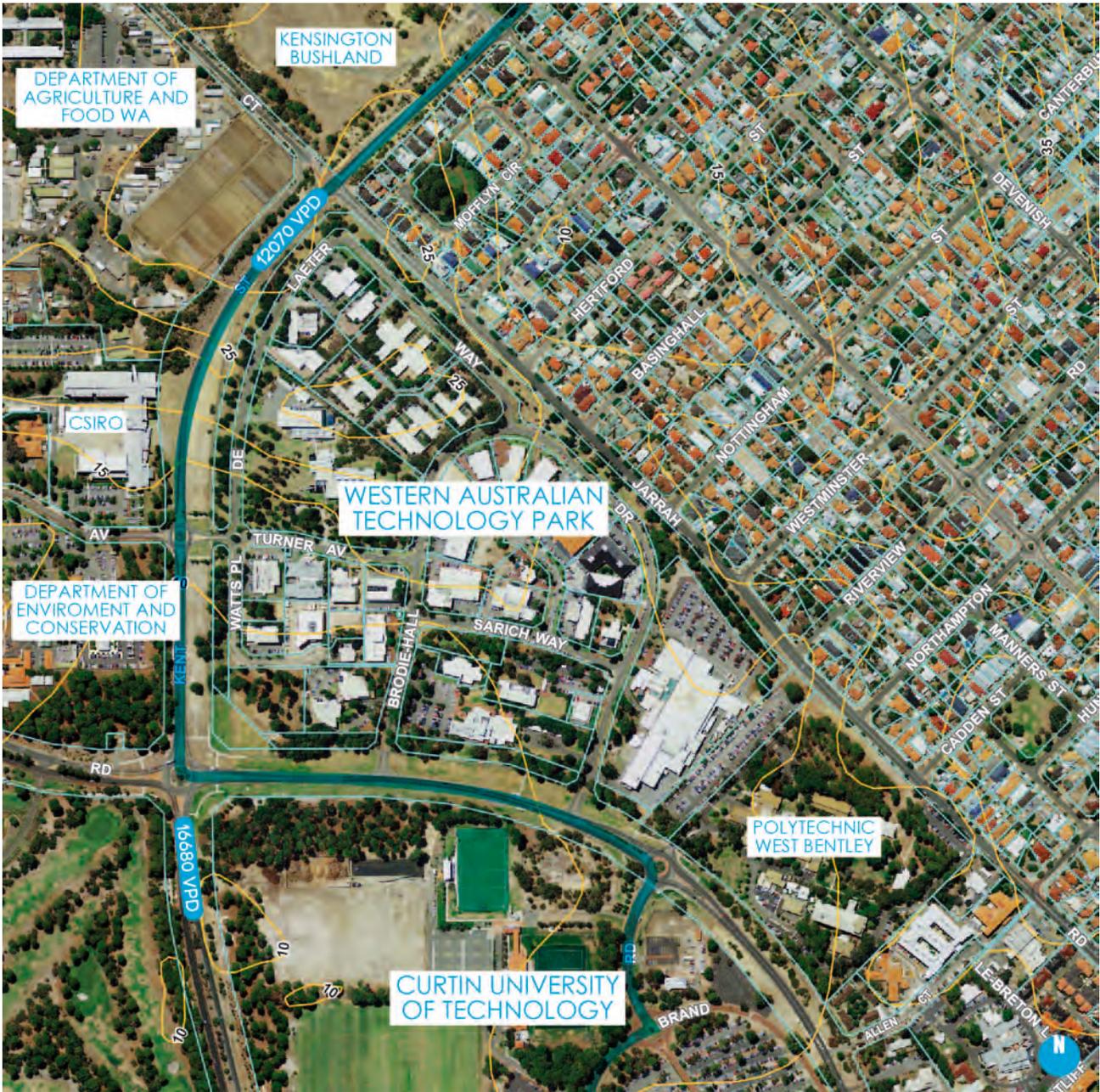


EAST VICTORIA PARK – VIEW NORTH

SELECTED LRT URBAN DEVELOPMENT OPPORTUNITIES

LRT SOUTH EAST

TECHNOLOGY PARK PRECINCT



TECHNOLOGY PARK PRECINCT) – CONTEXT



TECHNOLOGY PARK PRECINCT – DETAIL



TECHNOLOGY PARK PRECINCT – VIEW NORTH