

# Proposed Coles Supermarket - Florida Neighbourhood Centre

DEPARTMENT OF PLANNING, LANDS AND HERITAGE	
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REVIEW OF SITE PLAN AND  
ACCESS ARRANGEMENTS

## TABLE OF CONTENTS

	<u>Page</u>
1. INTRODUCTION	1
1.1 Study Objectives	1
2. EXISTING SITUATION	2
3. REVIEW OF CURRENTLY APPROVED PLAN	3
3.1 Floorspace and Access	3
3.2 Future Traffic Flows	3
3.3 Service Vehicle Access Under Approved Plan	3
4. REVISED DEVELOPMENT APPLICATION	4
4.1 Modified Site Plan	4
4.2 Future Daily Traffic Generation and Overall Traffic Impact	4
4.3 Car Park Layout, Servicing and Pedestrian/Cyclist Access	4
4.4 Access Driveways and Adjacent Intersections	5
4.5 Intersection Operational Analyses	6
5. OVERALL CONCLUSIONS AND RECOMMENDATIONS	8
TECHNICAL APPENDIX A - CURRENTLY APPROVED PLAN	A-1
A.1 FUTURE TRAFFIC FLOWS FOR APPROVED PLAN	A-2
A.2 SERVICE VEHICLE SWEPT PATHS FOR THE APPROVED PLAN	A-3
TECHNICAL APPENDIX B - REVISED DEVELOPMENT APPLICATION	B-1
B.1 FUTURE TRAFFIC FLOWS FOR MODIFIED PLAN	B-2
B.2 PEDESTRIAN/CYCLIST FACILITIES	B-5
B.3 SERVICE VEHICLE SWEPT PATHS FOR MODIFIED PLAN	B-6



## LIST OF TABLES

		<u>Page</u>
TECHNICAL APPENDIX B		
B.1	Operational Characteristics for Unsignalised Bailey Blvd - Cocklebidy Gate Junction With Proposed Shopping Centre Development Future PM Peak Hour Under 2 Possible Scenarios	B-2
B.2	Operational Characteristics for Unsignalised Bailey Boulevard - Driveway 1 Junction With Proposed Shopping Centre Development Future PM Peak Hour Under 2 Possible Scenarios	B-3
B.3	Operational Characteristics for Unsignalised Bailey Boulevard - Dandaragan Drive Single-Lane Roundabout – With Proposed Shopping Centre Development Future PM Peak Hour Under 2 Possible Scenarios	B-3
B.4	Operational Characteristics for Unsignalised Dandaragan Drive - Balladonia Parade - Driveway 2 4-Way Intersection – With Proposed Shopping Centre Development Future PM Peak Hour Under 2 Possible Scenarios	B-4

## LIST OF FIGURES

	<u>Follows</u> <u>Page</u>
1. Locality Plan – Florida Neighbourhood Centre	2
2. Existing Roads and Intersections In the Vicinity of Proposed Development Site	2
3. Existing Situation – Immediately Adjacent to Proposed Development	2
4. Approved Development Application Plan – June 2015	3
5. Previously Approved Development – With Adjacent Roads and Intersections	3
6. Currently Proposed Development Application Coles Supermarket - Florida Neighbourhood Centre	5
7. Currently Proposed Development – With Adjacent Roads and Intersections	5
8. Recommended Modifications for Semi-Trailer Access Bailey Boulevard - Cocklebidy Gate	8
9. Recommended Concept Plan For Loading Dock Access and ‘Click & Collect’	8
10. Recommended Concept Plan Bailey Boulevard - Access Driveway 1	8
11. Recommended Concept Plan Dandaragan Drive - Balladonia Parade - Driveway 2	8
12. Recommended Modifications For Access Driveway 3 and Adjacent Loading Area	8

### TECHNICAL APPENDIX A

A.1 Future Daily Traffic Flows – For Approved Development Plan	A-2
A.2 Swept Paths for Semi-Trailer (19 metres) Accessing Currently Approved Loading Dock	A-3
A.3 Swept Paths for Heavy Rigid Vehicle (12.5 metres) Accessing Currently Approved Loading Dock	A-3

### TECHNICAL APPENDIX B

B.1 Future Daily Traffic Flows – For Revised Development Plan	B-4
B.2 Future PM Peak Hour Background Traffic Scenario 1 – Worst Case for Driveways 1 and 2	B-4

(...Cont'd)

## LIST OF FIGURES (CONT'D)

	<u>Follows</u> <u>Page</u>
B.3     Future PM Peak Hour Background Traffic Scenario 2 – Worst Case for Cocklebidy Gate	B-4
B.4     Future PM Peak Hour Total Traffic Scenario 1 – Worst Case for Driveways 1 and 2	B-4
B.5     Future PM Peak Hour Total Traffic Scenario 2 – Worst Case for Cocklebidy Gate	B-4
B.6     Future Pedestrian/Cyclist Facilities – With Revised Development Plan	B-5
B.7     Swept Paths for Semi-Trailer (19.0 metres) Accessing Site via Bailey Boulevard - Cocklebidy Gate	B-6
B.8     Swept Paths for Semi-Trailer (19.0 metres) Accessing Proposed Loading Dock	B-6
B.9     Swept Paths for Heavy Rigid Vehicle (12.5 metres) Accessing Proposed Loading Dock and Compactor	B-6
B.10    Swept Paths for Rubbish Truck (10.0 metres) Accessing Secondary Loading Dock	B-6
B.11    Swept Paths for Medium Rigid Vehicle (8.8 metres) Accessing Secondary Loading Dock	B-6
B.12    Swept Paths for Rubbish Truck (10.0 metres) Accessing Proposed Gym	B-6
B.13    Swept Paths for Rubbish Truck (10.0 metres) Accessing Proposed Child Care Centre	B-6

## 1. INTRODUCTION

A Development Application for a new Supermarket and Speciality Shop development within the Florida Neighbourhood Centre was initially approved by the Peel Joint Development Assessment Panel in June 2015. An amended approval was then granted by City of Mandurah in April 2017, applying the same conditions of approval, with no changes to the approved plan, but extending the duration of the approval to a period of 4 years (to April 2021).

It is important to note, however, that due to changes being made to the proposed plan during the initial JDAP assessment period (in 2015), various aspects of the approved plan were not properly reviewed, including the proposed service vehicle access and manoeuvring requirements, as well as the overall car park access arrangements.

In order to address concerns regarding the commercial viability of the approved plan, a new Development Application is now being prepared, and Uloth and Associates has been commissioned to review the overall car park layouts, access arrangements and servicing requirements.

City of Mandurah has also requested peak hour intersection operational analyses for the proposed access driveways and intersections along both Baily Boulevard and Dandaragan Drive.

### 1.1 STUDY OBJECTIVES

The overall study objectives are to initially identify the shortcomings of the currently approved development plan, and to then provide input to the proposed new site plan and modified access arrangement.

Specific study objectives are as follows:

- Identify the existing situation in the vicinity of the proposed development;
- Provide a summary of issues and/or shortcomings with the currently approved plan;
- Identify the overall trip generation for both the currently approved plan and the revised plan, for comparison, in order to confirm that the overall traffic impact remains unchanged;
- Identify the distribution of future traffic flows onto the proposed access driveways;
- Carry out PM peak hour intersection operational analyses for the Baily Boulevard and Dandaragan Drive access driveways and intersections; and
- Make recommendations regarding the overall access requirements, proposed car park layout, pedestrian/cyclist accessibility and servicing.

## **2. EXISTING SITUATION**

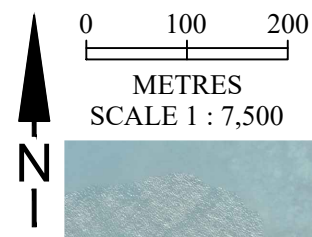
The Florida Neighbourhood Centre is bounded by Woodstock Avenue, Dandaragan Drive, Bailey Boulevard and the Dawesville Bypass, in Florida, as shown in the Locality Plan in Figure 1. However, the proposed Development Application is confined to Lot 924 Dandaragan Drive, which is located west of Cocklebiddy Gate.

The existing roads and intersections in the vicinity of the proposed development are shown in Figure 2, while the existing situation immediately adjacent to the site is shown in Figure 3.

It can be seen in Figure 2 that Bailey Boulevard provides access for the overall Neighbourhood Centre off Dawesville Bypass, while Dandaragan Drive forms a north-south spine for the adjoining residential neighbourhood.

Figure 3 then shows that both Bailey Boulevard and Dandaragan Drive are 2-lane boulevards, with wide central medians and with an existing roundabout at their intersection (at the south-east corner of the proposed development site). It can also be seen in Figure 3 that Cocklebiddy Gate and Woodstock Avenue are both 2-lane single-carriageway roads, with all-movement access off Bailey Boulevard and Dandaragan Drive, respectively, while there is also an existing median opening within Dandaragan Drive at Balladonia Parade.





Locality Plan  
FLORIDA NEIGHBOURHOOD CENTRE









**Existing Situation**  
IMMEDIATELY ADJACENT TO PROPOSED DEVELOPMENT



### 3. REVIEW OF CURRENTLY APPROVED PLAN

Figure 4 shows the currently approved development plan from June 2015, while Figure 5 shows the plan in the context of the existing adjacent roads and intersections.

#### 3.1 FLOORSPACE AND ACCESS

- The approved plan includes a total floorspace of 4,956 square metres GLA within the main Shopping Centre building, plus 2 pad-sites with 400 square metres and 350 square metres, respectively (although Condition 2a of the approval requires the removal of the 350 square metre tenancy).
- Car park access was proposed via 2 access driveways, with 1 each off Bailey Boulevard, Dandaragan Drive and Cocklebidy Gate, with separate service vehicle access in the north-east corner from Woodstock Avenue and Dandaragan Drive. The plan also shows was proposed roundabout at the access driveway off Dandaragan Drive, which is also required to be deleted (under Condition 2b). However, the proposed access driveway itself remains, leaving it unclear how the resulting 4-way intersection with Balladonia Parade was intended to operate.

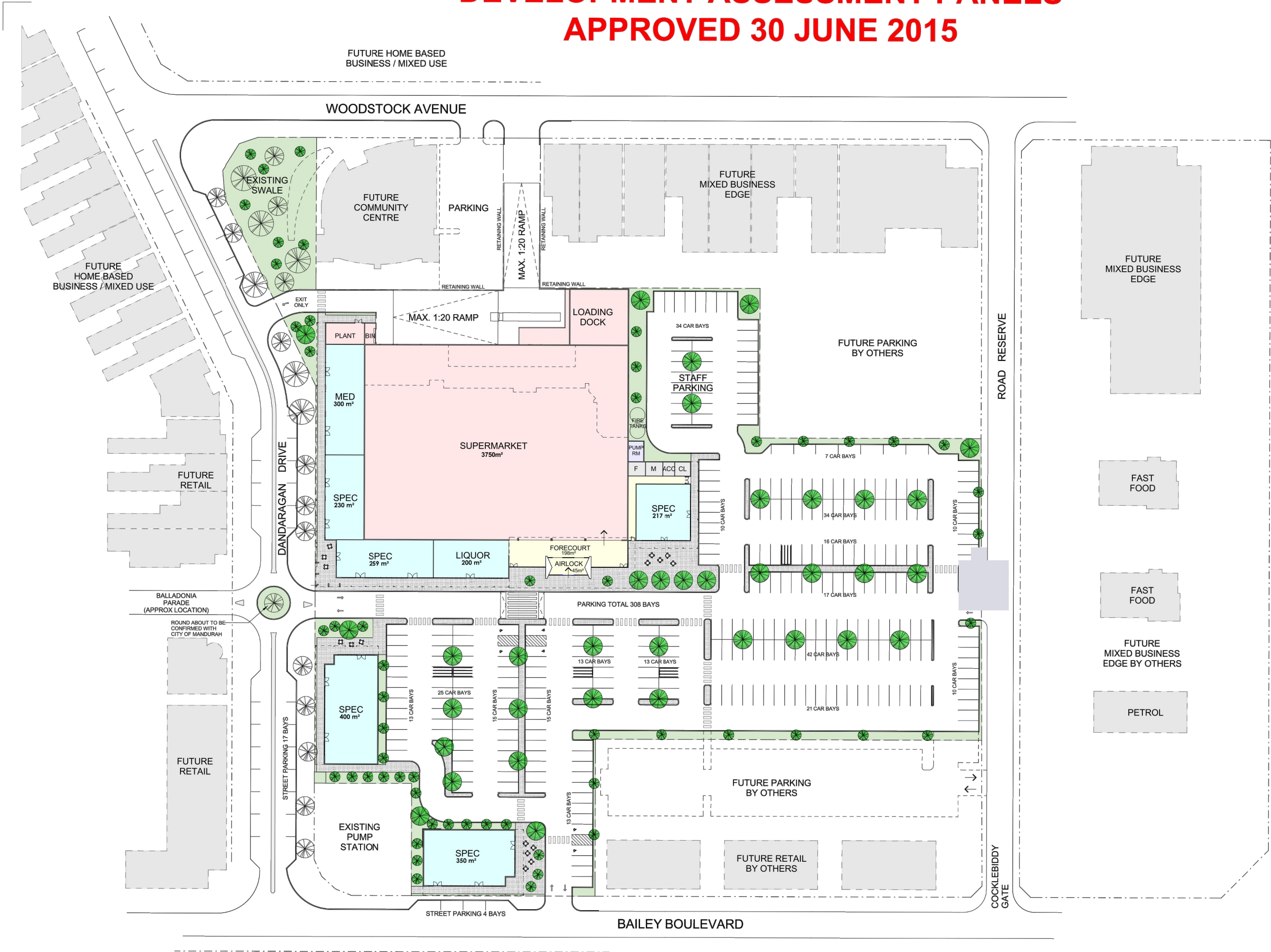
#### 3.2 FUTURE TRAFFIC FLOWS

- The initial Development Application was supported by a Transport Assessment Report prepared by KCCT (dated February 2015), which identified future traffic generation and distribution for the initially proposed development plan. However, as noted above in Chapter 1, the plan was significantly modified during the DA assessment period, but the corresponding report was never updated.
- On the basis of an overall daily trip generation rate of 121 vehicle trips per 100 square metres Gross Leasable Floor Area (as specified in the NSW RMS traffic generation guideline), it is estimated that the currently approved development would generate a total of 6,170 vehicle trips per day.
- Figure A.1 in the Technical Appendix shows the allocation of these future traffic flows onto the access driveways and adjacent roads, taking into account the overall traffic distribution identified within the KCCT report, with 55 percent of the total traffic travelling to/from Dawesville Bypass and the remaining 45 percent via the adjacent local roads. It can be seen in Figure A.1 that the busiest access driveway under the currently approved plan would be Driveway 1 (off Bailey Boulevard) with 2,770 vehicles per day, followed by Driveway 2 (off Dandaragan Drive) with 1,990 vehicles per day, and then Driveway 4 (off Cocklebidy Gate) with 1,410 vehicles per day, noting that Driveway 3 (off Woodstock Avenue) is for Service Vehicle access only.

#### 3.3 SERVICE VEHICLE ACCESS UNDER APPROVED PLAN

- Figures A.2 and A.3 in Technical Appendix A show swept path diagrams for the currently approved development plan, with Figure A.2 showing swept paths for a Semi-Trailer (19.0 metres) accessing the proposed supermarket loading dock, and Figure A.3 showing swept paths for a 12.5 metre Heavy Rigid Vehicle or Compactor Lift-Truck.
- It can be seen in Figure A.2 that the Semi-Trailer will not be able to access the loading dock if another vehicle is already at the dock. It can also be seen that significant widening would be required at the exit driveway onto Dandaragan Drive, with a crossover width in excess of 15 metres. Figure A.3 then shows that a Heavy Rigid Vehicle will also be unable to access the loading dock if another vehicle is already at the dock.
- It is therefore clear that the currently approved plan is not viable, and an alternative servicing arrangement is required.

DEVELOPMENT ASSESSMENT PANELS  
APPROVED 30 JUNE 2015



AREA CALCULATIONS	
SUPERMARKET	3750m²
SPECIALTIES	706m²
LIQUOR	200m²
MEDICAL	300m²
TOTAL AREAS (GLA)	4956m²

PARKING CALCULATIONS	
SUPERMARKET	226
SPECIALTIES	43
MEDICAL	6
LIQUOR	12
PAD SITE 1	24
PAD SITE 2	21

TOTAL REQUIRED	332
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PARKING PROVIDED:	
ON GRADE PARKING	308
STREET PARKING	21
TOTAL BAYS PROVIDED	329
SHORTFALL	-3

CAR PARKING REQUIREMENTS:  
RETAIL  
BAYS @ 6 BAYS / 100m²  
MEDICAL CENTRE  
BAYS @ 1 BAY / 50m²

CAR PARKING CALCULATIONS  
AS PER THE CITY OF  
MANDURAH'S "FLORIDA  
NEIGHBOURHOOD CENTRE  
OUTLINE DEVELOPMENT PLAN"

FIG.  
4









## **4. REVISED DEVELOPMENT APPLICATION**

As noted above in Chapter 1, a revised Development Plan has now been prepared.

### **4.1 MODIFIED SITE PLAN**

- The modified plan for the revised Development Application is shown in Figure 6, as prepared by Oldfield Knott Architects. Figure 7 then shows the same plan in the context of the existing roads and intersections.
- It can be seen in Figure 6 that the modified plan includes a total Shopping Centre floorspace of 4,340 square metres GLA (excluding the amenities and airlock & mall), now located on the eastern side of the site (with service vehicle access off Cocklebidy Gate), plus 2 freestanding buildings for a proposed Child Care Centre (for 72 children) and a Gym (with a proposed internal floor area of 572 square metres) along the Dandaragan Drive road frontage.
- Car park access driveways are proposed off Dandaragan Drive, Bailey Boulevard and Woodstock Avenue, as also shown, together with a 1-way exit onto Cocklebidy Gate to service the proposed 'Click & Collect' pick-up area for the proposed supermarket.
- The proposed plan provides a total of 223 parking spaces, including 6 spaces for the 'Click & Collect' pick-up bays along the southern side of the Supermarket (with 1-way flow out onto Cocklebidy Gate). The plan also identifies a proposed allocation of parking areas for a range of different user groups within the main car park.

### **4.2 FUTURE DAILY TRAFFIC GENERATION AND OVERALL TRAFFIC IMPACT**

- On the basis of the NSW RMS trip generation rate of 121 vehicle trips per day per 100 square metres, together with standard trip generation rates of 3.5 trips per child for the Child Care Centre and 35 trips per 100 square metres for the Gym, it is estimated that the overall modified development will now generate 5,610 vehicle trips per day (including an assumed 20 percent reduction of Child Care and Gym traffic due to linked trips with the Shopping Centre).
- This translates to a total of 602 vehicle trips during the critical PM peak hour.
- The proposed development will therefore generate approximately 10 percent less than the expected trip generation of 6,170 vehicles per day for the currently approved plan (as identified above in Section 3.2), thus ensuring that the overall traffic impact on the broader road network will be less than it would have been under the currently approved plan.
- Figure B.1 in Technical Appendix B shows the estimated future daily traffic flows generated by the proposed development under the modified plan, allocated onto the proposed access driveways and adjacent roads. It can be seen in Figure B.1 that Driveway 1 (off Bailey Boulevard) is now expected to carry 2,960 vehicles per day, while Driveway 2 (off Dandaragan Drive) will carry 1,880 vehicles per day and Driveway 3 (off Woodstock Avenue) will carry 680 vehicles per day. The remaining 90 vehicles per day are expected to use Driveway 2 (off Cocklebidy Gate).

### **4.3 CAR PARK LAYOUT, SERVICING AND PEDESTRIAN/CYCLIST ACCESS**

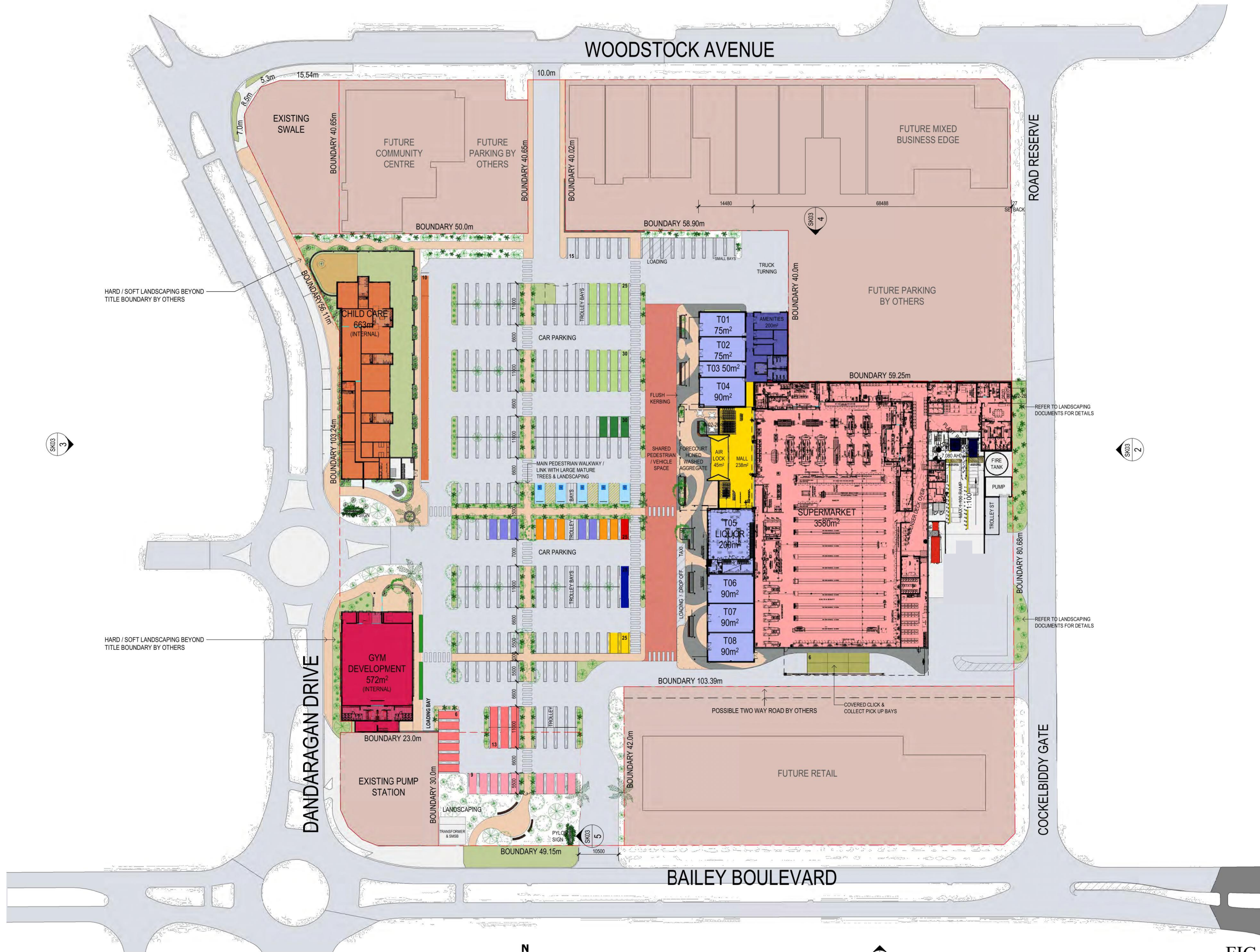
- It can be seen in Figures 6 and 7 that the revised plan now provides a combined overall parking area located centrally between the proposed retail development and the Child Care and Gym developments fronting Dandaragan Drive.

- Parking aisles are orientated to allow shoppers to walk within the aisles towards the Centre, with north-south pedestrian routes to feed pedestrians to/from the main Entry. The resulting pedestrian/cyclist facilities within and adjacent to the site are as shown in Figure B.6 in Chapter B.2 in Technical Appendix B.
- It is noted that the 90-degree bend linking the car park to Driveway 1 (off Bailey Boulevard) is a result of the site boundary in this location. However, recommended modifications are identified in Figure 10 in Chapter 5 Overall Conclusions and Recommendations (with corresponding swept paths in Figure B.12) to ensure good access and circulation within this area.
- The proposed plan also provides a properly designed loading dock and service yard for the proposed Supermarket, with service vehicles now able to access the site via Cocklebidy Gate, as shown in Figures B.7 to B.9 in Chapter B.3 in Technical Appendix B, rather than having to travel via Bailey Boulevard, Dandaragan Drive and Woodstock Avenue under the currently approved plan.
- Service vehicle swept paths for access to the secondary service yard off Woodstock Avenue are then shown in Figures B.10 and B.11 in Technical Appendix B, while swept paths for service vehicles accessing the Gym and Child Care Centre are shown in Figures B.12 and B.13.

#### 4.4 ACCESS DRIVEWAYS AND ADJACENT INTERSECTIONS

- The overall access arrangements for the proposed development are shown in Figures 8 to 12 in Chapter 5 Overall Conclusions and Recommendations.
- In order to allow semi-trailer access to and from the proposed loading dock without having to travel around the perimeter at the site, it is recommended to upgrade the Bailey Boulevard - Cocklebidy Gate intersection as shown in Figure 8 in Chapter 5 (based on swept paths shown in Figure B.7 in Technical Appendix B). This will leave only smaller trucks and vans to access the site via Bailey Boulevard and Woodstock Avenue, to service the Speciality Shops, Child Care Centre and Gym, with no service vehicles to or from the site having to use Dandaragan Drive.
- It is noted that the proposed modifications within Bailey Boulevard at Cocklebidy Gate are required to accommodate semi-trailers turning left out of Cocklebidy Gate, while retaining the existing turn lane length for the right-turn into Cocklebidy Gate.
- It is also noted that semi-trailers already turn right from Bailey Boulevard into Cocklebidy Gate (for petrol-tanker access into the adjacent petrol station), so storage length requirements for the right-turn lane are not changing as a result of this proposed development.
- The recommended layout for access to the proposed loading dock and the adjacent 'Click & Collect' bays is shown in Figure 9 (with swept paths as shown in Figures B.8 and B.9 in Technical Appendix B), noting that the 1-way exit (Driveway 4) onto Cocklebidy Gate could also be upgraded to a 2-way access as part of future development on the adjacent site.
- The proposed new median opening in Bailey Boulevard at Driveway 1 is shown in Figure 10 in Chapter 5, in order to allow full-movement access off Bailey Boulevard, while Figure 11 shows the proposed sign-controlled 4-way intersection at Dandaragan Drive - Balladonia Parade - Driveway 2.
- Figure 12 in Chapter 5 then shows the proposed layout at Woodstock Avenue - Driveway 3, noting that this access will be used by Medium Rigid Vehicles and Rubbish trucks accessing the Speciality Shop service yard in the north-east corner of the site, as well as the Child Care Centre and Gym (as shown in swept path diagrams in Figures B.10 and B.13 in Technical Appendix B).





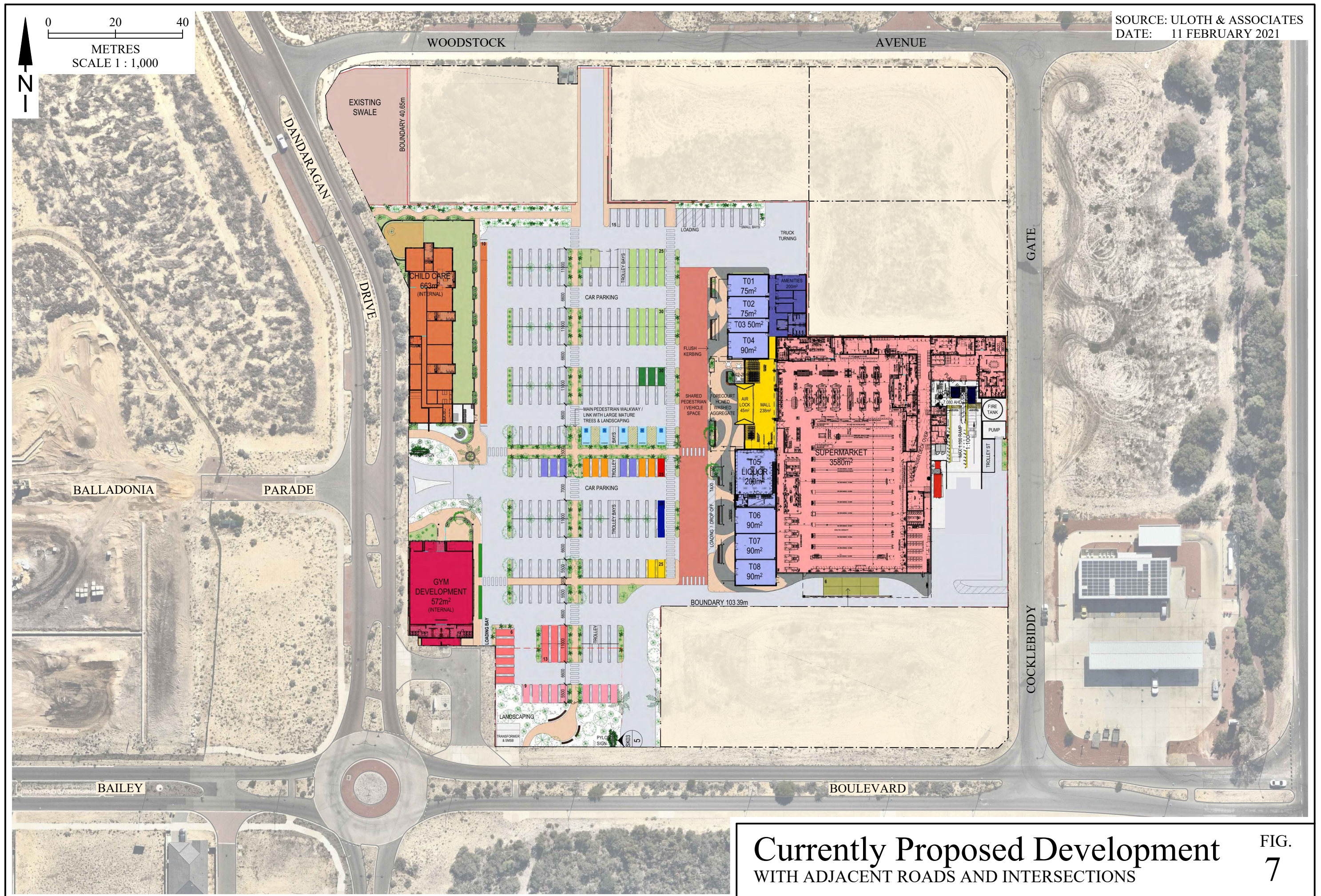
CAR PARK TYPES		
	STANDARD PARKING	148 BAYS
	DISABLED PARKING	5 BAYS
	PARENTS WITH PRAMS PARKING	5 BAYS
	SENIORS PARKING	5 BAYS
	DROP OFF PARKING	3 BAYS
	SHORT TERM PARKING	16 BAYS
	TEAM MEMBER PARKING	9 BAYS
	ELECTRIC PARKING	2 BAYS
	EMERGENCY PARKING	1 BAYS
	CLICK & COLLECT PARKING	6 BAYS
	CHILD CARE	10 BAYS
	GYM DEVELOPMENT	12 BAYS
	MOTORCYCLE PARKING	
TOTAL CAR PARKING BAYS		222 BAYS
EXC: PARKING OUTSIDE BOUNDARY		

AREA SCHEDULE	
SUPERMARKET	3580m²
(SELLING)	(2427m²)
(BACK OF HOUSE)	(1153m²)
LIQUOR STORE	200m²
SPECIALTY SHOPS	580m²
AMENITIES	200m²
AIRLOCK & MALL	280m²
TOTAL COLES BUILDING AREA	4840m²
CHILDCARE (INTERNAL)	663m²
CHILDCARE (EXTERNAL PLAY)	488m²
GYM	572m²
CAR PARKING REQUIREMENTS	
RETAIL = 6 BAYS / 100m²	
SUPERMARKET (EXCL BOH)	(2427 / 100) x 6 = 146 BAYS
LIQUOR STORE	(200 / 100) x 6 = 12 BAYS
SPECIALTY SHOPS	(580 / 100) x 6 = 35 BAYS
GYM = 1 BAY / 35m² (570 / 35) x 1 = 16 BAYS	
CAR PARKING CALCULATIONS AS PER THE CITY OF MANDURAH'S FLORIDA NEIGHBOURHOOD CENTRE OUTLINE DEVELOPMENT PLAN	
TOTAL BAYS REQUIRED =	209 BAYS
TOTAL SITE PARKING PROVIDED =	223 BAYS
(2.8m WIDE x 5.5m LONG BAYS)	
(SURPLUS OF 14 CAR PARKING BAYS)	
NOTE: PARKING CALCULATION FOR "FUTURE RETAIL" NOT INCLUDED	

1 SITE PLAN  
A-02-2B SCALE: 1 : 500

FIG. 6







#### 4.5 INTERSECTION OPERATIONAL ANALYSES

- In response to comments from City of Mandurah, intersection operational (SIDRA) analyses have now been carried out for the access driveways and intersections along Baily Boulevard and Dandaragan Drive. It is important to note, however, that there are no available traffic forecasts for the surrounding development areas. There is also no point carrying out existing traffic counts as the basis for such analyses, since the surrounding areas are not yet fully developed.
- Future traffic flows (excluding the proposed development) have therefore been identified on the basis of the existing road hierarchy classifications under Liveable Neighbourhoods, and the corresponding 'Indicative Maximum Traffic' flows for each road type, which are as follows:
  - Bailey Boulevard, Neighbourhood Connector A: 7,000 vpd
  - Dandaragan Drive, Neighbourhood Connector A: 7,000 vpd
  - Cocklebidy Gate, Access Street C: 3,000 vpd
  - Balladonia Parade, Access Street C: 3,000 vpd
- Future PM peak hour background traffic flows have then been calculated on the basis of the following assumptions (including 2 scenarios for directional flows along each road to ensure that the worst-case scenario is considered at each location):
  - i) Bailey Boulevard, east of Dandaragan Drive:
    - Daily Traffic: 7,000 vehicles per day
    - PM Peak Hour: 840 vehicles per hour (12 percent)
    - Scenario 1: 35/65 eastbound/westbound
    - Scenario 2: 65/35 eastbound/westbound
  - ii) Bailey Boulevard, west of Dandaragan Drive:
    - Daily Traffic: 5,000 vehicles per day
    - PM Peak Hour: 600 vehicles per hour (12 percent)
    - Scenario 1: 35/65 eastbound/westbound
    - Scenario 2: 65/35 eastbound/westbound
  - iii) Dandaragan Drive, north of Bailey Boulevard:
    - Daily Traffic: 7,000 vehicles per day
    - PM Peak Hour: 840 vehicles per hour (12 percent)
    - Scenario 1: 56/64 northbound/southbound
    - Scenario 2: 64/56 northbound/southbound
  - iv) Dandaragan Drive, south of Bailey Boulevard:
    - Daily Traffic: 5,000 vehicles per day
    - PM Peak Hour: 600 vehicles per hour (12 percent)
    - Scenario 1: 65/35 northbound/southbound
    - Scenario 2: 35/65 northbound/southbound
  - v) Cocklebidy Gate:
    - Daily Traffic: 3,000 vehicles per day
    - PM Peak Hour: 360 vehicles per hour (12 percent)
    - Scenario 1: 35/65 northbound/southbound
    - Scenario 2: 65/35 northbound/southbound
    - Distribution: 70% to/from east, 30% to/from west
  - vi) Balladonia Parade, west of Dandaragan Drive:
    - Daily Traffic: 3,000 vehicles per day
    - PM Peak Hour: 360 vehicles per hour (12 percent)
    - Scenario 1: 65/35 eastbound/westbound
    - Scenario 2: 35/65 eastbound/westbound
    - Distribution: 60% to/from south, 40% to/from north
- The resulting PM peak hour background traffic flows (excluding the proposed development) are therefore as shown in Figures B.2 and B.3 in Chapter B.1 in Technical Appendix B, while the



corresponding total future traffic flows (including the proposed development) are as shown in Figures B.4 and B.5.

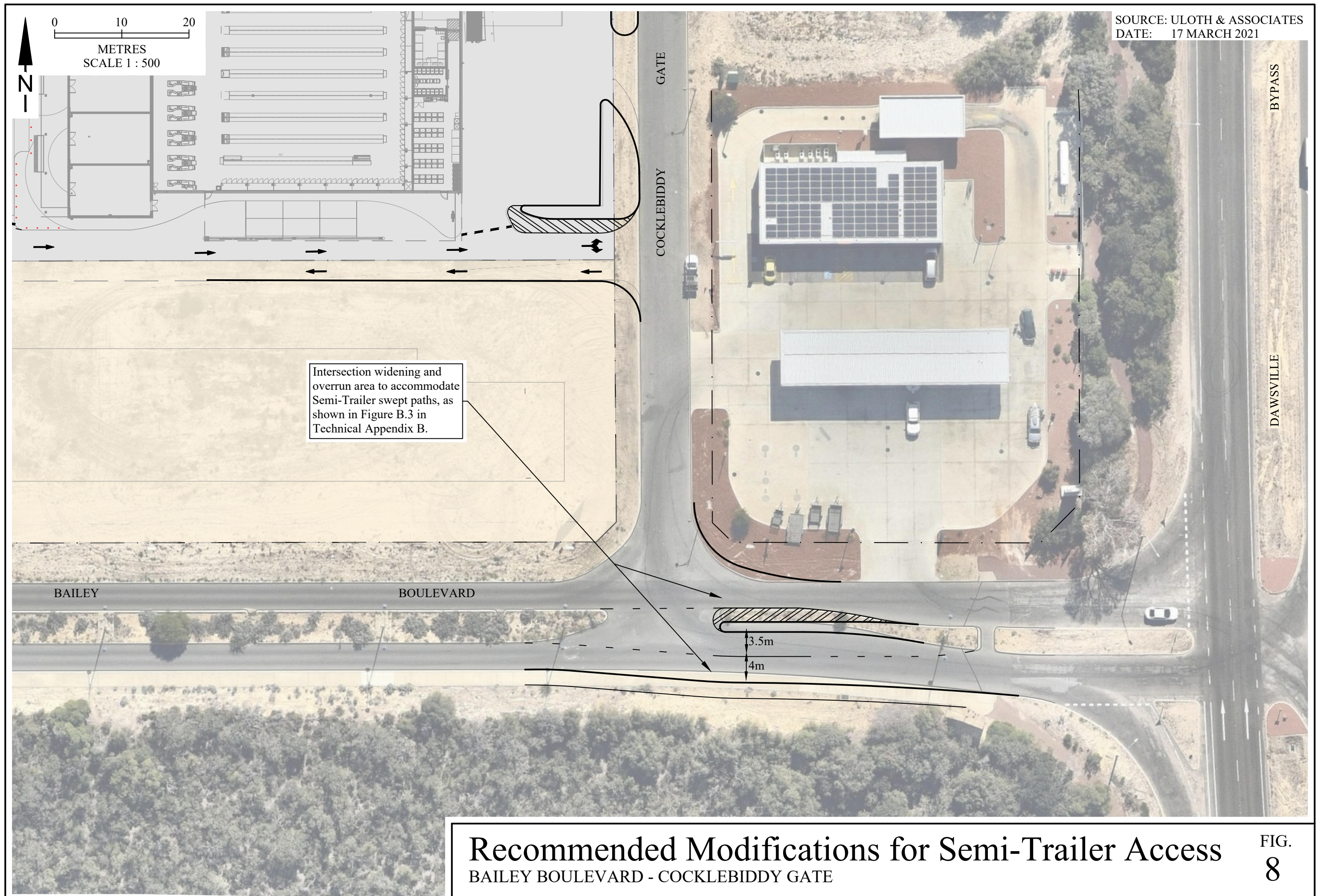
- Tables B.1 to B.4 in Chapter B.1 then show the resulting PM peak hour intersection operational (SIDRA) outputs for the key intersections along both Bailey Boulevard and Dandaragan Drive, confirming that each of the intersections will operate at acceptable Levels of Service B and C during the critical PM peak hour, under either of the 2 traffic scenarios.
- It is therefore confirmed that the proposed access arrangements identified in Figures 8 to 12 in Chapter 5 are acceptable.

## 5. OVERALL CONCLUSIONS AND RECOMMENDATIONS

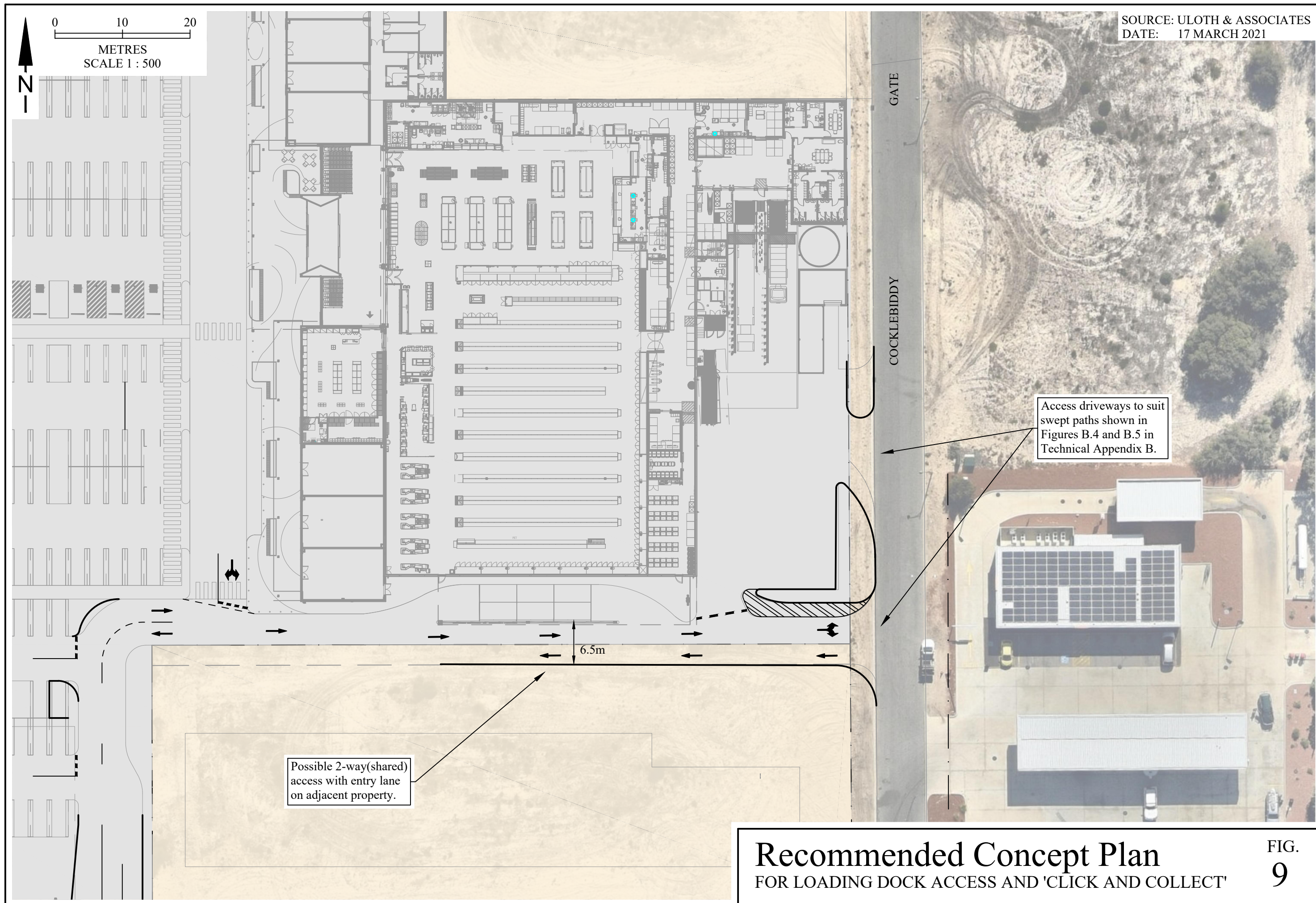
The overall conclusions and recommendations regarding the proposed new plans for Lot 924 Dandaragan Drive are drawn from the analysis and discussions documented above in Chapters 2 to 4, together with the additional data presented in the Technical Appendices, as follows:

- The proposed floorspace under the revised development plan is less the floorspace identified within the previously approved plan. Even with inclusion of traffic generated by the proposed Child Care Centre and Gym, the overall traffic generation is approximately 10 percent less than the traffic generation of the currently approved development.
- The overall access locations for the site are generally the same as under the currently approved plan, except that the northern access (Driveway 3) off Woodstock Avenue is now proposed to access the overall car park, rather than just the previous loading dock, and Driveway 4 (off Cocklebiddy Gate) is instead proposed as an 'exit only', to be used primarily for 'Click & Collect' customers and service vehicles.
- The revised site plan also provides a more efficient car park layout, with improved pedestrian/cyclist connectivity, as shown in Figure B.6 in Technical Appendix B.
- The recommended intersection upgrades and access arrangements are shown in Figures 8 to 12, as follows:
  - It is recommended to upgrade the Bailey Boulevard - Cocklebiddy Gate intersection, as shown in Figure 8, in order to accommodate semi-trailer access to and from the proposed loading dock.
  - The recommended loading dock access, together with the 1-way exit from the proposed 'Click & Collect' pick-up area, is shown in Figure 9.
  - It is recommended to provide a new median opening at Bailey Boulevard - Driveway 1, as shown in Figure 10, in order to provide full-movement access directly off Bailey Boulevard.
  - It is also recommended to provide all-movement access off Dandaragan Drive via Driveway 2, resulting in a sign-controlled 4-way intersection at Balladonia Crescent, as shown in Figure 11.
  - The recommended access (Driveway 3) off Woodstock Avenue is then shown in Figure 12, together with minor car park modifications adjacent to the secondary service yard, noting that rubbish trucks and other (medium-sized) service vehicles will access the site via Driveway 3.

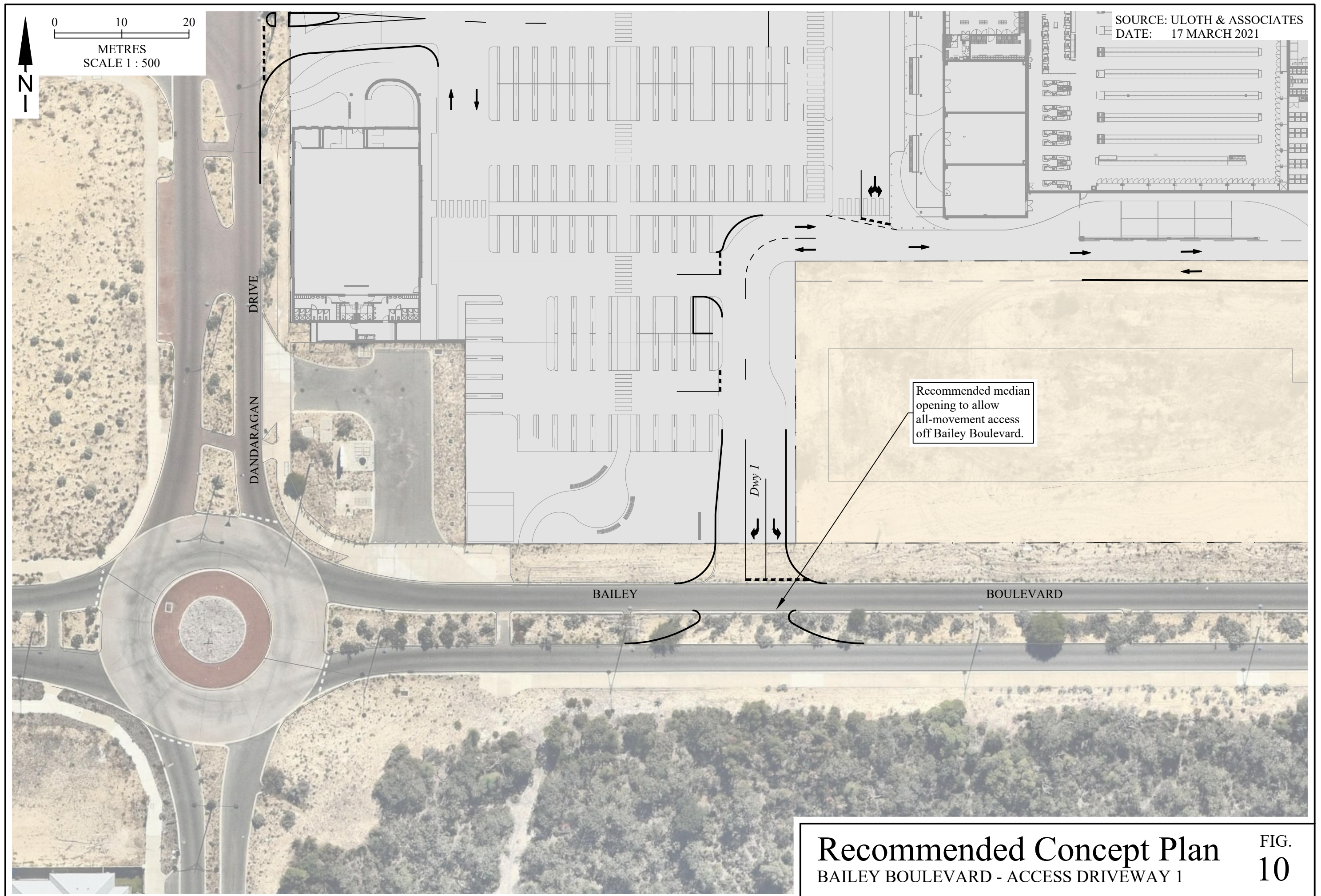




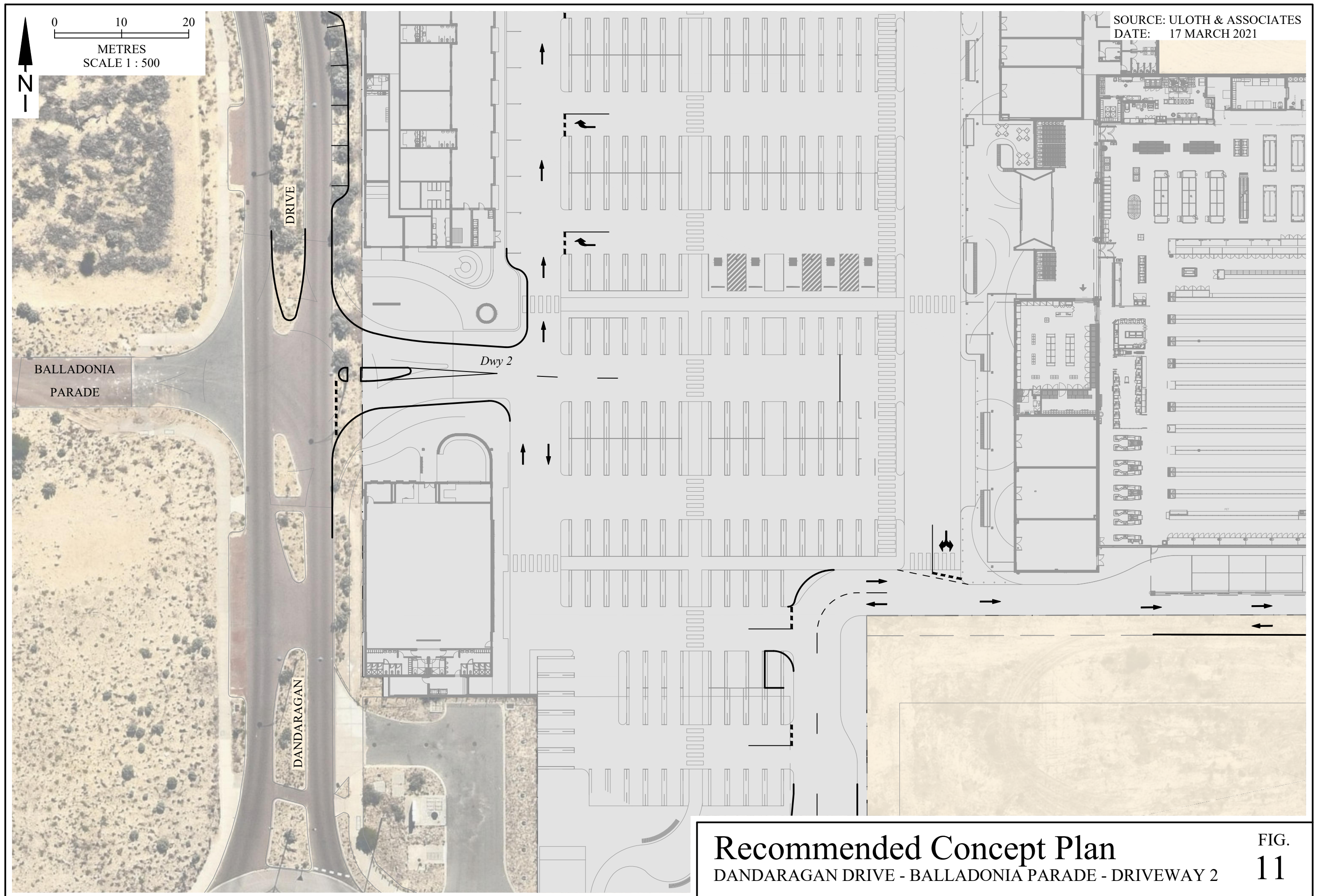




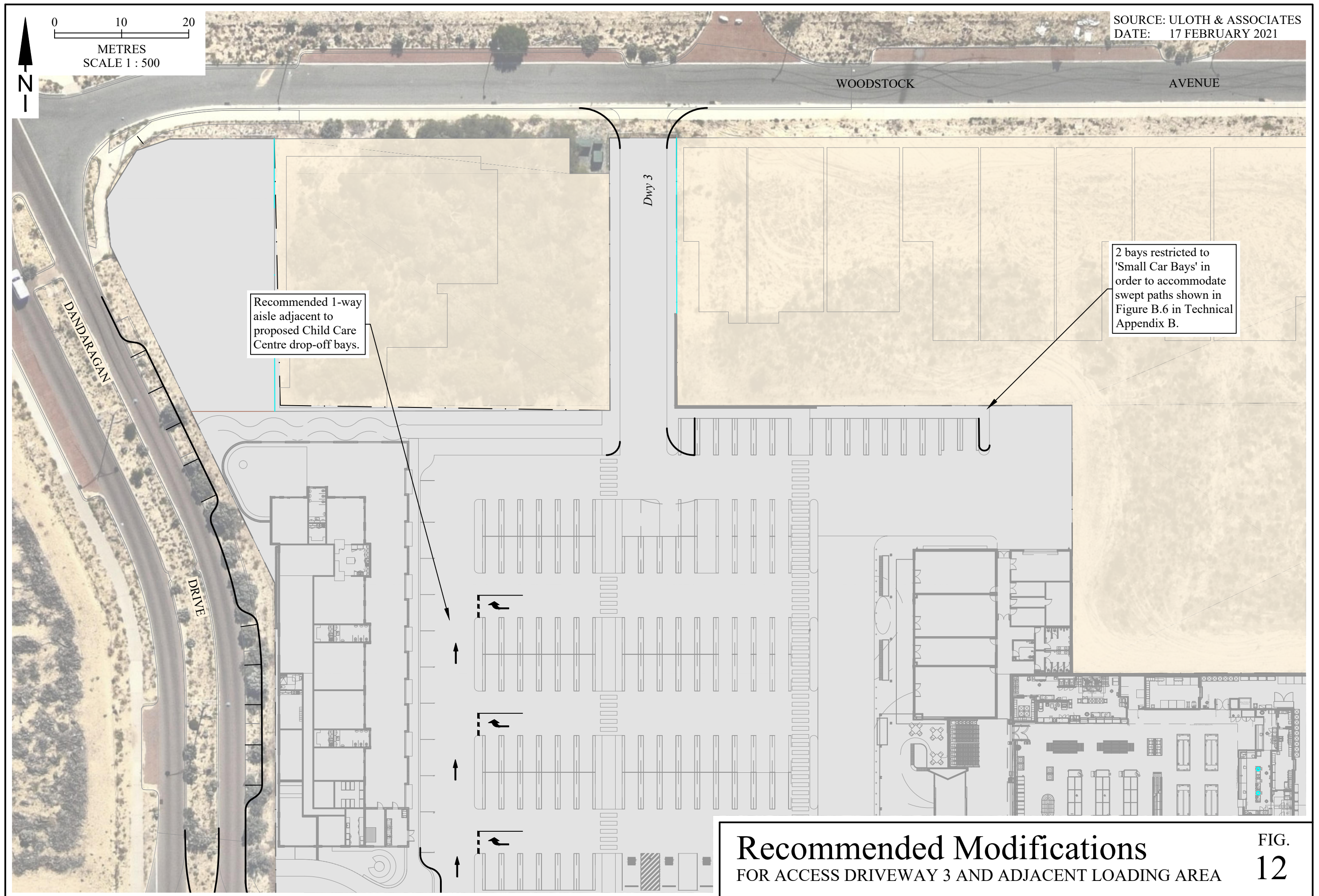












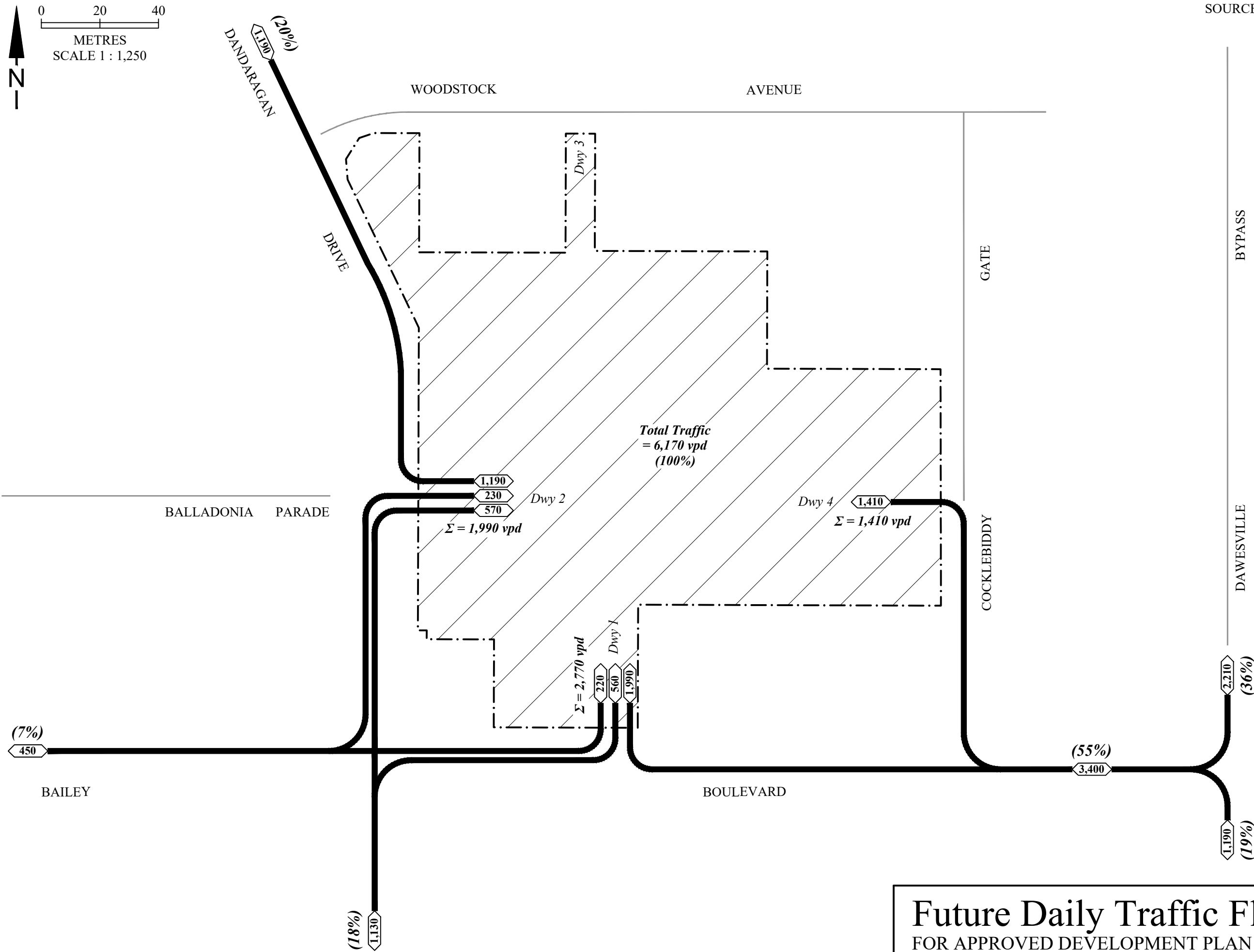
## **TECHNICAL APPENDIX A - CURRENTLY APPROVED PLAN**

Future traffic flows and swept paths for service vehicles under the currently approved development plan are documented within Technical Appendix A.



## **A.1 FUTURE TRAFFIC FLOWS FOR APPROVED PLAN**

Figure A.1 shows the anticipated future traffic flows generated by the currently approved development, as discussed above in Section 4.2.



**Future Daily Traffic Flows**  
FOR APPROVED DEVELOPMENT PLAN

FIG.  
**A.1**

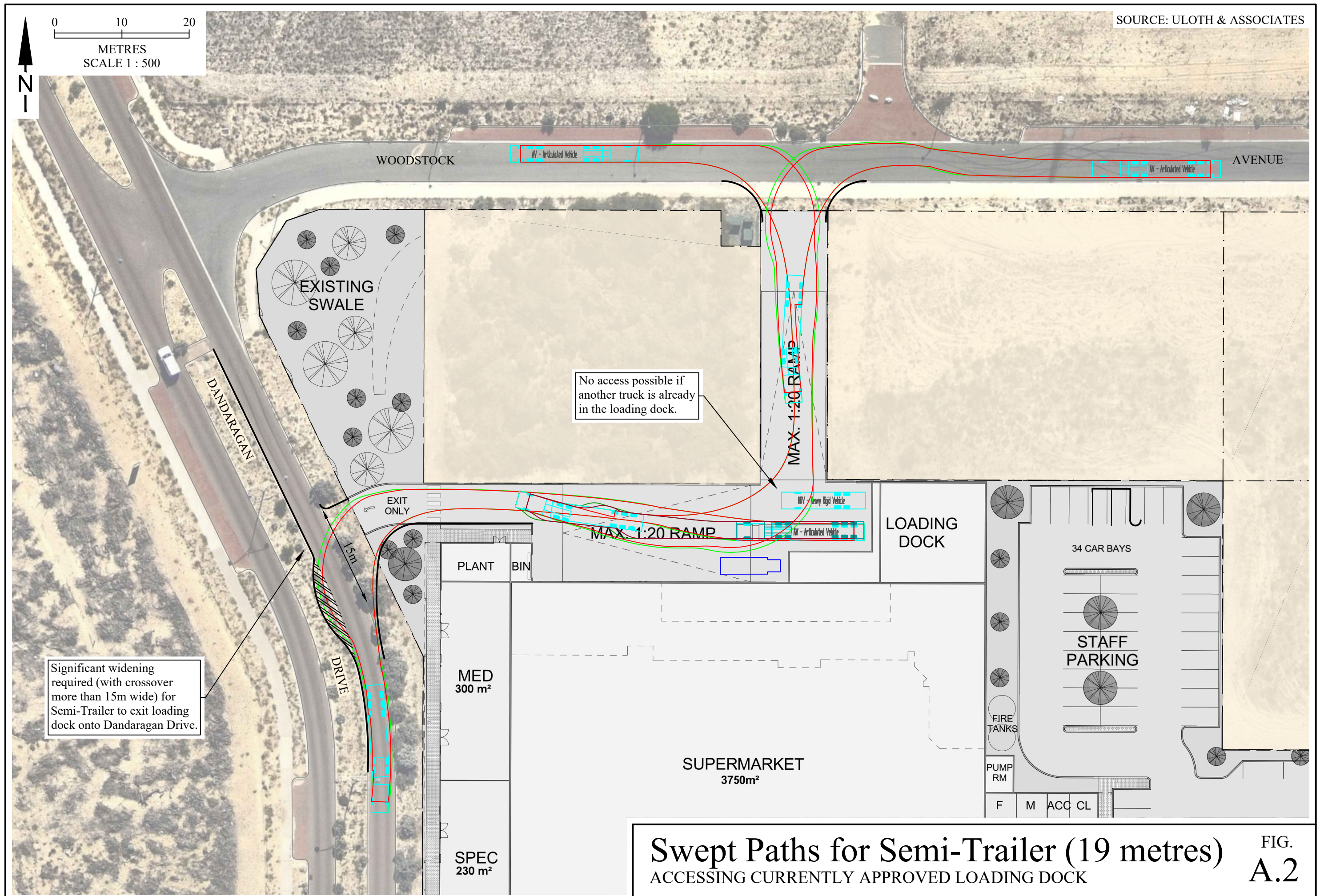
## **A.2 SERVICE VEHICLE SWEPT PATHS FOR THE APPROVED PLAN**

Figure A.2 shows the swept paths for a 19.0 metre Semi-Trailer accessing the proposed supermarket loading dock under the currently approved Development Plan. The plan shows that the Semi-Trailer can only access the loading dock if there is no other vehicle within the dock.

It can also be seen in Figure A.2 that the swept path for Semi-Trailers exiting the approved loading dock would result in an extremely wide crossover (of at least 15 metres) onto Dandaragan Drive, resulting in a very poor streetscape for pedestrians and/or on-street parking.

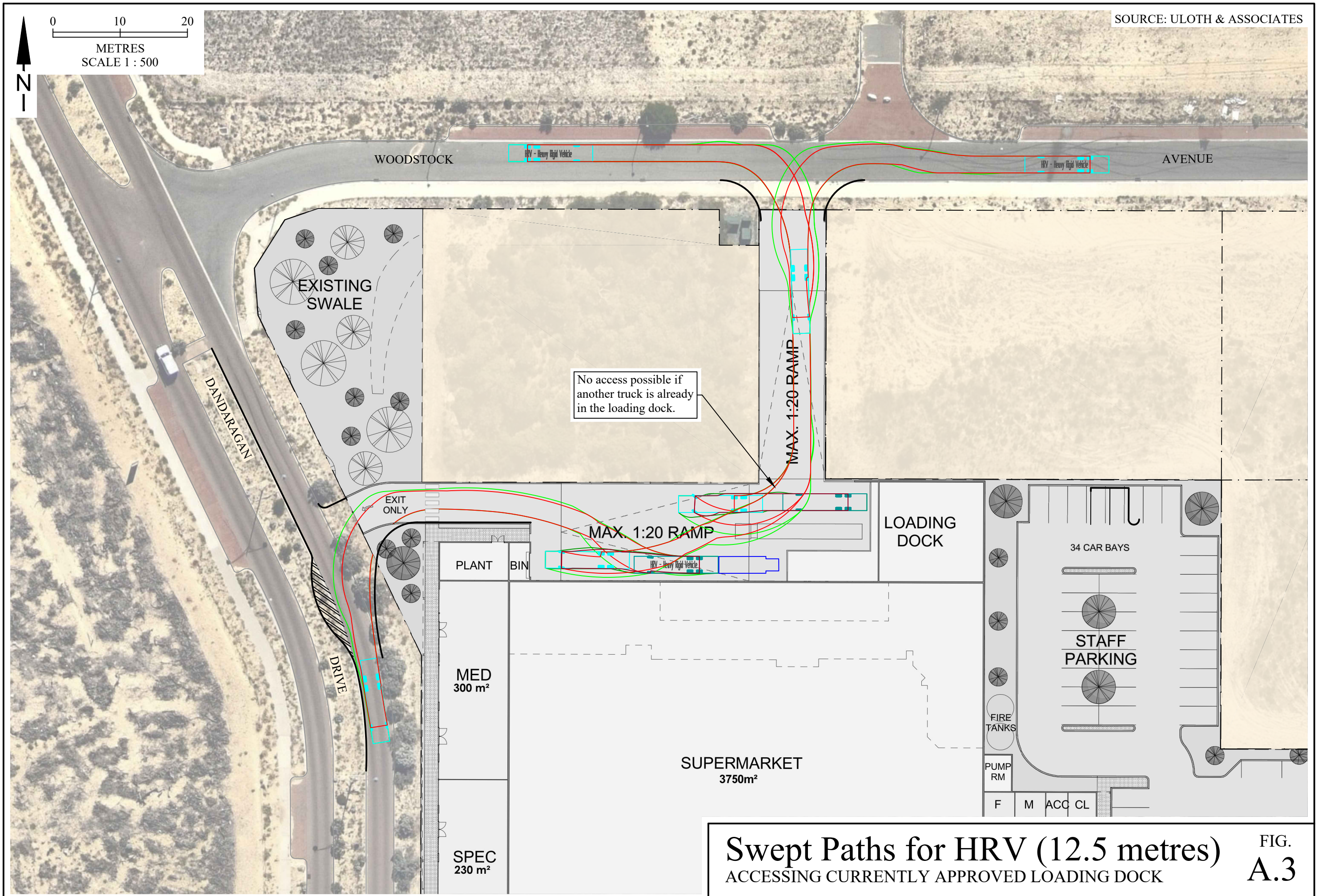
Figure A.3 then shows the swept paths for a 12.5 metre Heavy Rigid Vehicle accessing the approved loading dock. It can be seen in Figure A.3 that no other trucks will be able to access the approved loading dock when a Semi-Trailer is already in the dock unloading, thereby confirming that the proposed loading dock arrangement under the currently approved plan is inefficient and unviable.





**Swept Paths for Semi-Trailer (19 metres)**  
ACCESSING CURRENTLY APPROVED LOADING DOCK





**Swept Paths for HRV (12.5 metres)**  
ACCESSING CURRENTLY APPROVED LOADING DOCK



## **TECHNICAL APPENDIX B - REVISED DEVELOPMENT APPLICATION**

Technical Appendix B documents the revised future traffic flows expected to occur under the now proposed development plan, the required intersection operational analysis, and the updated swept path diagrams for service vehicles accessing the site.

## B.1 FUTURE TRAFFIC FLOWS FOR MODIFIED PLAN

Figure B.1 shows the anticipated future daily traffic flows for the modified site plan and access arrangement reflected within the currently proposed Development Application.

Figures B.2 and B.3 then show the future PM peak hour background traffic flows under 2 possible scenarios, as discussed above in Section 4.5, while Figures B.4 and B.5 show the corresponding future PM peak hour total traffic flows (including the proposed development).

Tables B.1 to B.4 then show the future PM peak hour intersection operational (SIDRA) analyses for the critical intersections along Bailey Boulevard and Dandaragan Drive, confirming that each of the proposed intersections will operate at acceptable Levels of Service B and C during the critical PM peak hour.

TABLE B.1  
OPERATIONAL CHARACTERISTICS FOR UNSIGNALISED BAILEY BOULEVARD -  
COCKLEBIDDY GATE JUNCTION – WITH PROPOSED SHOPPING CENTRE DEVELOPMENT  
FUTURE PM PEAK HOUR UNDER 2 POSSIBLE SCENARIOS

ITEMS	OPERATIONAL CHARACTERISTICS											
	Scenario 1						Scenario 2					
No. of Approach Lanes: N E S W Max X Value	1 2 - 1 0.411						1 2 - 1 0.518					
Approach	Move- ment	X- Value	Max. Queue		Avrge Delay (sec)	Level of Serv.	Move- ment	X- Value	Max. Queue		Avrge Delay (sec)	Level of Serv.
			Veh.	m					Veh.	m		
Cocklebidy Gate - north	LR	<u>0.411</u>	0.9	7	14.8	B	LR	0.152	0.3	2	12.0	B
Bailey Boulevard - east	T	0.210	0.0	0	0.1	A	T	<u>0.362</u>	0.0	0	0.1	A
	R	0.199	0.0	0	12.0	B	R	0.518	0.0	0	9.2	A
Bailey Boulevard - west	LT	0.379	0.0	0	0.3	A	LT	0.244	0.0	0	0.7	A

Notes: Level of Service calculations are based on Average Delay.  
Underlined X-values denote maximum values.

Source: Uloth and Associates

TABLE B.2  
OPERATIONAL CHARACTERISTICS FOR UNSIGNALISED BAILEY BOULEVARD -  
DRIVEWAY 1 JUNCTION – WITH PROPOSED SHOPPING CENTRE DEVELOPMENT  
FUTURE PM PEAK HOUR UNDER 2 POSSIBLE SCENARIOS

ITEMS	OPERATIONAL CHARACTERISTICS											
	Scenario 1						Scenario 2					
No. of Approach Lanes: N E S W Max X Value	2 1 - 1 0.337						2 1 - 1 0.435					
Approach	Move- ment	X- Value	Max. Queue		Avrge Delay (sec)	Level of Serv.	Move- ment	X- Value	Max. Queue		Avrge Delay (sec)	Level of Serv.
			Veh.	m					Veh.	m		
Driveway 1 - north	L	0.109	0.2	1	6.8	A	L	0.081	0.1	1	5.6	A
	R	0.112	0.2	1	15.5	C	R	0.067	0.1	1	11.9	B
Bailey Boulevard - east	TR	0.263	0.0	0	11.1	B	TR	<u>0.435</u>	0.0	0	8.1	A
Bailey Boulevard - west	LT	<u>0.337</u>	0.0	0	4.1	A	LT	0.201	0.0	0	4.1	A

Notes: Level of Service calculations are based on Average Delay.  
Underlined X-values denote maximum values.

Source: Uloth and Associates

TABLE B.3  
OPERATIONAL CHARACTERISTICS FOR BAILEY BOULEVARD - DANDARAGAN DRIVE  
SINGLE LANE ROUNDABOUT – WITH PROPOSED SHOPPING CENTRE DEVELOPMENT  
FUTURE PM PEAK HOUR UNDER 2 POSSIBLE SCENARIOS

ITEMS	OPERATIONAL CHARACTERISTICS											
	Scenario 1						Scenario 2					
No. of Approach Lanes: N E S W	1 1 1 1						1 1 1 1					
Max X Value	0.575						0.723					
Avrge Delay (sec)	8.9						8.8					
Level of Service	A						A					
Approach	Move- ment	X- Value	Max. Queue		Avrge Delay (sec)	Level of Serv.	Move- ment	X- Value	Max. Queue		Avrge Delay (sec)	Level of Serv.
			Veh.	m					Veh.	m		
Dandaragan Drive - north	LTR	0.535	1.8	14	8.5	A	LTR	0.521	1.6	13	6.2	A
Bailey Boulevard - east	LTR	0.383	1.1	8	6.7	A	LTR	<u>0.723</u>	3.7	29	11.5	B
Dandaragan Drive - south	LTR	0.518	1.7	14	9.2	A	LTR	0.397	1.2	9	9.9	A
Bailey Boulevard - west	LTR	<u>0.575</u>	2.2	17	10.8	B	LTR	0.276	0.7	5	6.6	A

Notes: Level of Service calculations are based on Average Delay.  
Underlined X-values denote maximum values.

Source: Uloth and Associates



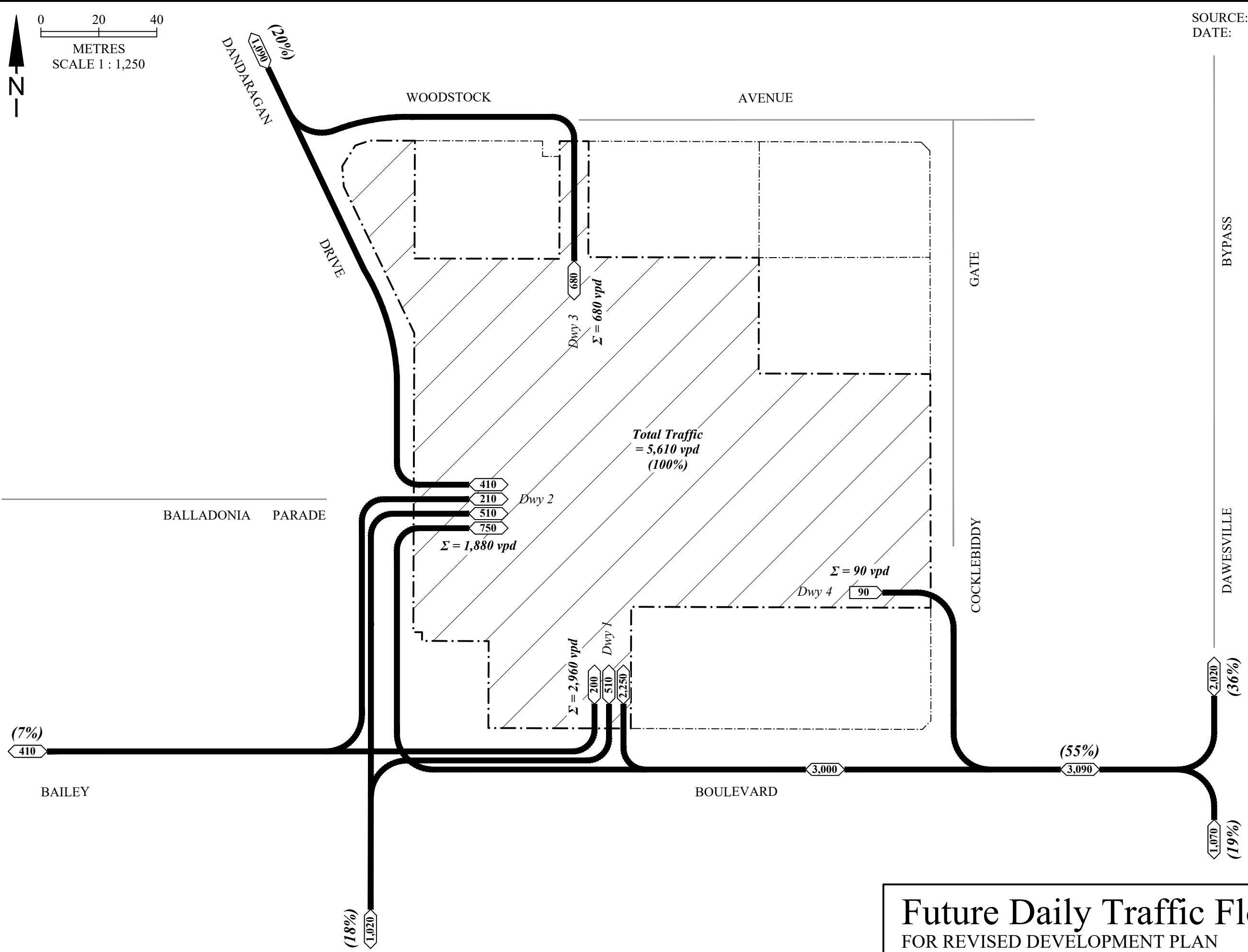
TABLE B.4  
 OPERATIONAL CHARACTERISTICS FOR UNSIGNALISED DANDARAGAN DRIVE -  
 BALLADONIA PARADE - DRIVEWAY 2 4-WAY INTERSECTION  
 WITH PROPOSED SHOPPING CENTRE DEVELOPMENT  
 FUTURE PM PEAK HOUR UNDER 2 POSSIBLE SCENARIOS

ITEMS	OPERATIONAL CHARACTERISTICS											
	Scenario 1						Scenario 2					
No. of Approach Lanes: N E S W Max X Value	1 1 1 1 0.549						1 1 1 1 0.280					
Approach	Move- ment	X- Value	Max. Queue		Avrge Delay (sec)	Level of Serv.	Move- ment	X- Value	Max. Queue		Avrge Delay (sec)	Level of Serv.
			Veh.	m					Veh.	m		
Dandaragan Drive - north	L	0.162	0.0	0	4.6	A	L	<u>0.280</u>	0.0	0	4.7	A
	T	0.162	0.0	0	0.0	A	T	<u>0.280</u>	0.0	0	0.1	A
	R	0.162	0.0	0	7.4	A	R	<u>0.280</u>	0.0	0	7.1	A
Driveway 2 - east	L	0.138	0.2	2	9.7	A	L	0.173	0.3	2	10.7	B
	T	0.138	0.2	2	15.8	C	T	0.173	0.3	2	19.6	C
	R	0.138	0.2	2	17.5	C	R	0.173	0.3	2	20.4	C
Dandaragan Drive - south	L	0.311	0.0	0	4.5	A	L	0.252	0.0	0	4.5	A
	T	0.311	0.0	0	0.0	A	T	0.252	0.0	0	0.0	A
	R	0.311	0.0	0	7.6	B	R	0.252	0.0	0	9.5	A
Balladonia Parade - west	L	<u>0.549</u>	1.3	10	13.9	B	L	0.229	0.4	3	8.9	A
	T	<u>0.549</u>	1.3	10	23.3	C	T	0.229	0.4	3	18.2	C
	R	<u>0.549</u>	1.3	10	23.7	C	R	0.229	0.4	3	17.9	C

Notes: Results are presented on a turning movement basis, rather than lane-by-lane.  
 Level of Service calculations are based on Average Delay.  
 Underlined X-values denote maximum values.

Source: Uloth and Associates



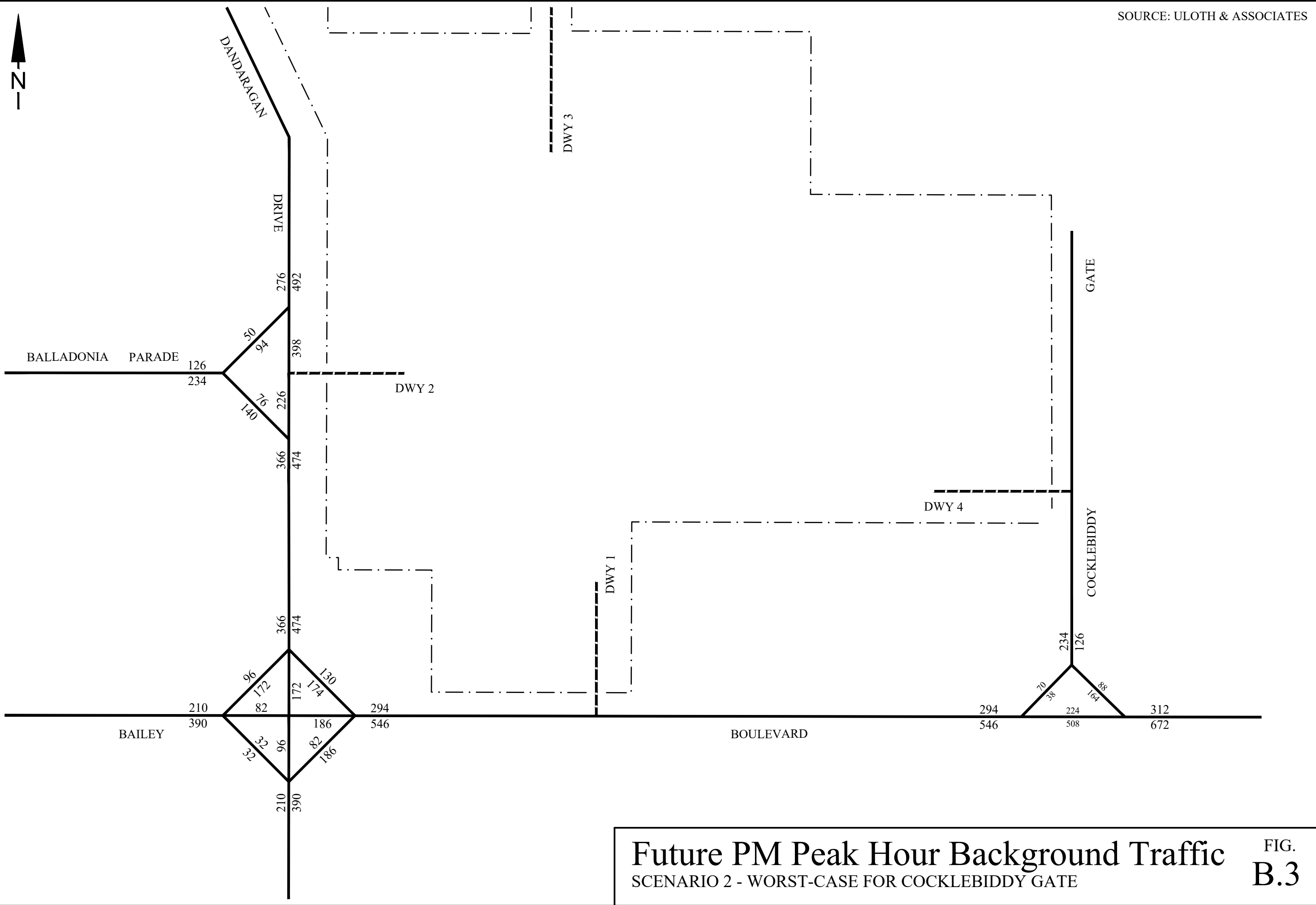


Future Daily Traffic Flows  
FOR REVISED DEVELOPMENT PLAN

FIG. B.1







Future PM Peak Hour Background Traffic  
SCENARIO 2 - WORST-CASE FOR COCKLEBIDDY GATE

FIG.  
B.3

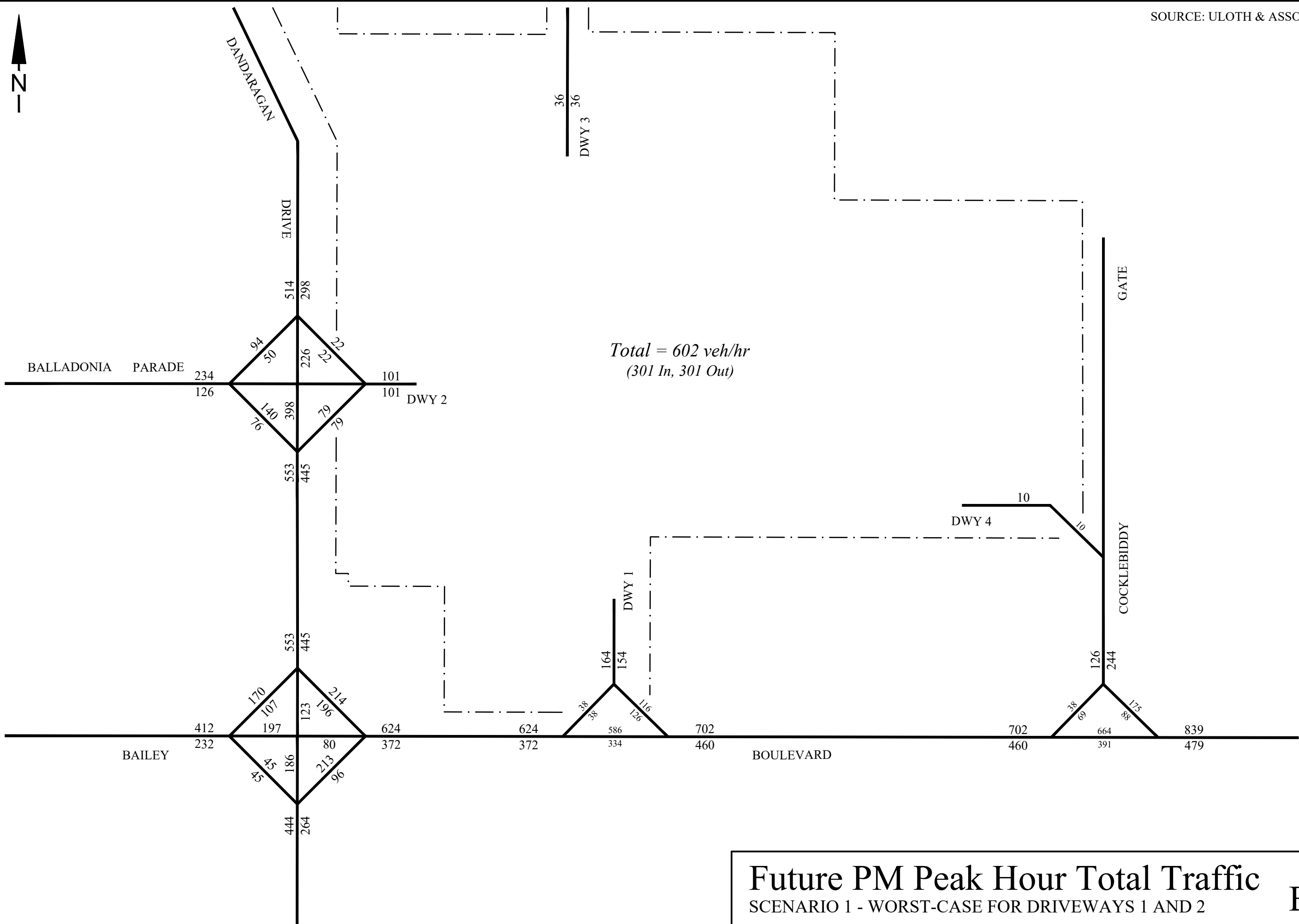
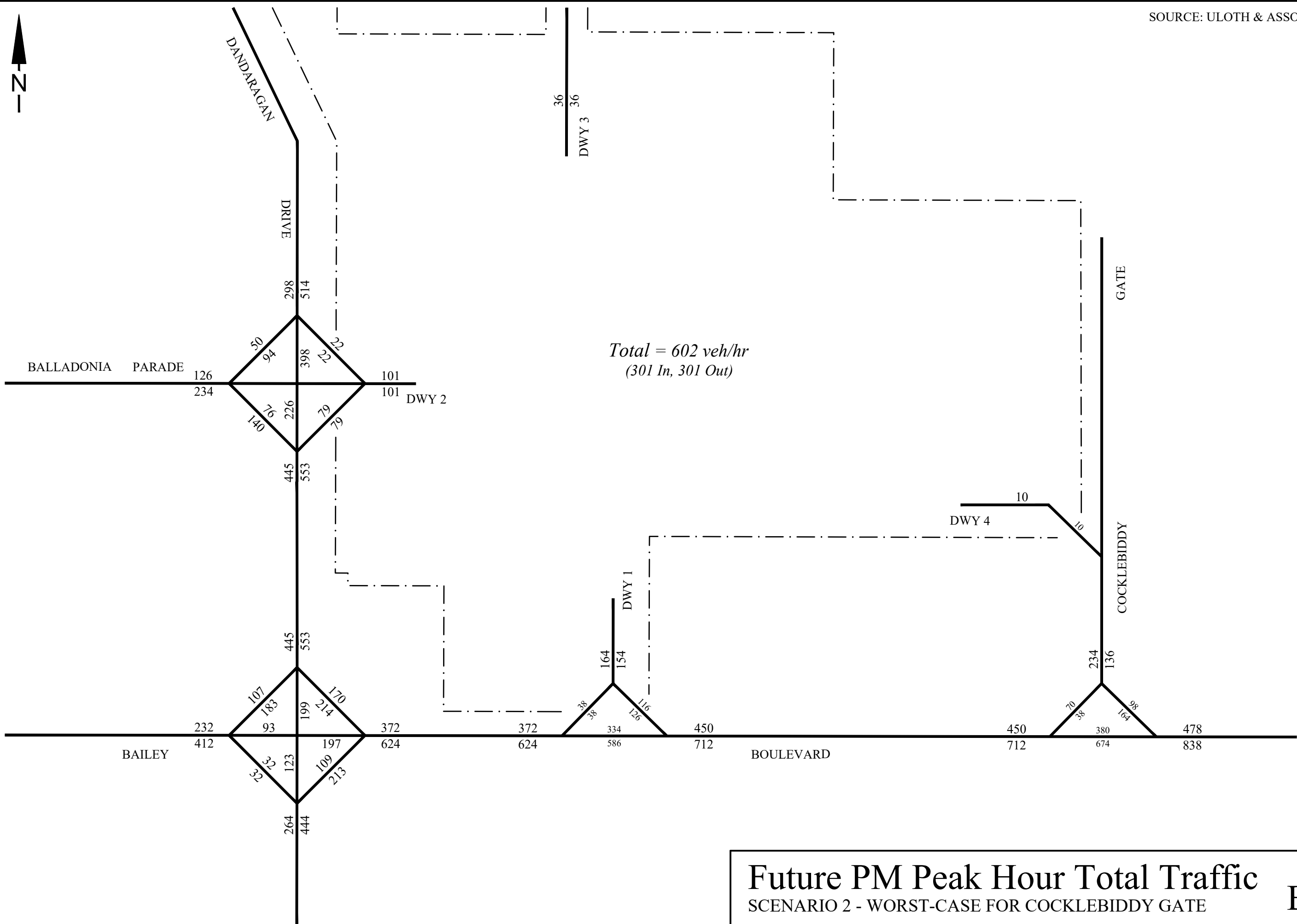


FIG. B.4

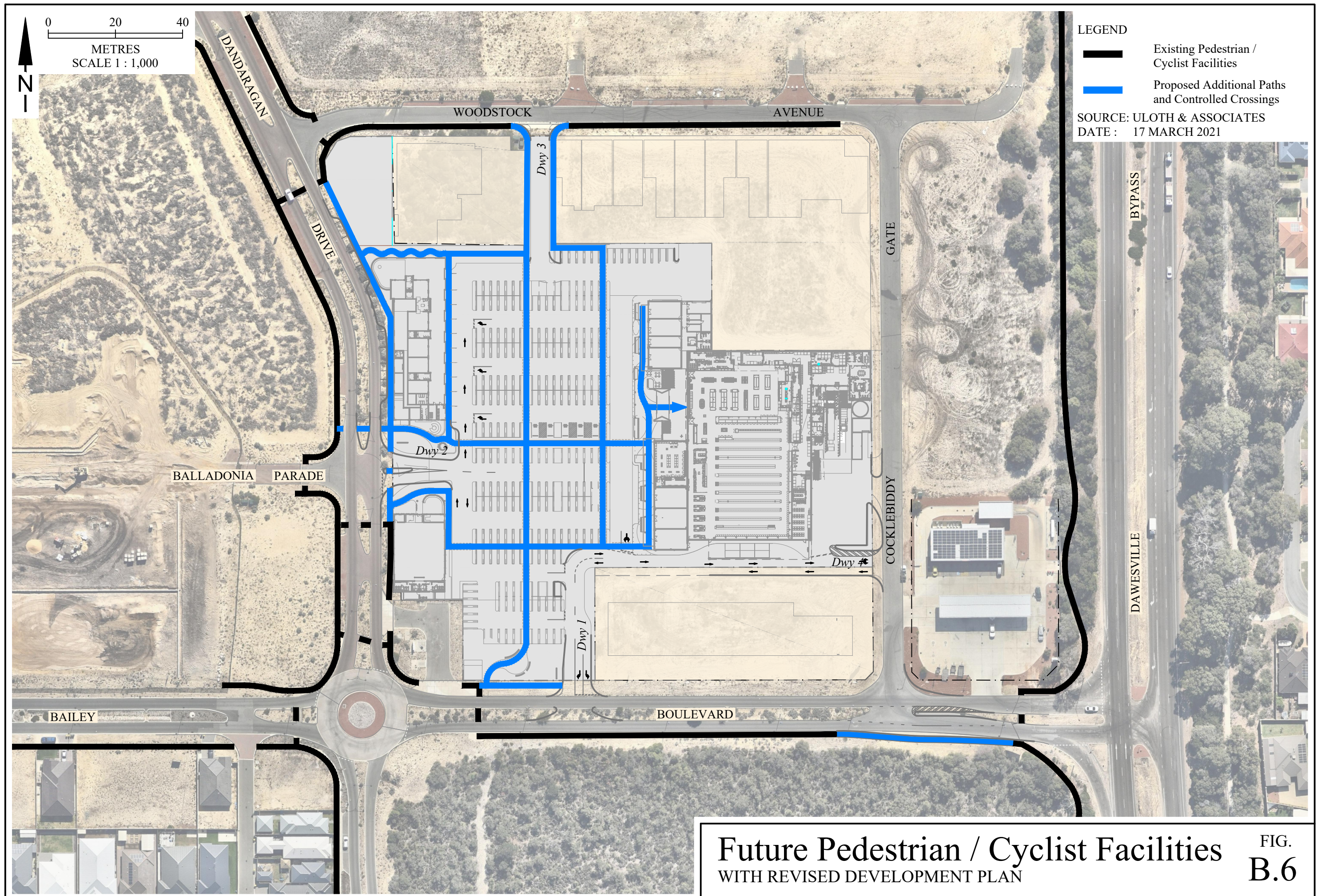




## **B.2 PEDESTRIAN/CYCLIST FACILITIES**

Figure B.6 shows the future pedestrian/cyclist facilities available for access to the proposed development under the currently proposed plan, taking into account the recommended access modifications identified in Figures 8 to 12 in Chapter 5.





Future Pedestrian / Cyclist Facilities  
WITH REVISED DEVELOPMENT PLAN

FIG.  
B.6



### **B.3 SERVICE VEHICLE SWEPT PATHS FOR MODIFIED PLAN**

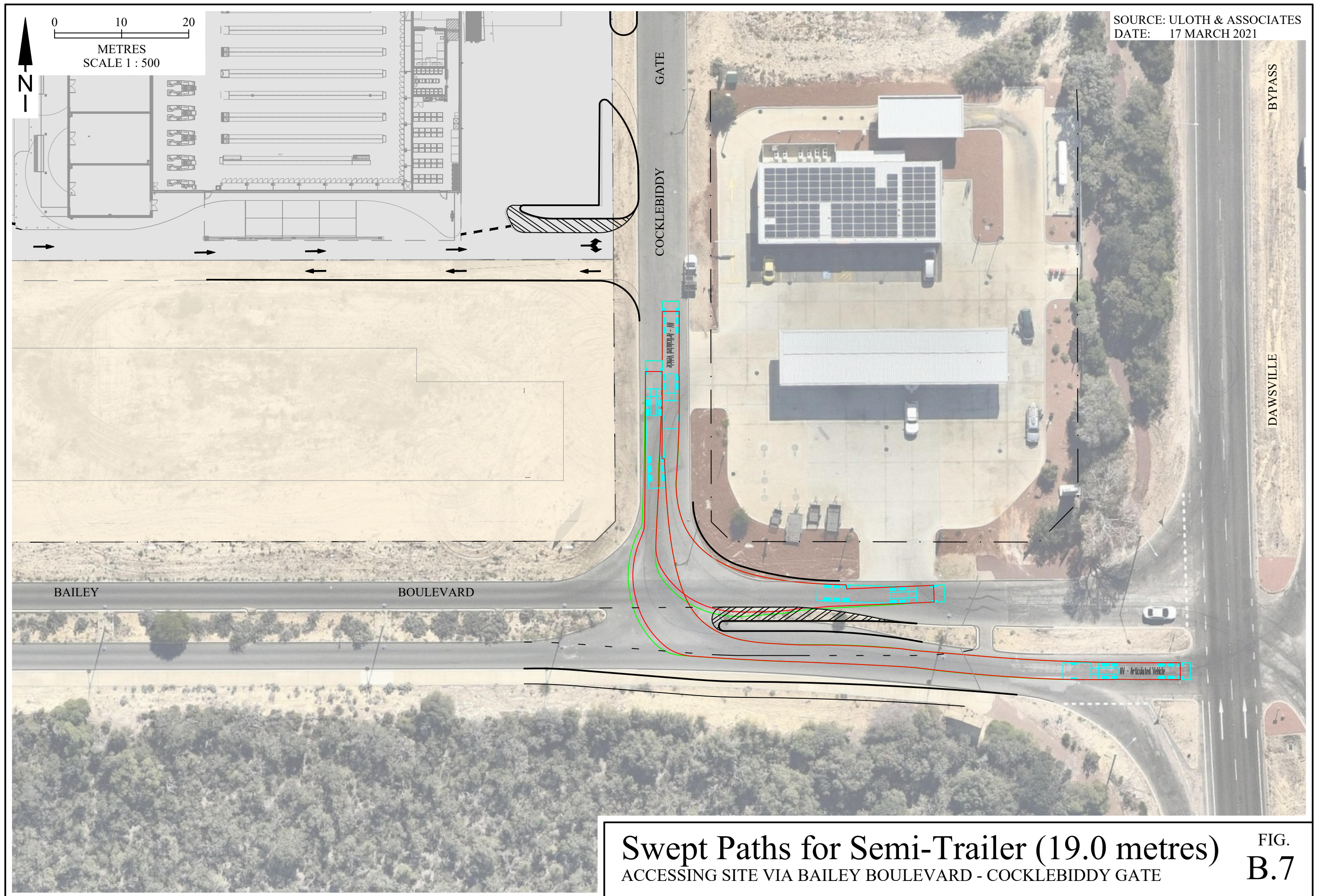
Figure B.7 shows the swept paths for a 19 metre Semi-Trailer accessing the proposed development site via the Bailey Boulevard - Cocklebidy Gate unsignalised intersection, while Figure B.8 shows the Semi-Trailer accessing the proposed Supermarket loading dock under the modified plan.

Figure B.9 then shows the swept paths for a 12.5 metre Heavy Rigid Vehicle accessing both the loading dock itself and the proposed Compactor.

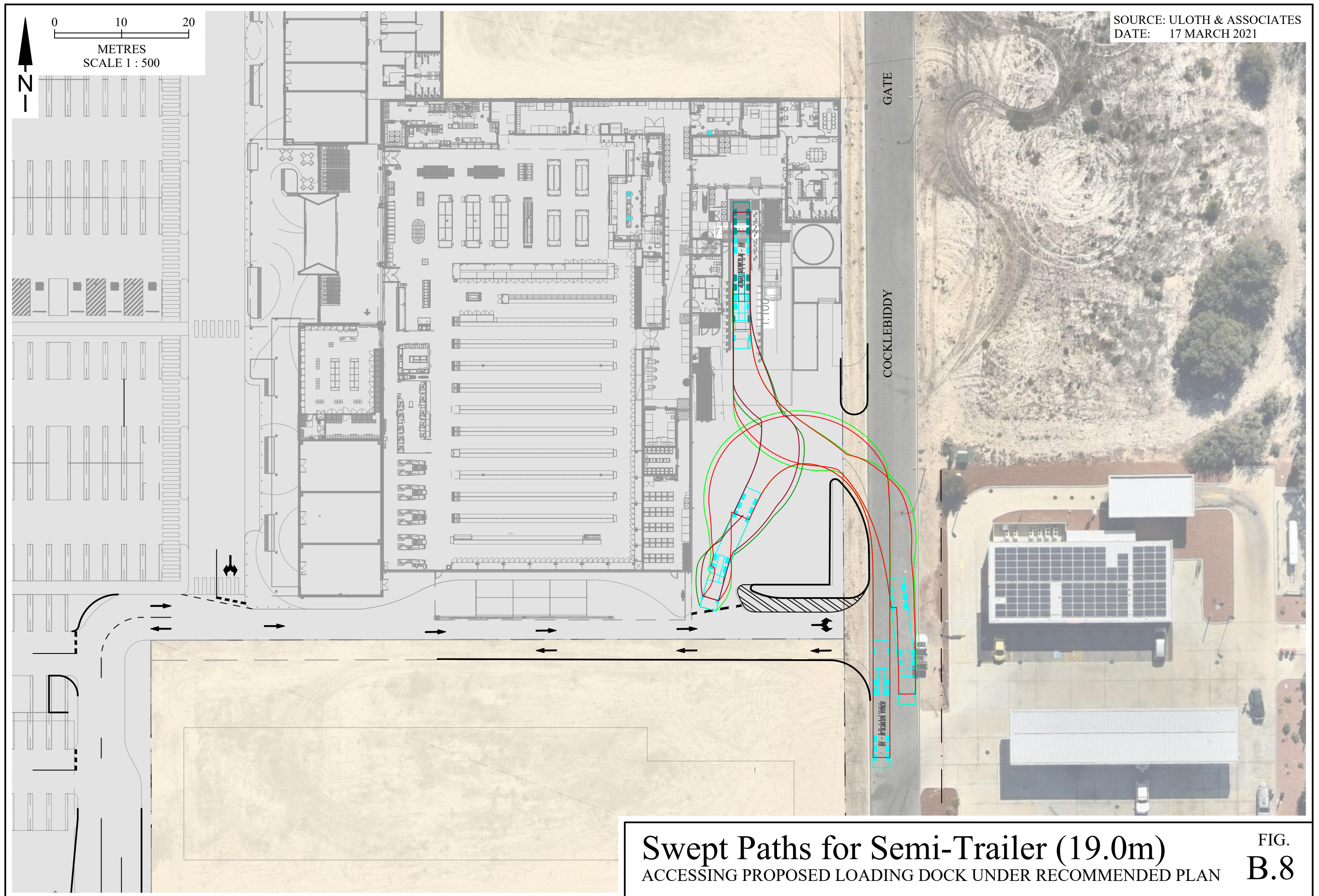
Figure B.10 shows the swept paths for a 10-metre Rubbish truck accessing the proposed secondary loading area off Woodstock Avenue, including minor modifications to 2 adjacent parking spaces, while Figure B.11 shows an 8.8 metre Medium Rigid Vehicle at the same location.

Figure B.12 then shows the swept paths for a 8.8 metre Medium Rigid Vehicle accessing the Bin Store for the proposed Gym, while Figure B.13 shows the swept paths for the same vehicle accessing the proposed Child Care Centre.











SOURCE: ULOTH & ASSOCIATES  
DATE: 17 MARCH 2021

