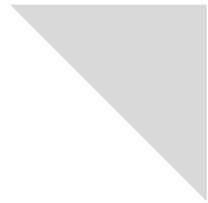




**ROWE**  
GROUP  
DESIGN

# LOCAL STRUCTURE PLAN

PRECINCT 2A – PICTON INDUSTRIAL PARK  
SOUTHERN PRECINCT



# APPENDIX 6

TRANSPORT IMPACT ASSESSMENT



**ROWE**  
GROUP  
DESIGN

# Lots 103, 110 and 603 Harris Road and Martin Pelusey Road, Picton East

TRANSPORT ASSESSMENT REPORT FOR  
PROPOSED LOCAL STRUCTURE PLAN

Prepared for  
HARRIS ROAD PTY LTD

Prepared by  
Uloth and Associates  
15 November 2019

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## **1. INTRODUCTION**

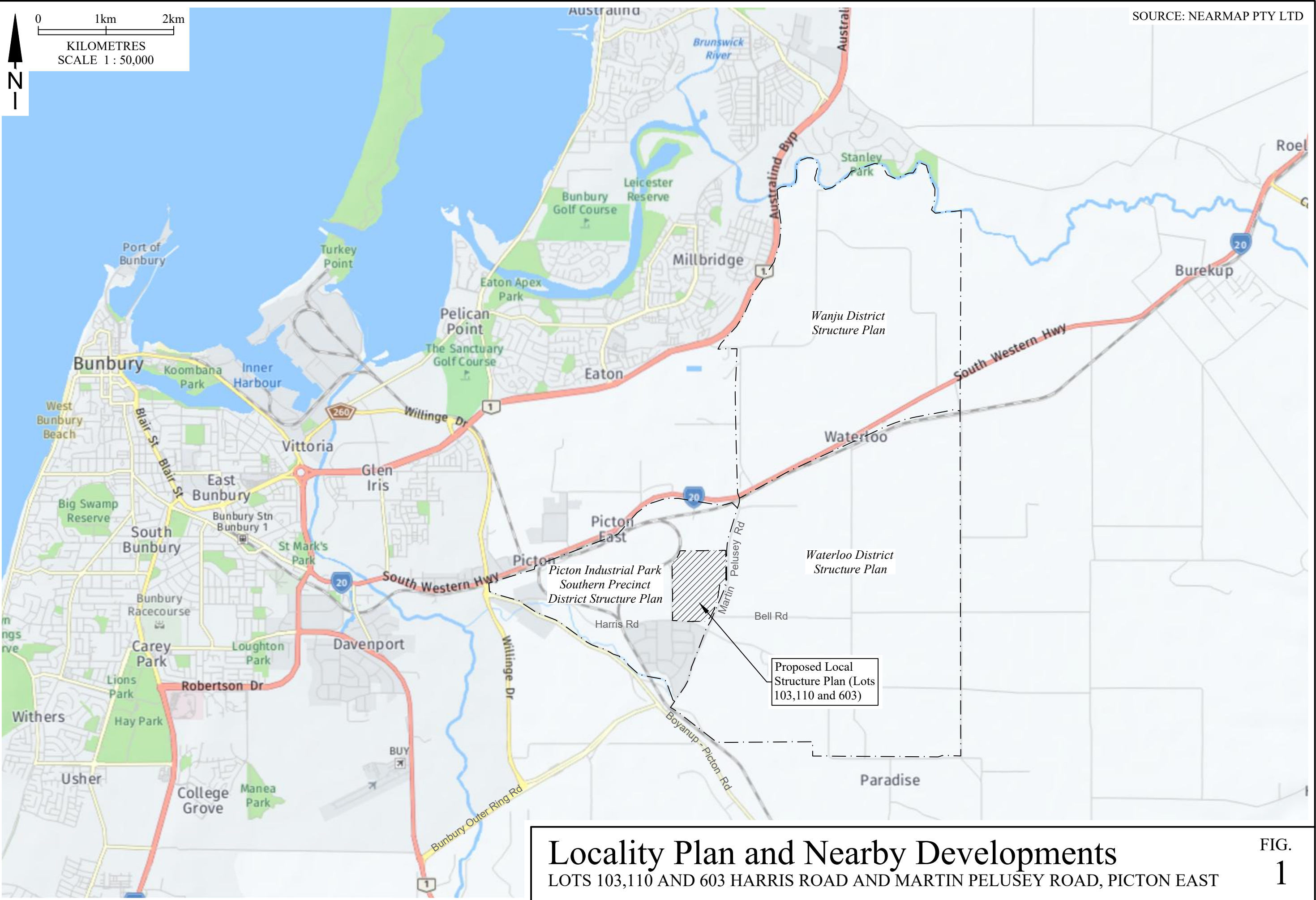
Rowe Group is preparing a Local Structure Plan for Lots 103, 110 and 603 Harris Road and Martin Pelusey Road, on behalf of Harris Road Pty Ltd.

The subject site is located to the west of Martin Pelusey Road and north of Harris Road, as shown in the Locality Plan in Figure 1. It is also located within the Picton Industrial Park Southern Precinct District Structure Plan, adjacent to the Waterloo District Structure Plan, and to the south-west of the Wanju District Structure Plan, as also indicated in Figure 1.

### **1.1 STUDY OBJECTIVES**

Uloth and Associates has been commissioned to prepare this Transport Impact Assessment Report in support of the proposed Local Structure Plan.

The overall study objective is to identify the existing situation and current structure planning within the vicinity of the subject site, and to then document the traffic impacts and implications for the proposed Local Structure Plan.



# Locality Plan and Nearby Developments

LOTS 103,110 AND 603 HARRIS ROAD AND MARTIN PELUSEY ROAD, PICTON EAST

FIG. 1

## 2. OVERALL STUDY FINDINGS AND CONCLUSIONS

The overall study findings and conclusions regarding the proposed Local Structure Plan are presented and discussed in this chapter, with reference to background information and additional analysis documented in the Technical Appendix.

### 2.1 EXISTING SITUATION

- The existing situation in the vicinity of the proposed Local Structure Plan is shown in an aerial photograph in Figure A.1 in Chapter A.1 in the Technical Appendix. It can be seen in Figure A.1 that the subject site is bounded by Martin Pelusey Road to the east, Harris Road to the south and Columbas Drive to the west, with vacant land to the north up to the Bunbury-Perth railway line and South Western Highway.
- The existing Main Roads WA functional road hierarchy is shown in Figure A.2 in the Technical Appendix. The plan shows that Forrest Highway, South Western Highway, Boyanup-Picton Road, Willinge Drive and Bunbury Outer Ring Road are all Primary Distributor Roads in the vicinity of the proposed Local Structure Plan, while Martin Pelusey Road and Hynes Road are Regional Distributor Roads. Harris Road is classified as a Local Distributor Road, while the remaining neighbouring roads, including Columbas Drive, Kerr Road and Golding Crescent, are all classified as Access Roads.
- It is also important to note that the Main Roads WA Restricted Access Vehicle Network indicates that Forrest Highway, South Western Highway, Willinge Drive and Bunbury Outer Ring Road between Willinge Drive and Moore Road are all part of the RAV 7 network, which allows for vehicles up to 36.5 metres in length, while Boyanup-Picton Road, Martin Pelusey Road and Harris Road form part of the RAV 4 network, allowing vehicles up to 27.5 metres in length.
- Road information mapping from Main Roads WA also shows that both Harris Road and Martin Pelusey Road have posted speed limits of 80 kilometres per hour, while Columbas Drive, Kerr Road and Golding Crescent have no posted speed limits (meaning that the 50 kilometre per hour 'Built-up Area' rule applies).
- Figure A.3 in the Technical Appendix then shows the existing weekday daily traffic flows in the vicinity of the proposed Local Structure Plan, as obtained from the Main Roads WA website. It can be seen in Figure A.3 that Forrest Highway carries 24,600 vehicles per day east of Old Coast Road, while South Western Highway and Boyanup Picton Road carry 7,700 and 4,800 vehicles per day, respectively, west of Willinge Drive. It can also be seen that Hynes Road carries 4,600 vehicles per day, Martin Pelusey Road carries 3,100 vehicles per day and Harris Road carries just 1,500 vehicle per day.

### 2.2 REGIONAL ROAD NETWORK PLANNING

- Figure A.4 in the Technical Appendix shows the current Greater Bunbury Region Scheme Map in the vicinity of the proposed Local Structure Plan, including the subject site which is located within an 'Industrial Deferred' zone. However, it can also be seen that the Scheme Map currently still shows the now superseded initial alignment of the Bunbury Outer Ring Road adjacent to the site (along Martin Pelusey Road and Hynes Road). The Scheme also identifies the proposed future realignments of Willinge Drive and South Western Highway, to accommodate future grade-separation of Willinge Drive across Boyanup-Picton Road, Harris Road, the railway lines, and South Western Highway.
- Figure A.5 shows the now proposed realignment of the Bunbury Outer Ring Road between Boyanup-Picton Road and Forrest Highway north of Raymond Road, with interchanges at Willinge Drive, Wireless Road, South Western Highway and Raymond Road, while Figure A.6 shows a composite plan reflecting the resulting overall 'currently planned' regional road network.

- Figure A.7 then shows the currently planned access strategy for the realigned Bunbury Outer Ring Road, including District Distributor Road connections with Wireless Road, Martin Pelusey Road and Boyanup Picton Road, which directly impact the adjacent District Structure Plans.
- It can be seen in Figure A.7 that there is no planned connection to the Bunbury Outer Ring Road at Martin Pelusey Road or Boyanup Picton Road. However, there will be a connection from Martin Pelusey Road to Boyanup Picton Road. A new east-west link road is also proposed from Martin Pelusey Road to Wireless Road, in order to provide access to and from the Bunbury Outer Ring Road, including a proposed roundabout at Martin Pelusey Road.

### 2.3 DISTRICT STRUCTURE PLANS

- The latest District Structure Plan for the Picton Industrial Park Southern Precinct is shown in Figure A.8 in the Technical Appendix, as updated in 2018 in response to the proposed realignment of the Bunbury Outer Ring Road. The plan also identifies the location of Lots 103, 110 and 603, just west of Martin Pelusey Road, with an overall zoning of ‘General Industry’.
- It can be seen in Figure A.8 that the District Structure Plan identifies Martin Pelusey Road as an ‘Integrator’ road, while South Western Highway, Bunbury Outer Ring Road and Boyanup-Picton Road are all shown as ‘Primary’ roads. It can also be seen that Harris Road, Golding Crescent and Columbas Drive are all classified as ‘Local Distributor’ roads, together with the new indicative internal roads providing additional connections to both Harris Road and Martin Pelusey Road.
- It is important to note, however, that the District Structure Plan report also suggests that Harris Road, Columbas Drive and the ‘Internal Distributor’ roads should be identified as ‘Integrator B’ roads (with road reserve widths of 30 metres).
- It is also important to note that the Waterloo Industrial Park District Structure Plan also makes reference to the road hierarchy requirements for Harris Road, suggesting that the eastern portion (between the railway crossing and Martin Pelusey Road) should be identified as an ‘Integrator A’ road rather than an ‘Integrator B’ road. This is presumably as a result of additional traffic demand to/from Waterloo Industrial Park via Harris Road, which is likely to occur as a result of there being no planned connection from Martin Pelusey Road onto South Western Highway in the long term.
- An overall composite plan of the 3 adjoining District Structure Plans (for Picton Industrial Park Southern Precinct, Waterloo Industrial Park and Wanju) is therefore shown in Figure A.9 in the Technical Appendix, while Figure A.10 shows the resulting overall planning in the vicinity of the proposed Local Structure Plan.

### 2.4 PROPOSED LOCAL STRUCTURE PLAN

- The proposed Local Structure Plan for Lots 103, 110 and 603 Harris Road and Martin Pelusey Road, is shown in Figure A.11 in Chapter A.6 in the Technical Appendix.
- It can be seen in Figure A.11 that the Structure Plan proposes an east-west local distributor road in the northern part of the overall site, linking from Martin Pelusey Road to Columbas Drive, together with 2 additional roads linking to Martin Pelusey Road and Harris Road in the south-east portion of the plan, and a 4<sup>th</sup> road (toward the north) to provide access to and from the adjoining vacant land.
- It is important to note that the east-west local distributor road between Columbas Drive and Martin Pelusey Road has been shifted north compared to the alignment shown within the District Structure Plan (in Figure A.8), in order to tie in with the proposed new roundabout in Martin Pelusey Road.

- A subdivision concept plan has also been prepared on the basis of the proposed Local Structure Plan, identifying the possible creation of approximately 50 industrial Lots with a total developable area of almost 57 hectares (that is approximately 78 percent of the total Structure Plan area of 73 hectares).
- Taking into account that there are already plans for a possible petrol station adjacent to the proposed roundabout in Marin Pelusey Road, and adopting an average trip generation rate of 107 trips per hectare (based on the average of 5 industrial land use categories within the Institute of Transportation Engineers (ITE) 'Trip Generation' publication), it is therefore estimated that the overall Local Structure Plan area could generate a total of 7,800 vehicle trips per day on an average weekday.
- Based on traffic modelling work previously carried out within this area, it is estimated that 55 percent of overall traffic flows will travel to/from the west via Harris Road, with 25 percent to/from the north via Martin Pelusey Road, 15 percent to/from the east via the new east-west link road towards Wireless Road, and 5 percent to/from the south.
- The resulting future development traffic flows for the proposed Structure Plan are shown in Figure A.12 in the Technical Appendix, identifying a maximum of 2,300 vehicles per day on any of the internal roads. However, it is also important to take into account the additional traffic flows that will be generated by the adjoining development areas within the remainder of the Picton Industrial Area Southern Precinct District Structure Plan.
- It is therefore assumed that the development areas immediately north and west of the Local Structure Plan will also generate traffic at the same overall rate of 107 trips per hectare (which is the average of the 5 individual rates for Industrial Park, General Light Industry, General Heavy Industry, Manufacturing and Warehousing). However, for the additional areas located inside the railway loop, it is assumed that a lower trip rate of 56 trips per hectare will apply, based on the average trip generation rate for General Heavy Industry and Manufacturing, which is more applicable to the anticipated rail related activities and uses within this area.
- The overall adjacent areas within the remainder of the District Structure Plan are therefore expected to generate a total of 12,430 vehicle trips per day (based on the development areas calculated in Chapter A.6, resulting in a total trip generation of 20,230 vehicles per day, with total future traffic flows as shown in Figure A.13 in the Technical Appendix.

## 2.5 RESULTING FUTURE OVERALL ROAD NETWORK

- Taking into account the overall District Structure Plans for Picton Industrial Park Southern Precinct, Waterloo Industrial Park, and Wanju, together with the forecast future development traffic flows discussed above in Section 2.4, the resulting future overall road network in the vicinity of the currently planned Local Structure Plan is shown in Figure A.14 in Chapter A.7 in the Technical Appendix.
- It can be seen in Figure A.14 that Harris Road should be classified as a 'District Distributor B' road (or Integrator B using the Liveable Neighbourhoods terminology), as should Golding Crescent and its extension to the south-east side of the Bunbury Outer Ring Road in the long term.
- However, Columbas Drive and the other 'Internal Distributor' roads within the Picton Industrial Park Southern Precinct will only need to be 'Local Distributor' roads (with maximum traffic volumes of approximately 7,000 vehicles per day).
- Development Control Policy DC 4.1 - 'Industrial Subdivision' provides guidance on matters to be considered by the Western Australian Planning Commission when determining applications for industrial subdivision. The Policy states that a minimum road reserve width of 20 metres should be provided for all roads within an industrial area, increasing to 25 metres for heavily trafficked/major through routes, but with carriageway widths of 10 metres in both scenarios.

- It is therefore recommended that the east-west 'Local Distributor' road within the proposed Local Structure Plan should provide a road reserve width of 25 metres, while all other internal roads will only require 20 metres. However, it is also recommended that Columbas Drive should also be widened to 25 metres, with a 2.5 metre widening on either side.
- It is also necessary to consider the acceptable intersection spacing along both Martin Pelusey Road and Harris Road for each of the proposed access roads, which can be identified on the basis of the Safe Intersection Sight Distance (SISD) for vehicles travelling along the major road (noting that the provision of SISD ensures that the driver of a vehicle on the major road has sufficient time to observe a situation arising at an approaching intersection and decelerate to a stop in time to avoid a collision).
- For the existing speed limits of 80 kilometres per hour for both Martin Pelusey Road and Harris Road, the required Safe Intersection Sight Distance is 226 metres (based on a design speed of 90 kilometres per hour and a reaction time of 2.5 seconds). It is therefore recommended to adopt a minimum intersection spacing of 230 metres along both of these roads. And with an assumed speed limit of 50 kilometres per hour for each of the internal roads, it is recommended to adopt a minimum intersection spacing of 130 metres along both Columbas Drive and the east-west local distributor road (based on the SISD for a design speed of 60 kilometres per hour).
- It is also important to consider the required intersection layouts for each of the proposed roads accessing the Local Structure Plan area, noting that a roundabout has already been identified (as part of the Waterloo Industrial Park District Structure Plan) at the now proposed 4-way intersection in Martin Pelusey Road.
- It is therefore recommended to make provision for both left turn and right turn lanes at the proposed access roads off both Martin Pelusey Road and Harris Road.
- However, in order to avoid the need for a roundabout at the 4-way intersection of Harris Road - Columbas Drive - Kerr Road, it is recommended to restrict access to/from Kerr Road to left-turn movements only, as noted in Figure 2 in Chapter 3 Overall Conclusions and Recommendations.

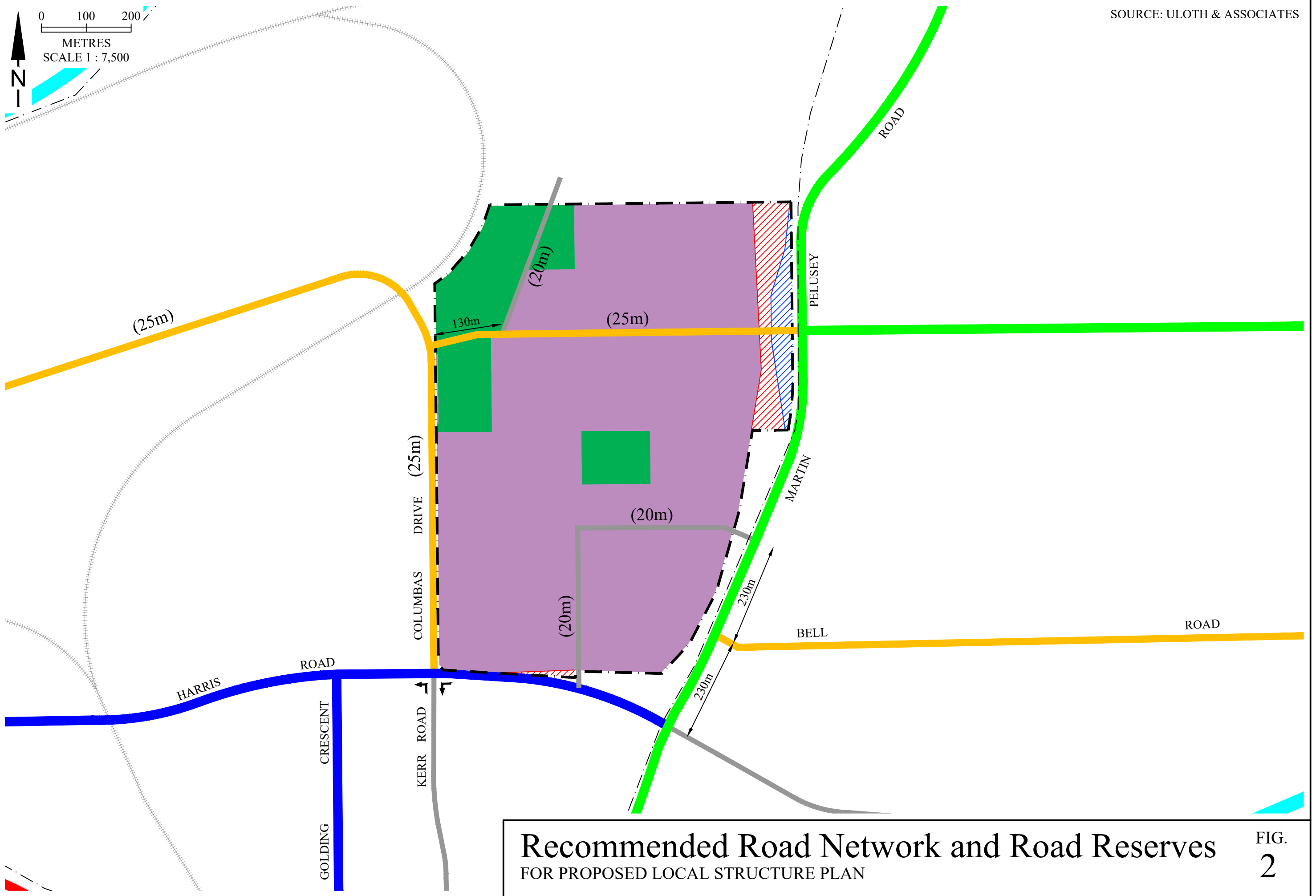
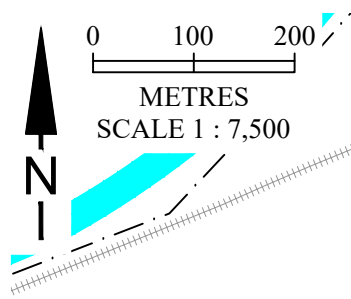


### 3. OVERALL CONCLUSIONS AND RECOMMENDATIONS

The overall conclusions and recommendations for the proposed Local Structure Plan are drawn from the study findings and conclusions presented above in Chapter 2, and the additional information in the Technical Appendix, as follows:

- The proposed Local Structure Plan is expected to generate a total of 7,800 vehicle trips per day during an average weekday, with an additional 12,430 vehicle trips per day from the adjacent development areas north of Harris Road.
- Columbas Drive is therefore expected to carry just over 7,000 vehicles per day, as shown in Figure A.13 in Chapter A.7 in the Technical Appendix, with similar flows on the proposed east-west road linking from Columbas Drive to Martin Pelusey Road.
- The resulting overall road network in the vicinity of the proposed Local Structure Plan is therefore as shown in Figure A.14 in Chapter A.7, taking into account the combined District Structure Plans for Waterloo and Wanju, as well as the current overall access plan for the Bunbury Outer Ring Road.
- The recommended road network and road reserves for the proposed Local Structure Plan are then shown in Figure 2, with 25 metre road reserves for Columbas Drive and the new east-west road linking to Martin Pelusey Road, which are both recommended to be classified as ‘Local Distributor’ roads.
- The additional roads linking to both Harris Road and Martin Pelusey Road should both be classified as ‘Access Roads’ with 20 metre road reserves, as also shown in Figure 2, as should the north-south road linking to the adjacent development area further north.
- Figure 2 also shows the recommended intersection spacing of 230 metres for the proposed access roads off Martin Pelusey Road, as well as the recommended spacing of 130 metres along the internal Local Distributor Road.
- It is also recommended to restrict access to/from Kerr Road (south of Harris Road) to left-in/left-out movements only, in order to accommodate all turning movements in and out of Columbas Drive without the need for a roundabout or traffic signals.





Recommended Road Network and Road Reserves  
FOR PROPOSED LOCAL STRUCTURE PLAN

FIG.  
2

## **TECHNICAL APPENDIX**

The Technical Appendix documents the existing situation and the currently planned regional road network, together with the various District Structure Plans, the proposed Local Structure Plan and the resulting future development traffic flows.

## **A.1 EXISTING ROADS AND INTERSECTIONS**

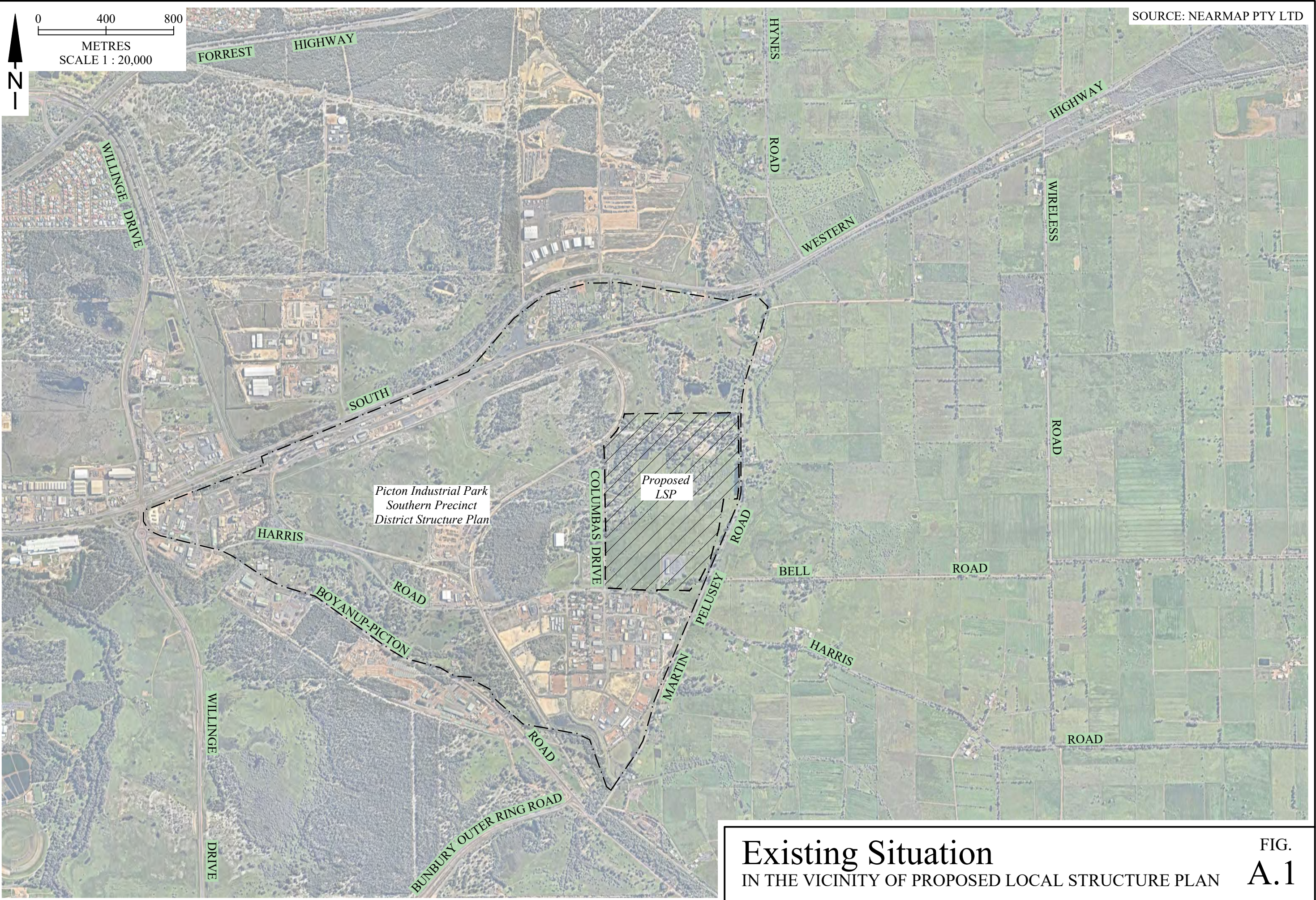
Figure A.1 shows an aerial photograph of the existing situation in the vicinity of the proposed Local Structure Plan, including South Western Highway, Martin Pelusey Road, Harris Road and Boyanup-Picton Road, as well as the existing Stage 1 portion of the Bunbury Outer Ring Road to the south-west of Boyanup-Picton Road.

## **A.2 EXISTING ROAD HIERARCHY AND DAILY TRAFFIC FLOWS**

Figure A.2 shows the existing functional road hierarchy in the vicinity of the proposed Local Structure Plan area, as defined by Main Roads WA.

Figure A.3 then shows the existing weekday daily traffic flows in the vicinity of the subject site, as also provided on the Main Roads WA website.

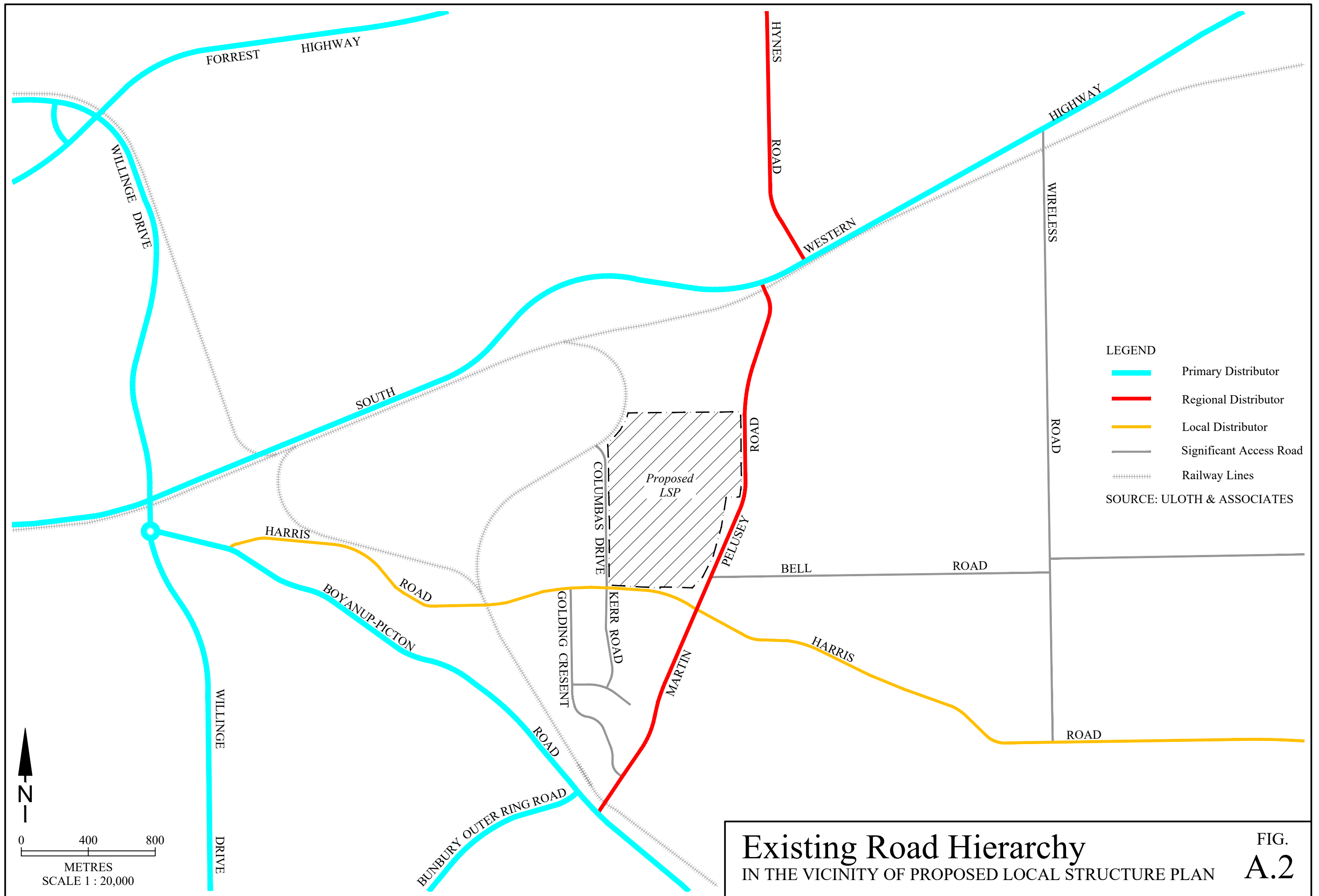


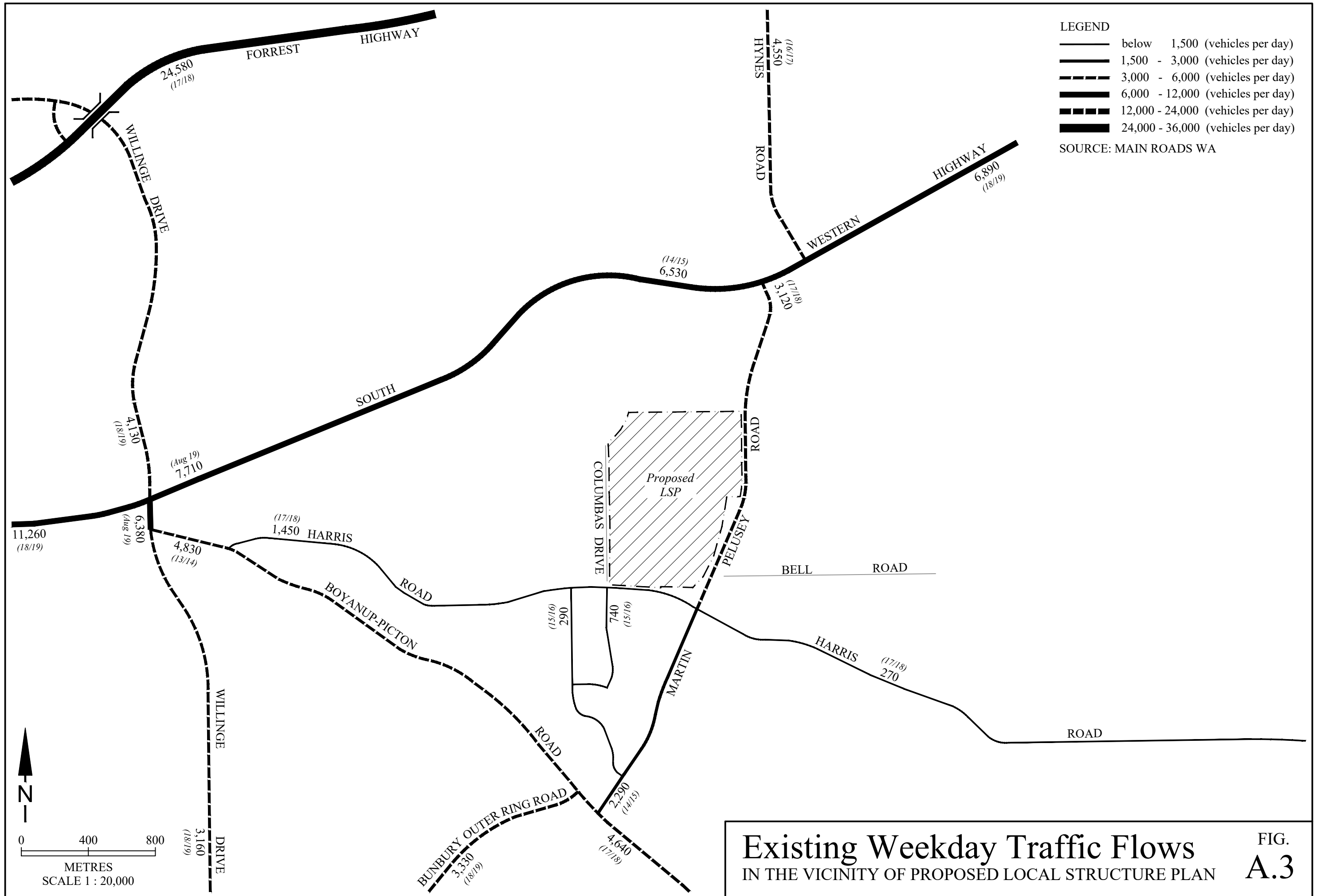


**Existing Situation**  
IN THE VICINITY OF PROPOSED LOCAL STRUCTURE PLAN

FIG.  
**A.1**







### **A.3 CURRENTLY PLANNED REGIONAL ROAD NETWORK**

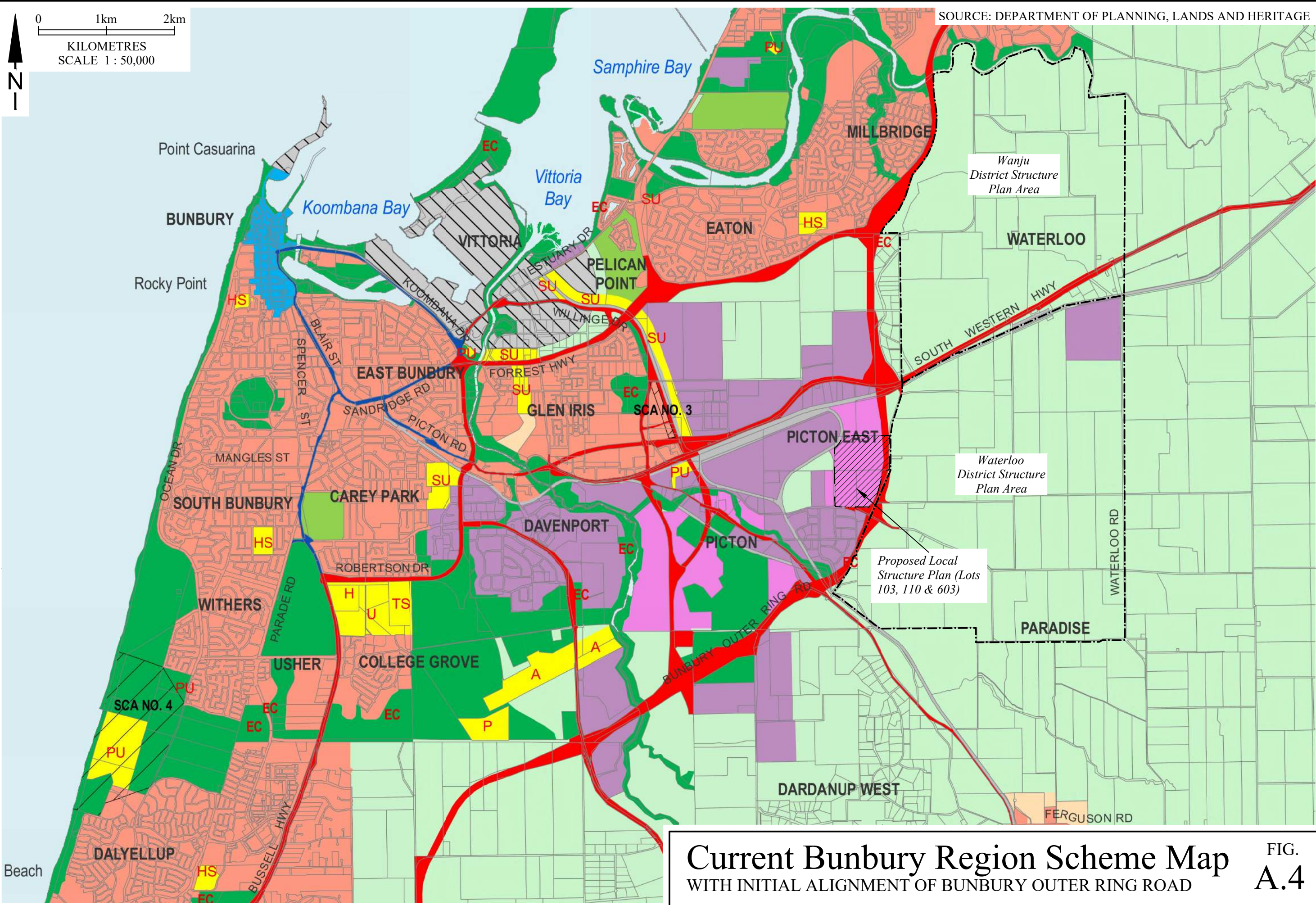
Figure A.4 shows the current Bunbury Region Scheme Map in the vicinity of the Picton industrial areas, including the now superseded alignment of the Bunbury Outer Ring Road adjacent to Martin Pelusey Road and Hynes Road (linking to Australind Bypass near Millbridge). The plan also identifies the currently proposed Local Structure Plan area at Lots 103, 110 and 603 Harris Road and Martin Pelusey Road, Picton East, located immediately to the west of the superseded Bunbury Outer Ring Road at Martin Pelusey Road.

Figure A.5 then shows the currently planned Bunbury Outer Ring Road, realigned approximately 2 to 3 kilometres further east, with proposed grade-separated interchanges at Willinge Drive, Wireless Road, South Western Highway and Raymond Road.

Figure A.6 shows a composite future road map for the same overall area, identifying the proposed realignment of the Bunbury Outer Ring Road through the now proposed Waterloo Industrial Park District Structure Plan and to the east of the Wanju District Structure Plan.

Figure A.7 then provides more detail regarding the Bunbury Outer Ring Road alignment and the planned connectivity with the adjacent District Distributor road network.

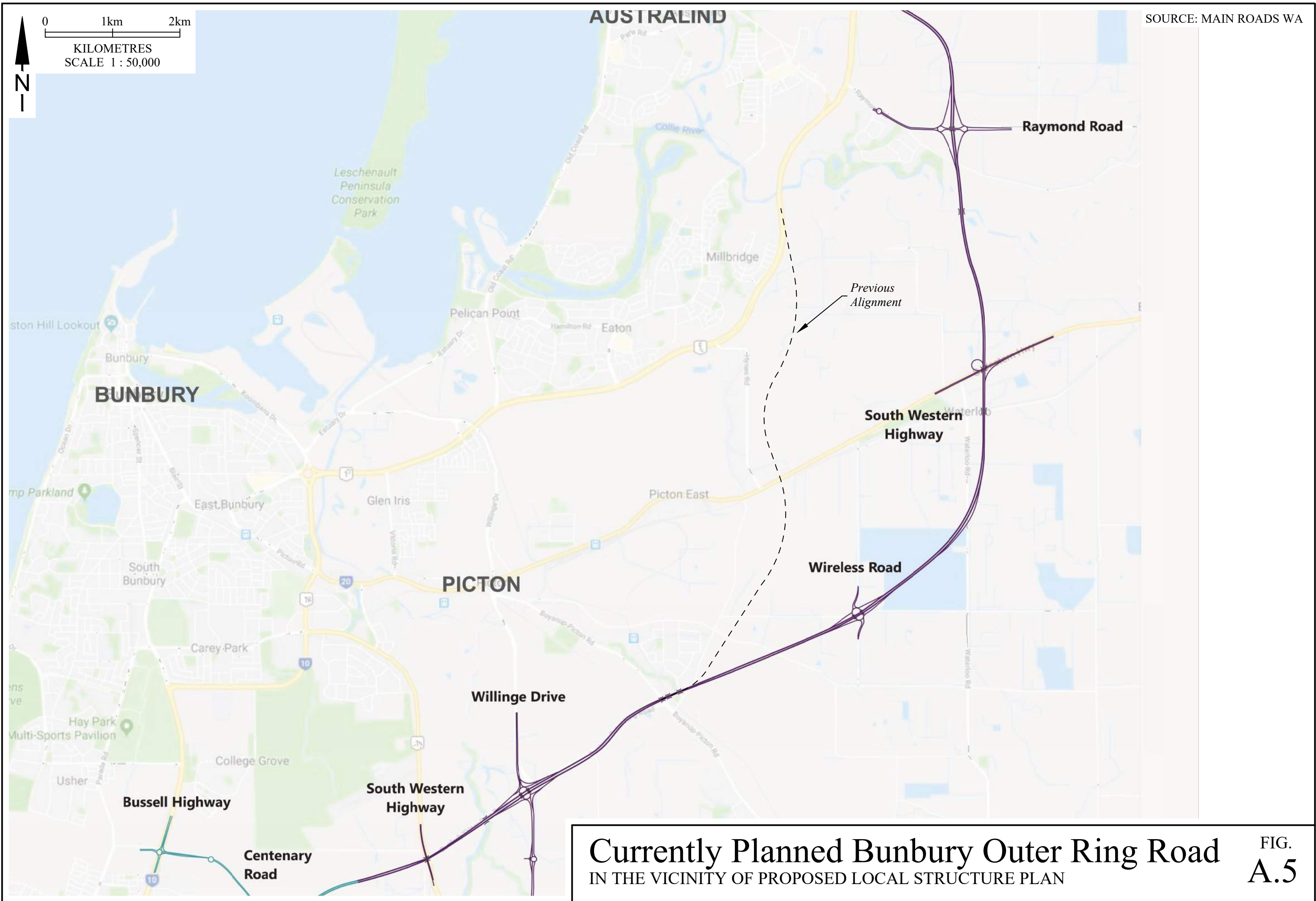




**Current Bunbury Region Scheme Map**  
WITH INITIAL ALIGNMENT OF BUNBURY OUTER RING ROAD

FIG. A.4

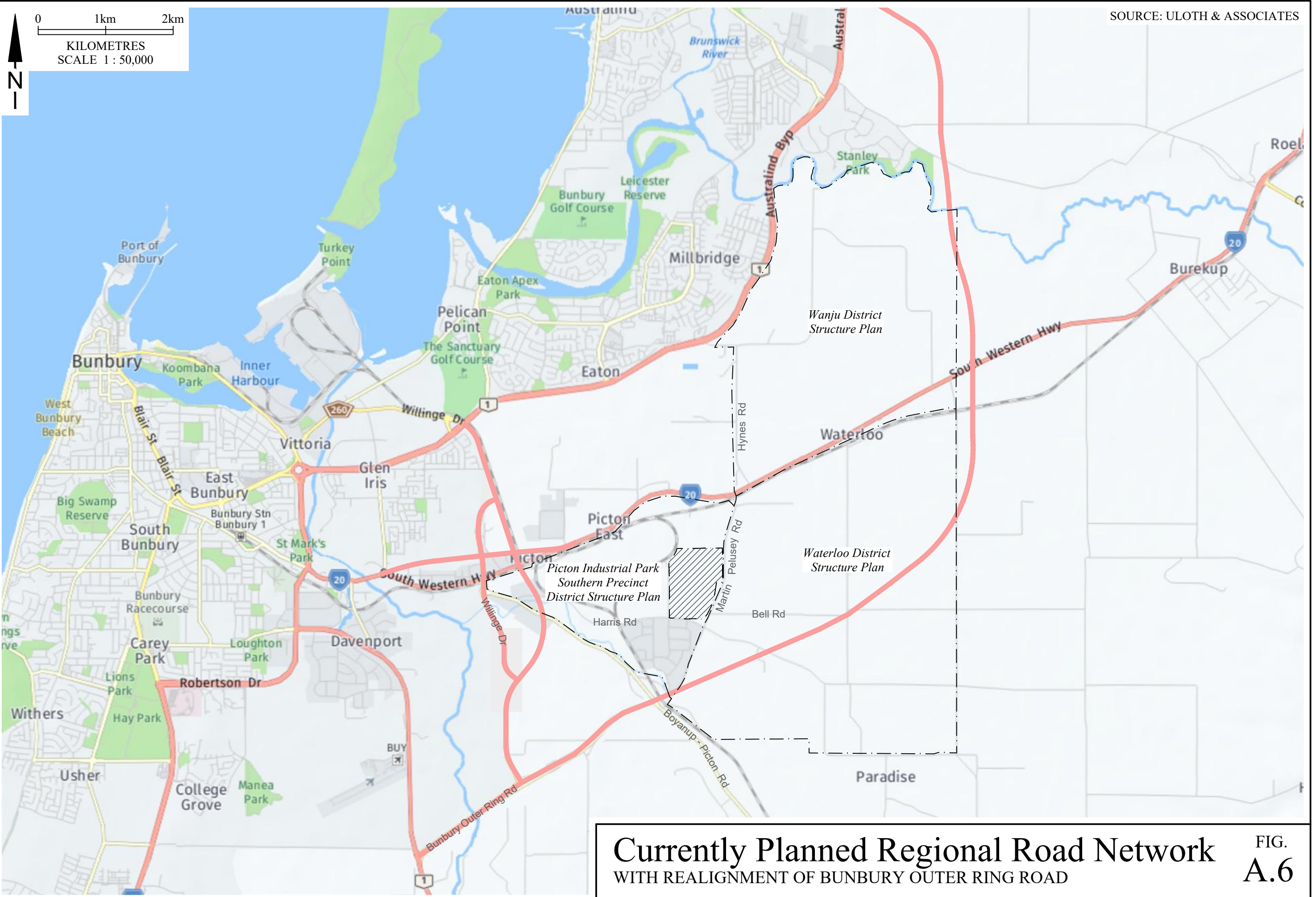




**Currently Planned Bunbury Outer Ring Road**  
IN THE VICINITY OF PROPOSED LOCAL STRUCTURE PLAN

FIG. A.5

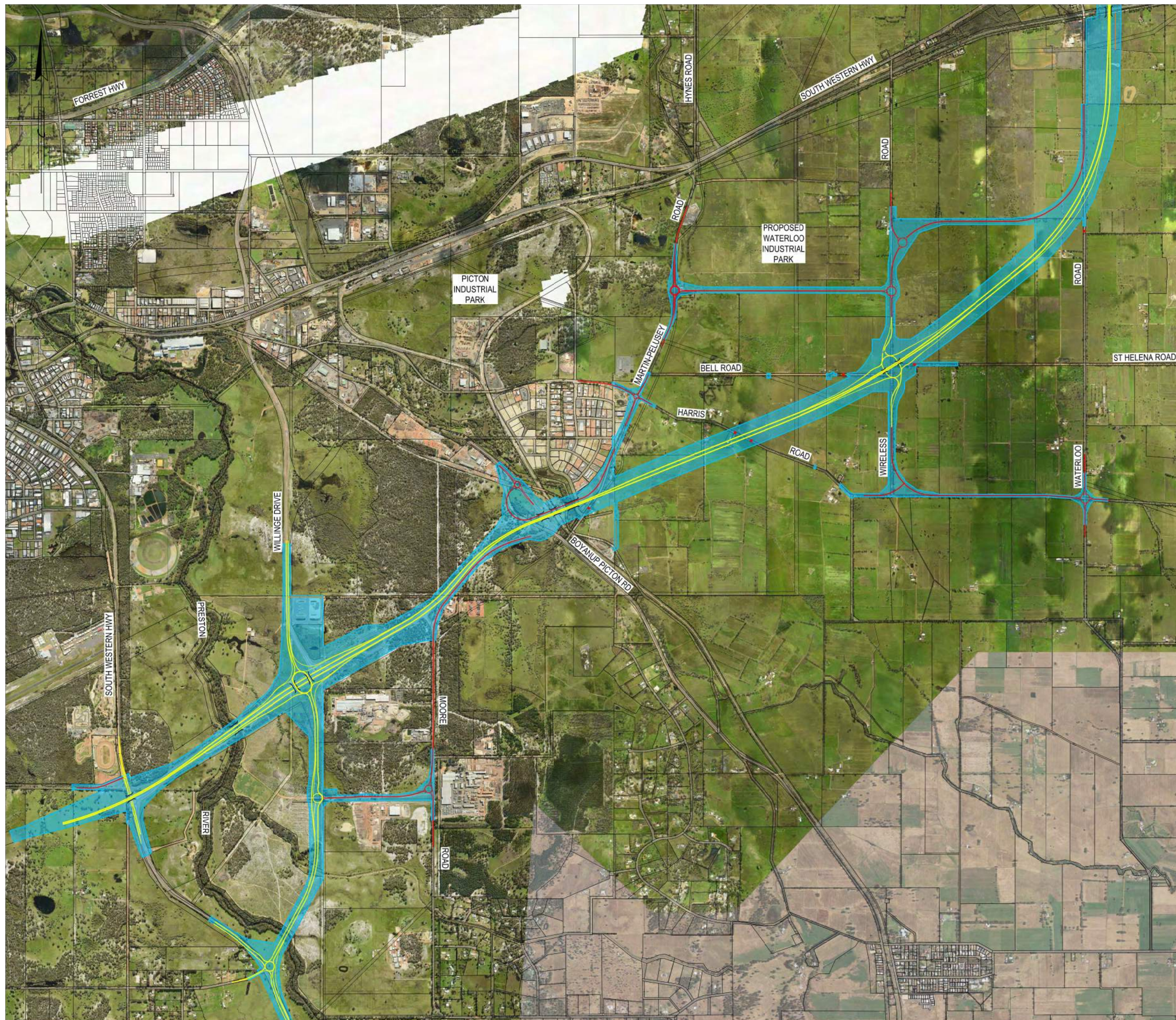




**Currently Planned Regional Road Network**  
WITH REALIGNMENT OF BUNBURY OUTER RING ROAD

FIG. A.6





- LEGEND:**
- REFERRAL CORRIDOR
  - PROPOSED MAJOR ROAD
  - PROPOSED LOCAL ROAD
  - PROPOSED ACCESS ROAD

FIG. A.7

**SKETCH ONLY  
ULTIMATE PLANNING  
UNDER DEVELOPMENT**



DATE	15/04/2019	PREPARED	
SCALE	1:15000m @ A1	GRID	PCG 94
PROJECT	BUNBURY OUTER RING ROAD (H058)		
TITLE	BORR NORTH ACCESS STRATEGY PLAN SHEET 2 OF 2		
SKETCH No.	BORR-01-SK-RD-0151	REV	B

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 A 1  
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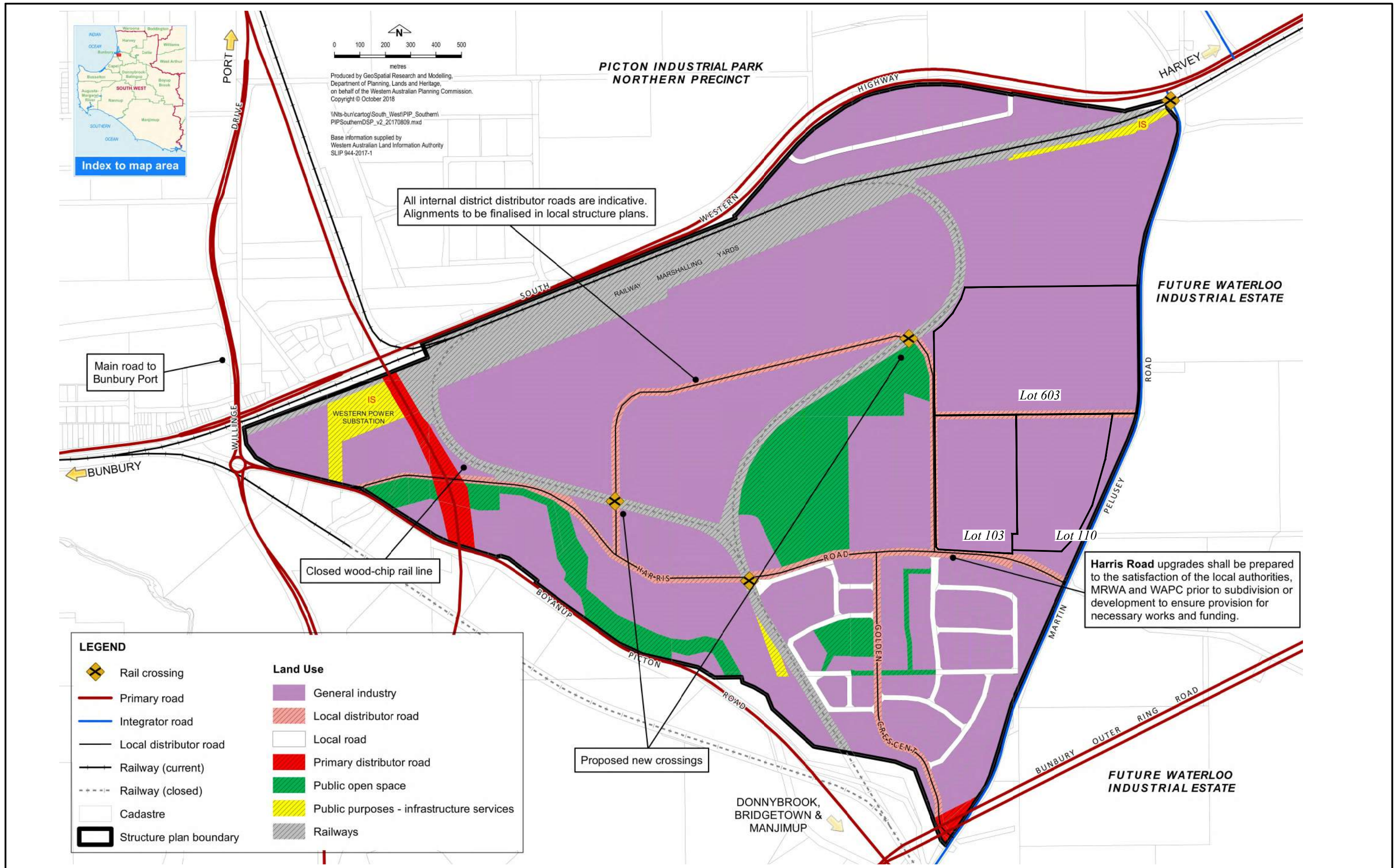


#### **A.4 PICTON INDUSTRIAL PARK SOUTHERN PRECINCT DISTRICT STRUCTURE PLAN**

Figure A.8 shows the approved Picton Industrial Park Southern Precinct District Structure Plan, for the area bounded by South Western Highway, Martin Pelusey Road and Boyanup Picton Road.

It can be seen in Figure A.8 that the approved plan shows Harris Road as a Local Distributor road serving as an east-west spine road for the overall structure plan, between Boyanup-Picton Road in the west and Martin Pelusey Road in the east. It can also be seen that the area north of Harris Road is serviced by the existing Columbas Drive, extending towards the west and linking back to Harris Road, together with a new east-west Local Distributor road linking from Columbas Drive to Martin Pelusey Road.

It is also important to note that potential widening of Harris Road at its western end is restricted due to the squeeze-point between the existing railway reserve and the Ferguson River Reserve.



Approved District Structure Plan  
 PICTON INDUSTRIAL PARK SOUTHERN PRECINCT

FIG.  
 A.8

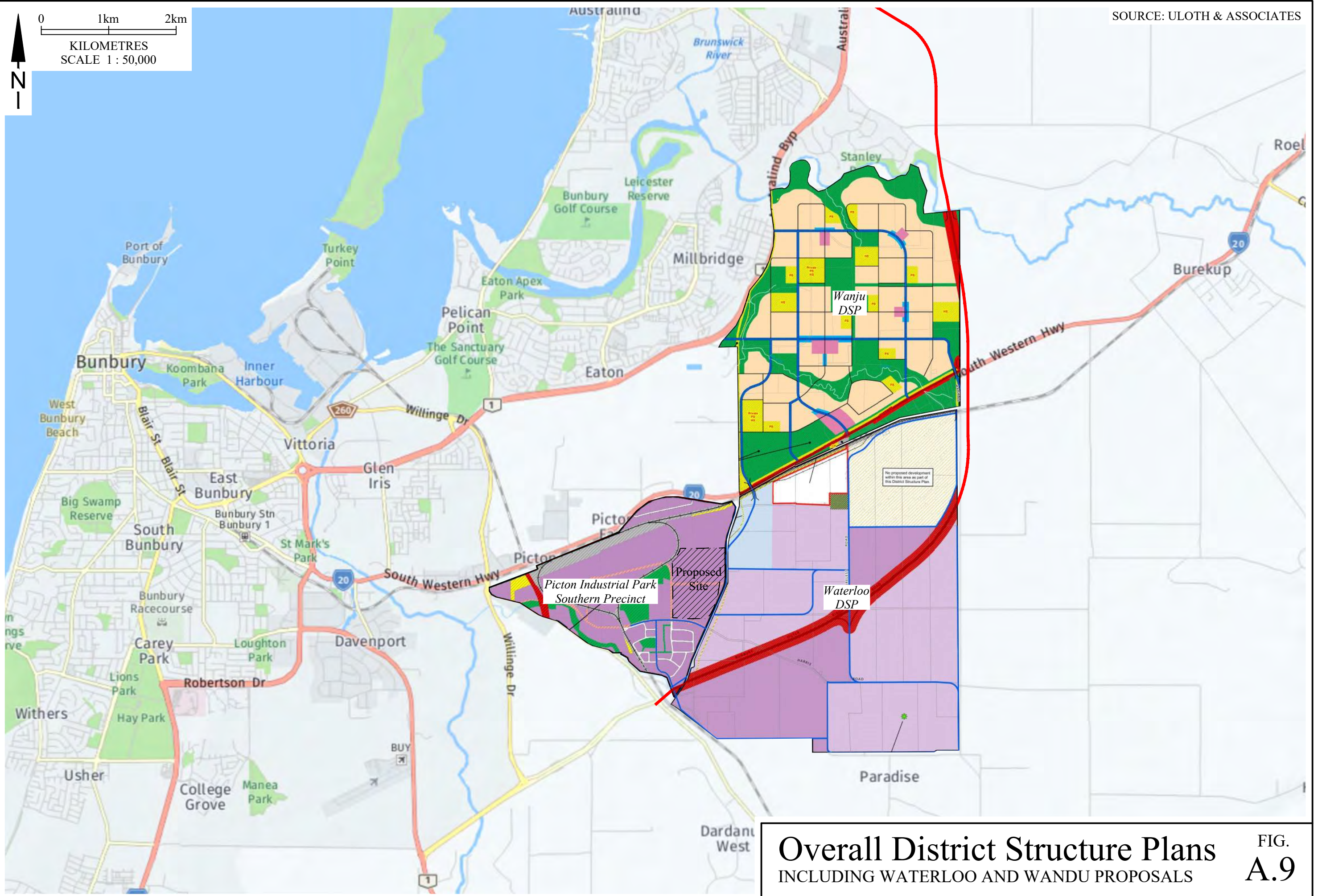
## **A.5 WATERLOO AND WANJU DISTRICT STRUCTURE PLANS**

The Waterloo Industrial Park and Wanju District Structure Plans were both advertised for public comment during February 2019, including the proposed new alignment of the Bunbury Outer Ring Road.

Figure A.9 shows a composite of the 2 Structure Plans, together with the previously approved Picton Industrial Park Southern Precinct District Structure Plan, and the surrounding road network.

Figure A.10 then shows a closer image of the same composite plan, in the vicinity of the now proposed Local Structure Plan, noting the staggered alignment of the east-west distributor roads linking to each side of Martin Pelusey Road.

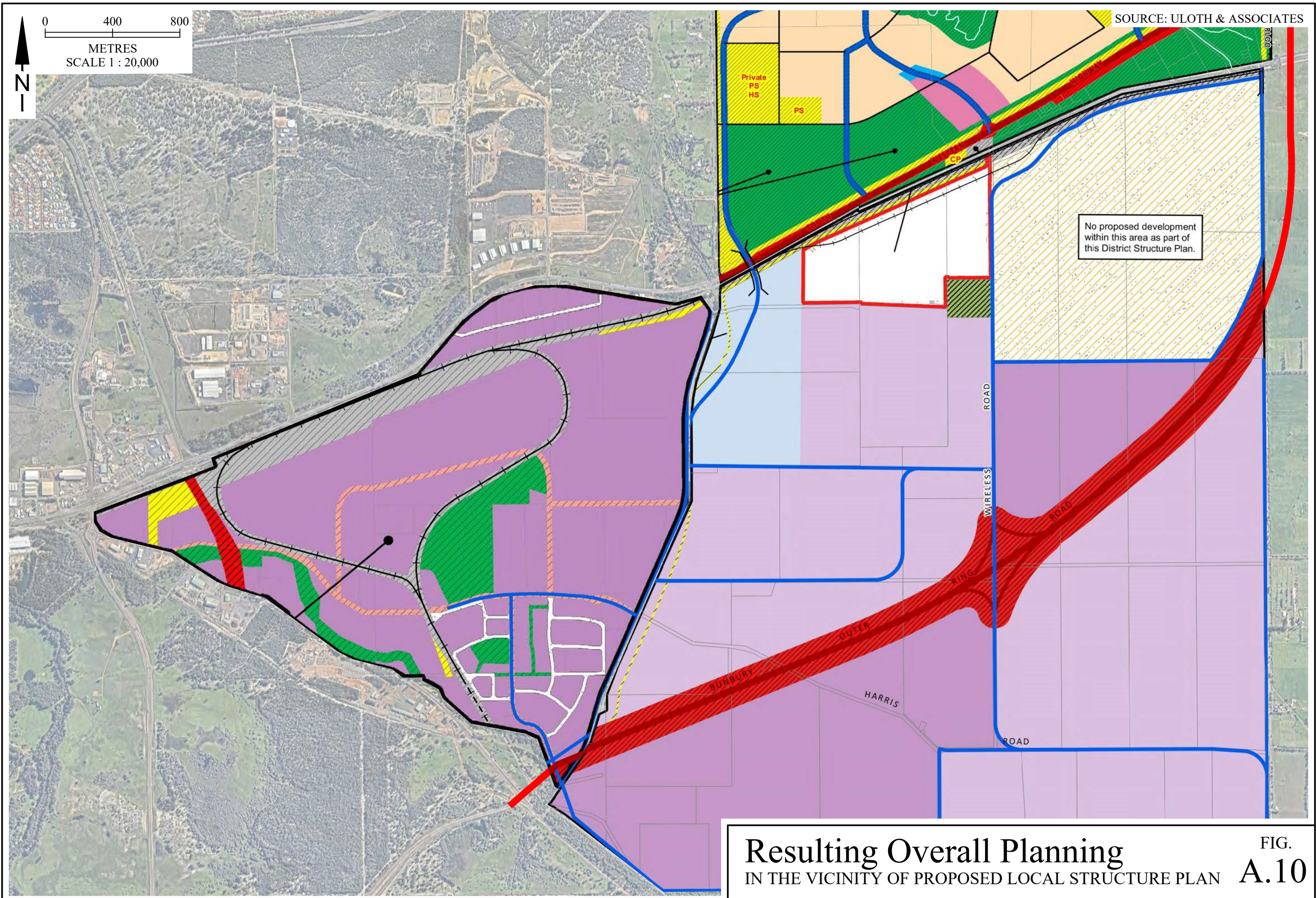




**Overall District Structure Plans**  
INCLUDING WATERLOO AND WANJU PROPOSALS

FIG.  
**A.9**





**Resulting Overall Planning**  
 IN THE VICINITY OF PROPOSED LOCAL STRUCTURE PLAN

FIG. A.10



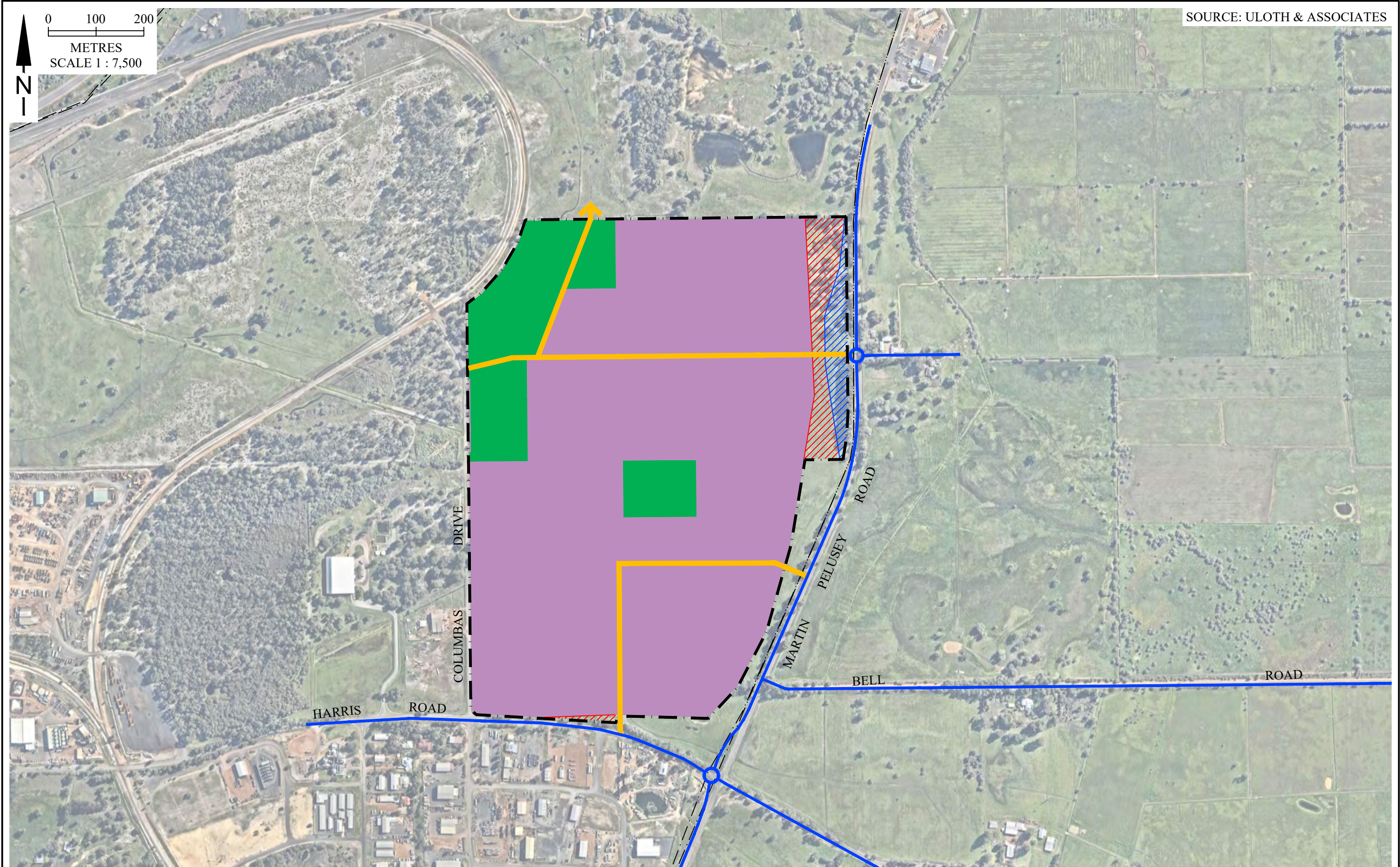
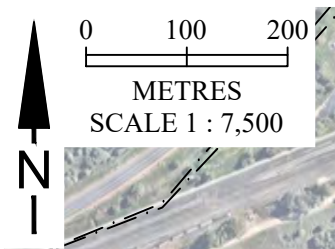
## **A.6 PROPOSED LOCAL STRUCTURE PLAN**

Figure A.11 shows the currently proposed Local Structure Plan for Lots 103, 110 and 603 Harris Road and Martin Pelusey Road, taking into account the proposed removal of the Primary Regional Road reserve along Martin Pelusey Road due to the proposed realignment of the Bunbury Outer Ring Road.

The plan also proposes a modified alignment for the east-west distributor road between Columbas Drive and Martin Pelusey Road, to tie-in with the new roundabout identified in the Waterloo Industrial Park District Structure Plan and the resulting east-west link to the new Bunbury Outer Ring Road interchange at Wireless Road

The Local Structure Plan is expected to result in the creation of approximately 50 individual Industrial Lots, with a total developable site area of approximately 57 hectares. And applying a similar yield ratio to the remaining District Structure Plan areas north of Harris Road results in an additional 161 hectares of development area, including 95 hectares located within the existing railway loop.





**Proposed Local Structure Plan**  
LOTS 103, 110 AND 603 HARRIS ROAD AND MARTIN PELUSEY ROAD, PICTON EAST

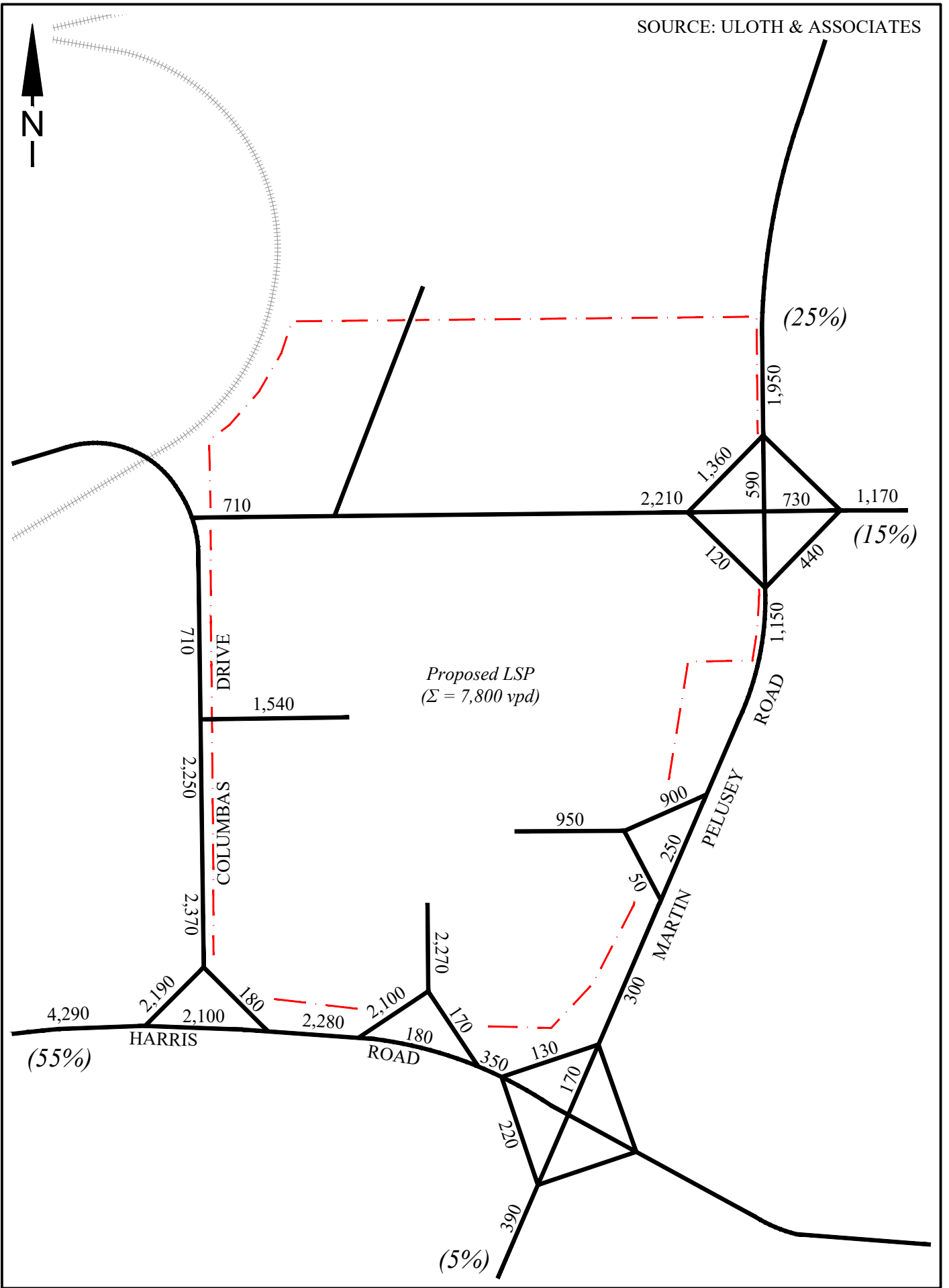
FIG. **A.11**



## **A.7 FUTURE TRAFFIC FLOWS AND RESULTING OVERALL ROAD NETWORK**

Figure A.12 shows the future development traffic flows for the proposed Local Structure Plan area, together with the anticipated external traffic distribution, while Figure A.13 shows the total future traffic flows including external through traffic flows from the adjacent industrial areas north of Harris Road and west of Martin Pelusey Road.

Figure A.14 then shows the resulting overall road network, taking into account the combined District Structure Plans for Waterloo Industrial Park and Wanju, as well as the current plans for the Bunbury Outer Ring Road.



**Future Development Traffic Flows**  
FOR PROPOSED LOCAL STRUCTURE PLAN

FIG.  
A.12



