



Member of the Surbana Jurong Group



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Transport Assessment Report

William Hovell Drive Duplication

Reference No. 3002750

Prepared for Infrastructure Delivery Partners on behalf of Transport Canberra and City Services

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1 Introduction

The 4.5-kilometre section of William Hovell Drive (WHD) between John Gorton Drive (JGD) and Drake Brockman Drive (DBD) is the only remaining unduplicated portion of the road. It is subject to traffic congestion, particularly during the AM and PM peaks. This congestion will increase as the Molonglo Valley, the estate of Ginninderry (West Belconnen) and the new suburbs of Strathnairn and Macnamara continue to develop and generate traffic. Figure 1 depicts the locality of the project.

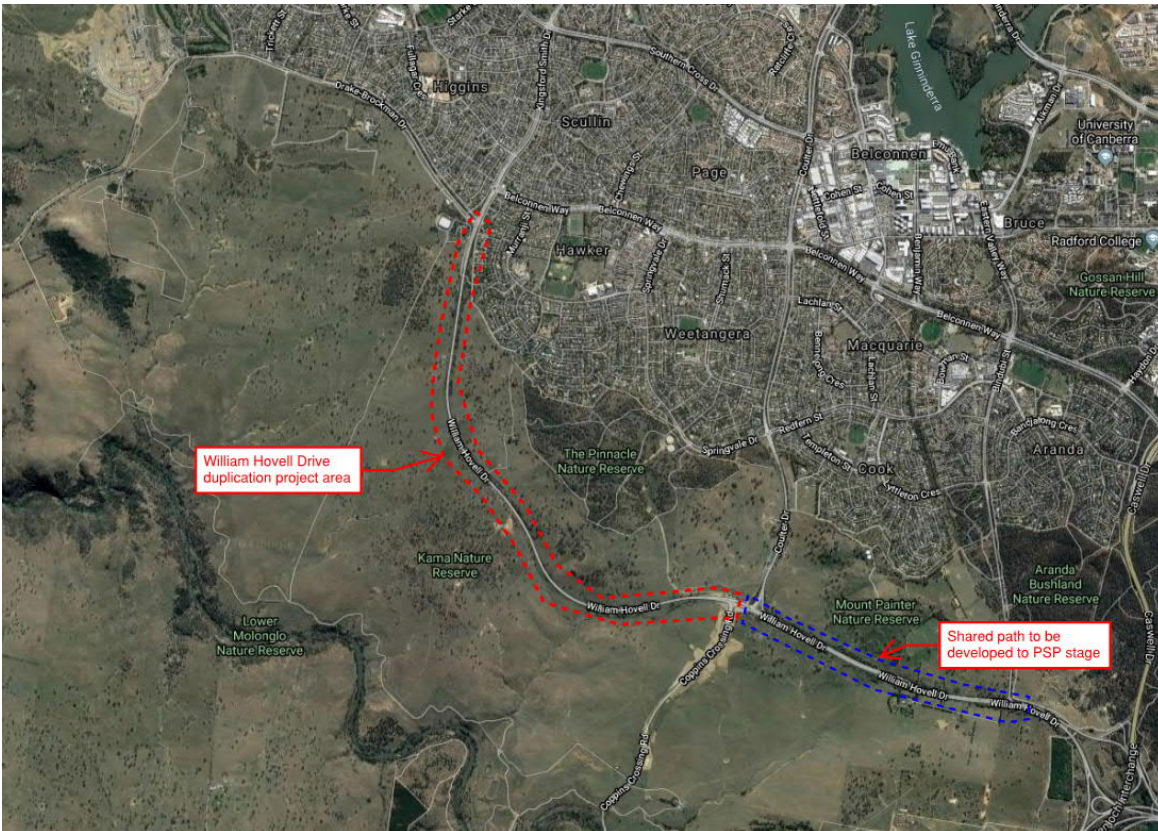


Figure 1: Location of project

This section of WHD has a demonstrated crash history with the road experiencing higher than average crash statistics. The types of crashes indicate that the road is running over capacity and is congested. The current traffic count for the road is in excess of 20,000 vehicles per day, which significantly exceeds the generally accepted capacity of a single carriageway road.

This report discusses the likely transport impacts of the proposed duplication and shared path construction.

2 Proposed Development

Key features of the proposed development (road duplication) include:

- Retention of 90 km/h posted speed limit and 100 km/h design speed
- Dual travel lanes in both directions of travel
- 4.0 m median with central safety barrier
- 2.0 m shoulder for on-road cyclists
- Elimination of existing compound curve approximately 1km west of JGD intersection
- Retention of as much pavement as possible to simplify construction and attempt to limit project costs
- Upgrade of existing William Hovell Drive – Drake Brockman Drive roundabout to a signalised intersection suitable for predicted traffic volumes
- 3.0 m shared path with vertical grades complying to AS 1428
- Provision of an access road and parking facility for Old Weetangera Cemetery
- Access road for Kama Nature Reserve
- Improvements to the Bicentennial National Trail approaches
- Provision of retaining walls to maintain all works within the road reserve and limit impact on sensitive environmental areas
- Street lighting

2.1 Site Layout

The typical cross section for the main alignment of WHD includes:

- 2 x 3.5 m travel lanes
- 3.2 m turn lanes where required
- 2.0 m shoulder width (near side)
- 1.5 m verge
- 4.0 m median with centrally located wire rope safety barrier
- W beam safety barrier used where required
- Existing crossfall retained where possible
- 3.0 m shared user path.

Figure 2 depicts a typical cross section for WHD.

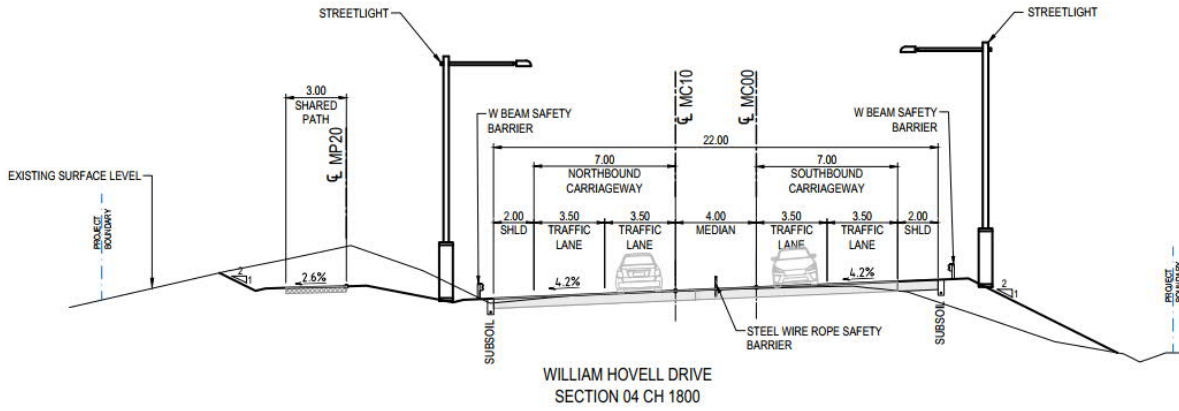


Figure 2: WHD typical section

Figure 3 demonstrates the typical arrangement of the carriageway when a retaining wall is adjacent to the alignment.

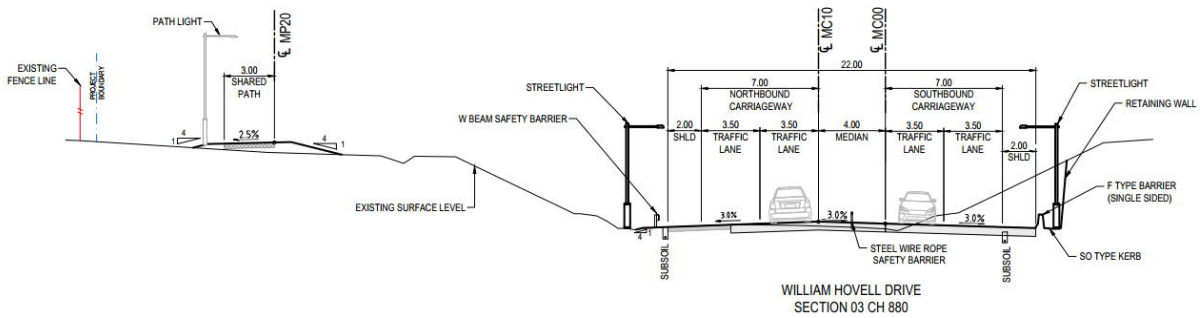


Figure 3: WHD typical section at retaining wall

2.1.1 Public Transport

William Hovell Drive is not currently used for public transport services, and there are no plans to provide rapid public transport on this corridor in the future. The *ACT Transport Strategy 2020* shows an indicative public transport network for 2045, with orbital links using William Hovell Drive. The road design allows for passage of buses, and it is not expected that there would be any public transport stops on William Hovell Drive, due to its relatively rural nature and separation from nearby urban areas.

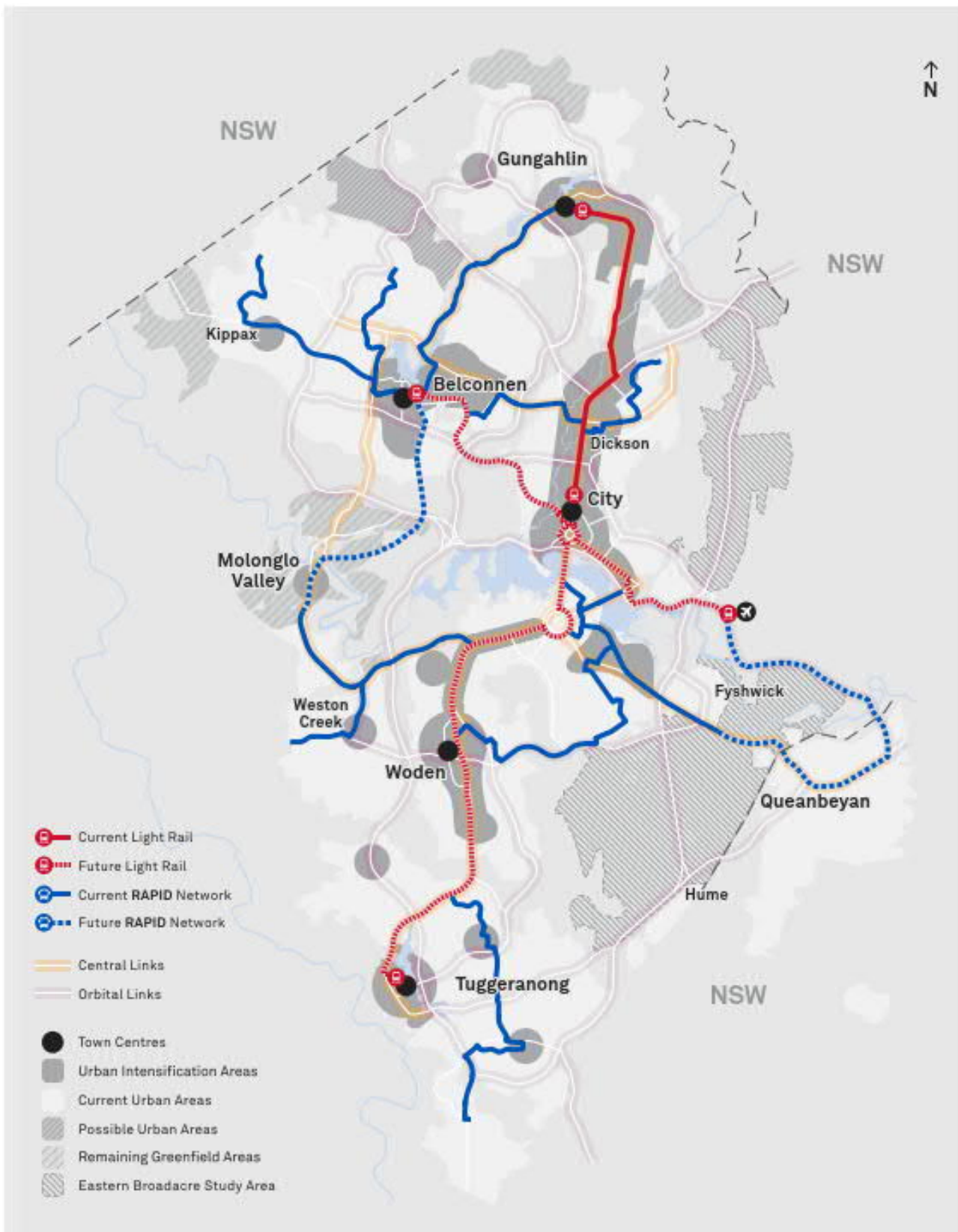


Figure 4: ACT Transport Strategy – Central links and public transport network (source: ACT Transport Strategy 2020)

2.1.2 Delivery and Service Vehicles

The proposed road duplication will not generate any new delivery or service vehicles. The road design provides for appropriate vertical and horizontal geometry for all required vehicle types to pass through the development area.

2.1.3 Active Travel

The proposed development includes a shared path between Drake Brockman Drive and Bindubi Street designed in accordance with the ACT Government vision for active travel within the Capital. The following key features of the path include:

- 3 m asphalt path with 1.5 m travel lanes in each direction
- Connection to the newly designed shared user path network at John Gorton Drive
- Connection to the Bicentennial trail and Glenloch Interchange
- Pedestrian cross walks (Zebra crossing) and signalised crossings for users at each intersection
- Horizontal alignment limits excessive earthworks
- Integration with other projects in the same geographical area
- Vertical alignment compliant to AS1428.1
- Upgrade of intersections to improve pedestrian and cyclist safety

In addition to the shared path, the proposed duplication between Drake Brockman Drive and John Gorton Drive will provide a 2m wide shoulder in each direction, which complies with the width requirements from *MISO5-Active Travel Facilities*. This shoulder will be formally marked as a cycle lane at intersections.

2.1.4 Vehicle Movements

The proposed development will not generate any traffic, according to traditional traffic generation methodologies. However, the upgrade will result in a redistribution of traffic across the Canberra road network and may also lead to a small increase in traffic volumes due to the relatively lower congestion and easier road travel. This increase on traffic should be accompanied by a reduction in traffic volumes across other arterial and lower order roads in Belconnen.

2.2 Parking

According to the ACT Parking and Vehicular Access General Code, there are no parking requirements for the proposed road duplication.

2.3 Travel Demand Management

The proposed project does not have any Travel Demand Management features.

3 Existing and Design Year Conditions

3.1 Existing Conditions

3.1.1 Traffic Volumes

Two sets of traffic surveys were conducted for this project:

- Classified midblock survey (seven days, 24 hours, 13-19 February 2020)
- Classified intersection movement counts (AM and PM Peaks, Thursday 13 February 2020)

In addition to the manual traffic surveys, SCATS volumes for the intersection of William Hovell Drive were supplied by TCCS for the period 4 March 2019 to 8 March 2020.

Table 1 shows the counted volumes on William Hovell Drive for the period 13-19 February 2020. Traffic volumes are highest on the weekdays, with Tuesday to Friday being the highest days. Eastbound traffic volumes are slightly higher than westbound volumes across the counted period.

Table 1: William Hovell Drive Midblock Volumes

Period	WHD Volume	
	Eastbound	Westbound
Sunday	6,547	6,151
Monday	10,916	10,392
Tuesday	11,064	10,722
Wednesday	11,697	11,187
Thursday	11,461	10,984
Friday	11,614	10,682
Saturday	7,850	6,111
Weekday (average)	11,350	10,793
Weekend (average)	7,199	6,131
Total (7 days)	71,149	66,229

From the midblock volumes collected the annual traffic volumes could be calculated. This was accomplished by using SCATS data to develop an annualisation factor which, when applied to the volumes in Table 1, provides the annual traffic volumes detailed in Table 2.

Table 2: Annual and AADT Traffic Volumes

Period	WHD Volume	
	Eastbound	Westbound
Annual Volume	3,519,493	3,286,562
AADT	9,616	8,980

Table 3 shows the surveyed intersection movement volumes on Thursday 13 February 2020. In the AM peak, the key traffic movements are the southbound through on Kingsford Smith Drive and the right turn from Drake Brockman Drive. Together, these two movements account for approximately 70% of the traffic through the intersection. In the PM peak, the key movements are the northbound through movement and left turn from William Hovell Drive, which are the reverse movements from the AM peak. These two movements account for approximately 65% of the traffic at the intersection. These proportions are typical of an outer arterial road, connecting largely residential areas in Belconnen to the employment areas of Civic, Parliamentary Zone and Woden.

Table 3: Intersection Turn Volumes (2020)

Approach	Movement	2020 AM	2020 PM
William Hovell Drive	Left	142	568
	Through	291	1,142
	Total	433	1,710
Kingsford Smith Drive	Through	1,063	321
	Right	86	259
	Total	1,149	580
Drake Brockman Drive	Left	356	184
	Right	745	210
	Total	1,101	394
Total		2,683	2,684

3.1.2 Intersection Performance

SIDRA analysis was conducted for the intersection of William Hovell Drive – Kingsford Smith Drive – Drake Brockman Drive. The analysis was undertaken using SIDRA Intersection 8, in accordance with the *Guidelines for SIDRA Analysis Draft V1.0* (TCCS, 2016).

The assessment found that the intersection operates well for the existing (2020) traffic volumes.

The Existing intersection layout analysed in this assessment is shown in Figure 5.

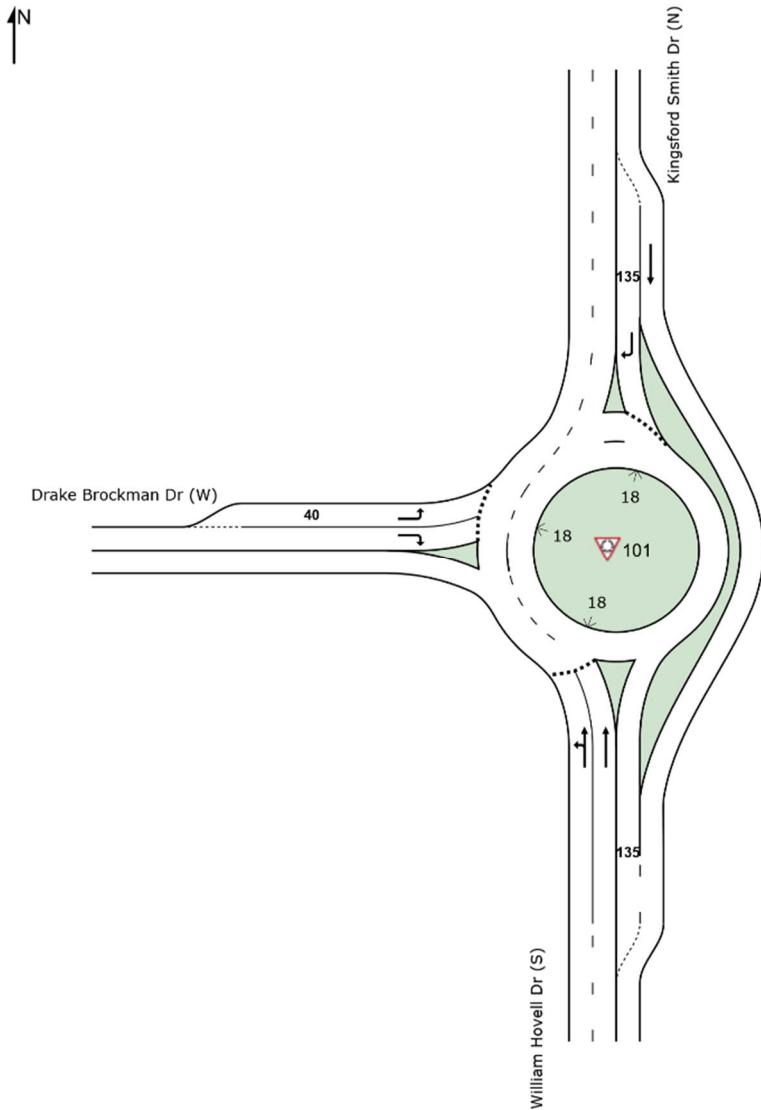


Figure 5: Existing Roundabout Layout

The SIDRA analysis results (Average Delay, Level of Service and 95th Percentile Back of Queue) for the Existing AM and PM scenarios in 2020 are shown in Table 4.

Table 4 shows that the intersection is expected to operate well in 2020, with low delays on all movements.

Table 4: Intersection Analysis Results – Existing Layout (2020)

Approach	Movement	2020 AM			2020 PM		
		Delay (s)	LOS	Queue (m)	Delay (s)	LOS	Queue (m)
William Hovell Drive	Left	6.5	A	8.2	9.0	A	62.0
	Through	6.9	A	8.2	10.1	A	63.4
	Average/Max	6.8	A	8.2	9.7	A	63.4
Kingsford Smith Drive	Through	6.4	A	0.0	6.3	A	0.0
	Right	15.1	B	6.5	11.5	A	6.9
	Average/Max	7.0	A	6.5	8.7	A	9.6
Drake Brockman Drive	Left	8.0	A	15.7	11.7	A	15.3
	Right	13.4	A	42.0	14.9	A	14.4
	Average/Max	11.7	A	42.0	13.4	B	15.3
Average/Max		8.9	A	42.0	10.0	A	63.4

3.1.3 Road Safety

Previous work undertaken by Calibre (*William Hovell Drive Upgrade Feasibility Study – Environmental, Heritage and Traffic and Transport Inputs to the Feasibility Study*, July 2018) found that William Hovell Drive experienced injuries at approximately four times the national average for urban and rural roads. Specific issues noted in that study included:

- WHD performs a through arterial function, with limited alternative routes
- Current active transport network provision along the corridor is limited
- Traffic demands indicate that AM current peak hour volumes southbound are at or near capacity (>1,800 vehicles per hour)
- High crash rates are indicative of:
 - Stop start conditions at intersections and midblock
 - High levels of sideswipes midblock suggest southbound and northbound lane merge is not operating effectively.

3.2 Study Period

From analysis of the surveyed traffic volumes, it was decided that the study would be conducted for the AM and PM peak one hour periods.

3.3 Design Year

A future design year of 2031 has been selected for this TIA.

3.4 Future Base Conditions

3.4.1 Traffic Volumes

Future traffic volumes were calculated based on growth rates obtained from the Canberra Strategic Transport Model (CSTM). The CSTM is a four-step transport model that performs trip generation, trip distribution, mode choice and traffic assignment using the Canberra and surrounding regions road network and land use. In each model year (2016, 2021 and 2031) the CSTM incorporates all known land use and transport network developments. These factors are considered during each step of the four-step model to forecast transport demand, determine where that additional demand will be generated, which mode it will use and the routes on which those trips will travel through the network. CSTM modelling for this project was conducted by TCCS and model outputs were supplied to SMEC.

Table 5 shows the 2020 surveyed volumes, growth rates calculated from the CSTM outputs and 2031 forecast volumes based on those growth rates. The table shows that, while there is a substantial increase in overall traffic at the intersection, there is a decrease in some movements and an increase in others. In particular, the peak directional proportion along Kingsford Smith Drive and William Hovell Drive appears to reverse between 2020 and 2031. In 2020, approximately 70% of the traffic at the intersection travels south (to the city) in the AM and north (to Belconnen) in the PM. In 2031, approximately 60% of the traffic travels in the opposite direction. It appears that this change is due to the development in Molonglo, near the southern end of William Hovell Drive. The extra traffic generated by Molonglo through Glenloch Interchange and along Parkes Way is likely to force traffic from Belconnen to use an alternative route (possibly Belconnen Way/Barry Drive). In addition, some of the residents of Molonglo will travel north to Belconnen, along Bindubi Street, Coulter Drive and William Hovell Drive.

Table 5: Intersection Turn Volumes and Growth Rates

Approach	Movement	2020 Volumes		2020-2031 Annual Growth		2031 Volumes	
		AM	PM	AM	PM	AM	PM
William Hovell Drive	Left	142	568	5%	4%	242	860
	Through	291	1,142	14%	-13%	1,311	216
	Total	433	1,710	12%	-4%	1,553	1,077
Kingsford Smith Drive	Through	1,063	321	-12%	14%	251	1,355
	Right	86	259	4%	9%	142	717
	Total	1,149	580	-9%	12%	394	2,072

Approach	Movement	2020 Volumes		2020-2031 Annual Growth		2031 Volumes	
		AM	PM	AM	PM	AM	PM
Drake Brockman Drive	Left	356	184	8%	5%	887	347
	Right	745	210	3%	4%	1072	326
	Total	1,101	394	5%	5%	1,959	673
Total		2,683	2,684	3%	3%	3,906	3,822

3.4.2 AADT

Similar to the growth calculations for the intersection turn volumes, the midblock volumes on William Hovell Drive were calculated from existing volumes and growth rates from the CSTM. Table 6 shows the 2020 surveyed volumes, 2020-2031 growth rates and calculated 2031 annual and AADT volumes. William Hovell Drive shows a relatively low growth rate for the AADT at 1% per annum. It is likely that this volume growth does not accurately reflect the increase in travel demand, and some trips are using other parts of the network.

Table 6: Annual and AADT Traffic Volumes

Period	2020 WHD Volume		2020-2031 Growth Rate		2031 WHD Volume	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
Annual Volume	3,519,493	3,286,562	1%	1%	3,735,765	3,556,872
AADT	9,616	8,980			10,207	9,718

3.4.3 Intersection Performance

The intersection turning volumes for the 2031 SIDRA Intersection analysis were generated from observed AM and PM peak turning movement counts collected in 2020. These observed volumes were extrapolated to 2031 volumes using growth factors calculated from the CSTM outputs for 2016, 2021 and 2031.

The 2031 Existing scenario represents the current intersection layout. This configuration was analysed first to determine if there are likely to be significant performance issues. The assessment found significant issues for some movements at the intersection.

The SIDRA analysis results (Average Delay, Level of Service and 95th Percentile Back of Queue) for the Existing AM and PM scenarios in 2031 are shown in Table 7.

Table 7 shows that the intersection is expected to fail in 2031, with some movements operating at very high delay in the AM and PM peak periods and as such the overall average performance of the intersection falls below the required level of service. The movements that fall below the required LoS are highlighted in the table.

Table 7: Intersection Analysis Results – Existing Layout (2031)

Approach	Movement	2031 AM			2031 PM		
		Delay (s)	LOS	Queue (m)	Delay (s)	LOS	Queue (m)
William Hovell Drive	Left	7.3	A	49.9	129.5	F	574.4
	Through	7.8	A	49.9	14.1	A	22.6
	Average/Max	7.7	A	49.9	106.3	F	574.4
Kingsford Smith Drive	Through	6.3	A	0.0	6.4	A	0.0
	Right	13.8	A	9.9	14.2	A	48.9
	Average/Max	9.0	A	9.9	9.1	A	48.9
Drake Brockman Drive	Left	852.2	F	2,104.3	7.0	A	14.5
	Right	790.3	F	2,428.0	11.7	A	13.3
	Average/Max	818.3	F	2,428.0	9.3	A	14.5
Average/Max		414.5	F	2,428.0	36.5	C	574.4

4 Traffic Generation and Modal Split

4.1 Traffic Generation

The proposed development will not generate any traffic, according to traditional traffic generation methodologies. However, the upgrade will result in a redistribution of traffic across the Canberra road network and may also lead to a small increase in traffic volumes due to the relatively lower congestion and easier road travel. This increase on traffic should be accompanied by a reduction in traffic volumes across other arterial and lower order roads in Belconnen. In particular, east-west rat-running through Hawker, Weetangera, Macquarie, Cook and Aranda would become less attractive with the increased arterial capacity.

4.2 Modal Split

William Hovell Drive is not currently used for public transport services, and there are no plans to provide rapid public transport on this corridor in the future. The road design allows for passage of buses, and it is not expected that there would be any public transport stops on William Hovell Drive, due to its relatively rural nature and separation from nearby urban areas.

The duplication of William Hovell Drive is expected to have a very minor impact on public transport mode choice. The easing of congestion on an arterial route may very slightly increase the attractiveness of private vehicle travel, primarily between Belconnen and Civic. However, the provision of a safe, separated shared path between Drake Brockman Drive and the trunk network at Bindubi Street is expected to lead to a positive change in the number of cyclists in the area, both commuting and recreational.

4.3 Approach and Departure Directions

William Hovell Drive forms a key arterial route between Belconnen and Civic. It also provides access from Belconnen to the Tuggeranong Parkway and Parkes Way at Glenloch Interchange, which in turn provide access to the Parliamentary Triangle, Woden and Tuggeranong. Currently, traffic moves primarily in the peak direction, e.g. from residential areas in Belconnen to employment areas in the AM peak and back again in the PM peak. In the future, with the development of Molonglo, the peak direction will be less defined, with traffic travelling from Molonglo to Belconnen in the AM peak period. This increase will tend to increase the AADT, without increasing the peak direction flow.

4.4 Traffic Assignment

CSTM modelling was undertaken by TCCS and the outputs were supplied to SMEC. Figure 6 and Figure 7 show the model outputs for the 2031 AM and PM peak periods respectively. These outputs show that, after the duplication of William Hovell Drive, there will be no capacity issues on William Hovell Drive. The traffic volumes on William Hovell Drive between Drake Brockman Drive and John Gorton Drive are likely constrained by a lack of capacity further east on William Hovell Drive between John Gorton Drive and Bindubi Street.

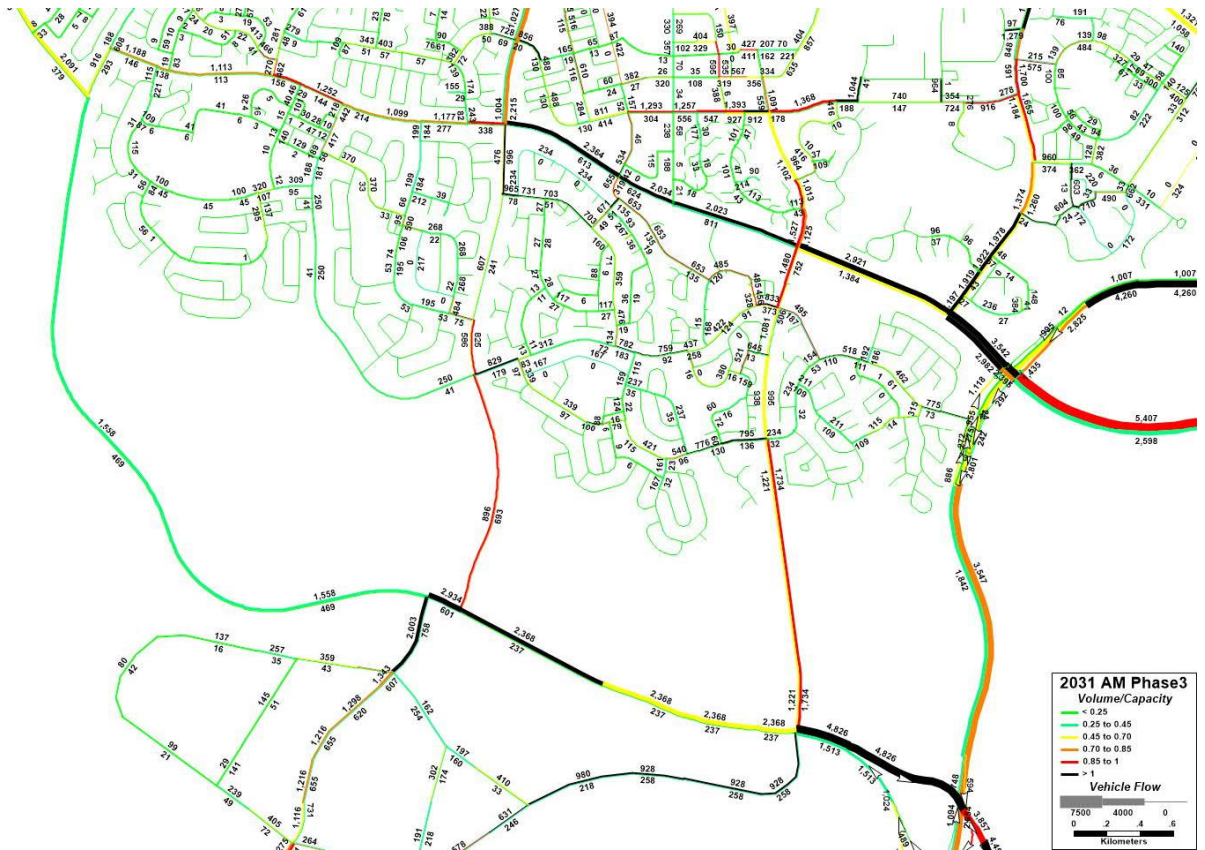


Figure 6: 2031 AM Peak Hour Traffic Volumes (Source: TCCS)

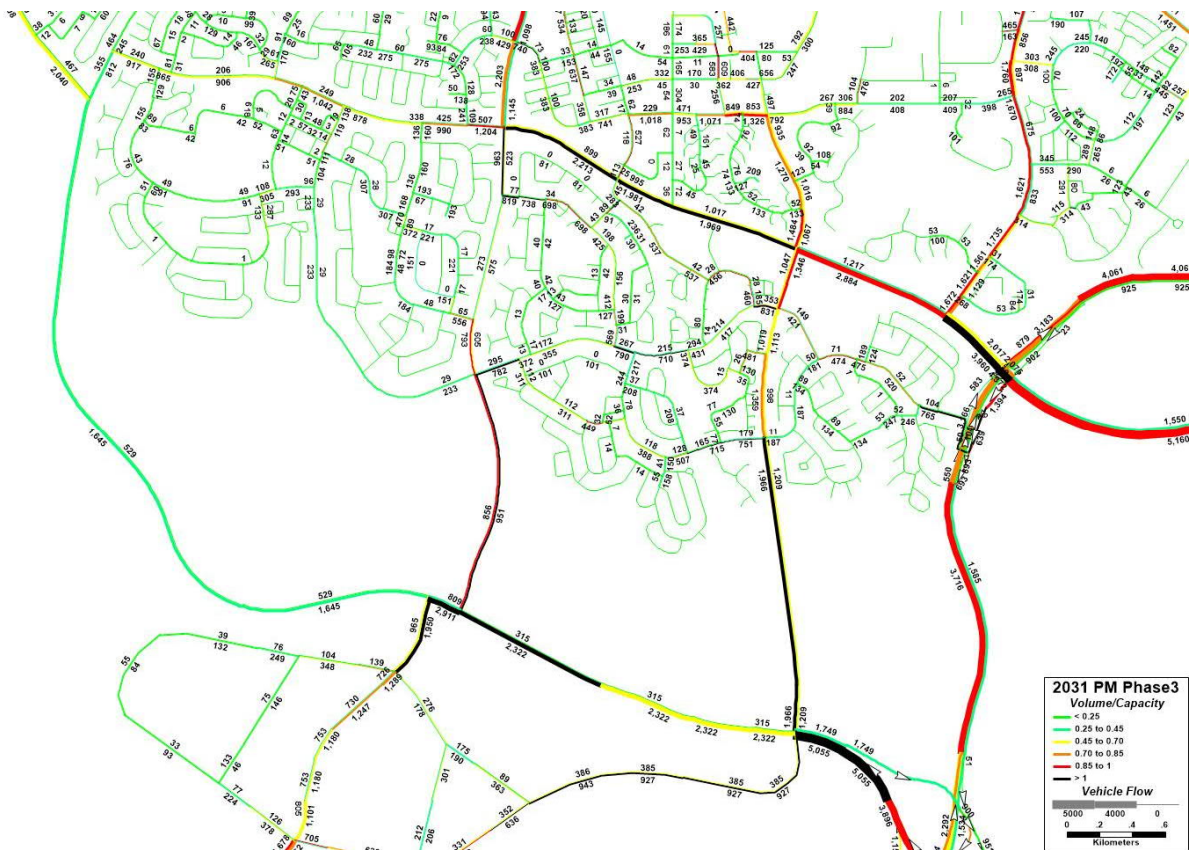


Figure 7: 2031 PM Peak Hour Traffic Volumes (Source: TCCS)

5 Operation and Service Assessment

5.1 Intersections

To address the issues identified in the 2031 Existing scenario analysis, three upgraded intersection layouts were tested, which were:

- Upgraded roundabout: This layout uses a much larger roundabout with two circulating lanes. The southbound through movement, northbound left turn and eastbound left turn all use continuous lanes that effectively bypass the intersection before merging downstream.
- Signalised intersection: The signalised intersection has a relatively compact footprint, with two lanes for each through and right turn movement. The left turns from the south and west have a high-angle slip lane with priority control.
- Signals retrofitted to existing roundabout: This layout entailed the retention of existing roundabout layout and alignment with the addition of signals to control vehicles entry to the roundabout.

The signalised roundabout was eliminated as a viable option following advice from the civil design team. This is due to the existing roundabout being significantly smaller than design guidelines require. The existing roundabout does not cater for the B-double design vehicle. The upgraded roundabout was also removed as a viable option due to the required size of the intersection and the absence of appropriate active travel facilities.

The Signalised intersection layout recommended in this assessment is shown in Figure 8.

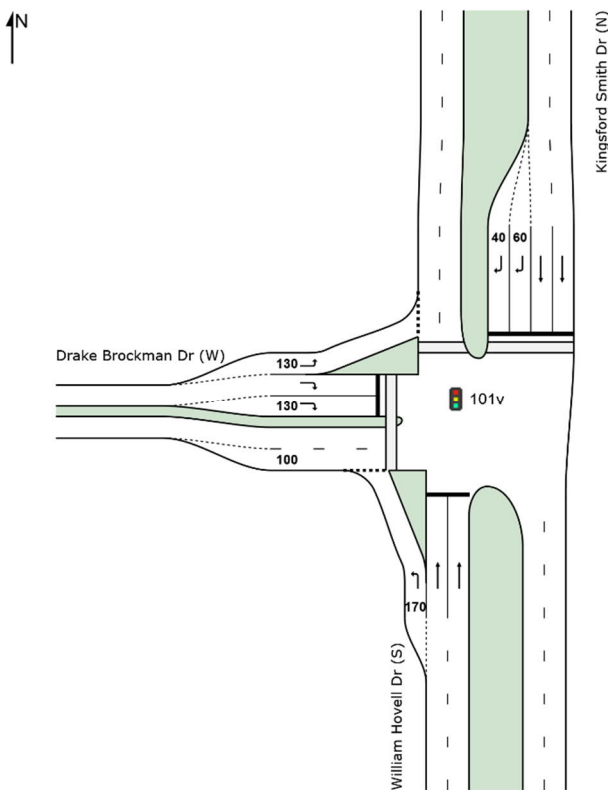


Figure 8: Signalised Intersection Layout

Table 8 shows that the signalised intersection is expected to generally operate well in 2031, with one movement operating at LOS E in the 2031 AM peak and all movements operating well in the 2031 PM peak.

Table 8: Intersection Analysis Results – Signalised Layout (2031)

Approach	Movement	2031 AM			2031 PM		
		Delay (s)	LOS	Queue (m)	Delay (s)	LOS	Queue (m)
William Hovell Drive	Left	8.7	A	15.4	25.3	B	162.6
	Through	55.1	D	356.2	24.3	B	22.9
	Average/Max	47.8	D	356.2	25.1	B	162.6
Kingsford Smith Drive	Through	14.7	B	26.6	6.3	A	88.2
	Right	67.6	E	43.9	31.5	C	108.3
	Average/Max	33.8	C	43.9	15.0	B	108.3
Drake Brockman Drive	Left	54.0	D	415.0	8.9	A	17.8
	Right	53.0	D	242.5	41.7	C	42.8
	Average/Max	53.5	D	415.0	24.8	B	42.8
Average/Max		49.3	D	415.0	19.6	B	162.6

5.2 Road Links

William Hovell Drive forms the only internal road link in the project. After the duplication, William Hovell Drive is expected to operate at an acceptable Level of Service.

5.3 Public Transport

The proposed duplication of William Hovell Drive does not include any dedicated public transport facilities. The road design allows for passage of buses, and it is not expected that there would be any public transport stops on William Hovell Drive, due to its relatively rural nature and separation from urban areas in Belconnen and Molonglo.

The ACT Transport Strategy shows that William Hovell Drive will be used by Orbital (e.g. non-Rapid) bus routes. The increased capacity of the additional lane will provide improved travel speed and travel time reliability for these bus routes, without bus priority infrastructure, which would be more appropriate for Rapid corridors.

5.4 Pedestrians and Cyclists

The project includes provision for safe pedestrian and cyclist crossing of William Hovell Drive at Drake Brockman Drive, John Gorton Drive (existing crossing) and three underpasses along the project length. The proposed on-road cycle lanes and shared user path represent a significant improvement in active travel amenity in the study area.

5.5 Parking and Service Vehicles

The project does not include any parking and will not generate additional service vehicles.

5.6 Road Safety

The proposed road upgrade has been through a Safety in Design (SiD) process, which identified 132 risks during the construction process, ranging from Low to Very High. Mitigation options were developed for all risks, which reduced the risk ratings to a range from Low to Moderate.

A Road Safety Audit (RSA) has not been carried out on the design at this stage. However, agreement has been reached with TCCS to undertake this later in the project.

The proposed road duplication would address most of the key issues noted by Calibre in 2018, including:

- Limited safe active travel opportunities
- Limited capacity
- Congested merge and intersection points

5.7 Environmental Capacity

A noise assessment of the proposed duplication of William Hovell Drive (WHD) between Drake Brockman Drive and John Gorton Drive has been completed. The upgrade would result in two lanes in each direction.

Project Target Noise Levels were established for existing and future residential receptors in the vicinity of the WHD alignment in accordance with the Roads ACT "Noise Management Guidelines".

Road traffic noise from vehicles on the upgraded alignment was modelled to predict noise for the Year 2031.

The predictions showed that road traffic noise associated with the duplication would exceed the assessment criteria at two existing residential properties and the Whitlam residential estate development by up to 2 dBA.

Noise mitigation treatments were considered. The use of a low noise pavement such as Open Graded Asphalt (OGA) for sections of the WHD alignment was found to result in compliance with the project Target Noise Levels and is the preferred mitigation approach. The extent of the OGA required is limited to sections at the north and south ends of the alignment where residential receptors will be closest.

5.8 On-Site Circulation and Access Assessment

There are no on-site roads that have not been assessed in Section 5.2 or access points.

6 Impact Summary

The proposed duplication of William Hovell Drive between Drake Brockman Drive and Coulter Drive provides better traffic flow between Belconnen and key areas including Civic, Parliamentary Zone and Woden. Currently, sections of William Hovell Drive operate close to capacity and the resultant congestion leads to an increase in crashes. The duplication of the road and provision of a safe active travel route is expected to reduce congestion and ensuing crashes. In addition, increased arterial capacity is expected to reduce the likelihood of east-west rat-running through Hawker, Weetangera, Cook, and Aranda.

The existing intersection layout of William Hovell Drive, Drake Brockman Drive and Kingsford Smith Drive would operate at an unsatisfactory Level of Service under the forecast traffic volumes in 2031. Upgrading this intersection to a signalised T-intersection would allow it to operate well in the 2031 AM and PM peak periods, with LOS D in the AM and LOS B in the PM peak. One movement is expected to operate at LOS E in the AM. No movements operate at LOS F in either peak period.

The traffic surveys showed that there is currently very low demand through the study area for active travel. Across the six-hour survey periods, only two cyclists were counted, turning left from Drake Brockman Drive onto Kingsford Smith Drive. Part of this low demand is likely to be the somewhat remote location but also the design of the intersection and nearby facilities. Roundabouts offer poor accessibility for pedestrian and cyclists as they must find gaps in the traffic stream. The existing southbound bypass lane operates at 80km/h and represents a substantial risk for pedestrians and cyclists.

In the future, as development in Molonglo and West Belconnen increase, there is likely to be a higher demand for active travel in the area. The proposed shared path running beside William Hovell Drive, which will connect to the existing shared path adjacent to Bindubi Street, will offer users a safe, direct connection to Civic and the trunk cycle network around Lake Burley Griffin. Providing good access to this shared path will encourage broader use and less reliance on private cars.

Overall, there are not expected to be any negative impacts on the surrounding transport network from the duplication of William Hovell Drive.

7 Mitigating Treatments

No mitigating treatments would be required outside the area covered by the design.

8 Other Investigations

As requested by EPSDD in the EIS scoping, a number of other investigations have been added to the standard TIA scope as follows:

- traffic disruptions and other impacts during construction
- the impacts to the current and future urban areas
- impacts on road safety and operation, particularly to vulnerable road users
- the likely volume of traffic proposed to be accommodated during operation
- how construction vehicle movement and parking will be managed

Details of these investigation are discussed in the following sections.

8.1 Traffic disruptions and other impacts during construction

Most of the construction process will be undertaken offline, with minor impacts to traffic operations during final tie-in and diversion of traffic onto the new carriageway. The conversion of the intersection of Drake Brockman Drive and William Hovell Drive to signals will represent a possible disruption. Construction staging and temporary pavement can be used to mitigate this impact.

8.2 Impacts to the current and future urban areas

The proposed duplication of William Hovell Drive between Drake Brockman Drive and Coulter Drive provides better traffic flow between Belconnen and key areas including Civic, Parliamentary Zone and Woden. Currently, sections of William Hovell Drive operate close to capacity and the resultant congestion leads to an increase in crashes. The duplication of the road and provision of a safe active travel route is expected to reduce congestion and ensuing crashes. In addition, increased arterial capacity is expected to reduce the likelihood of east-west rat-running through Hawker, Weetangera, Cook, and Aranda.

The William Hovell Drive alignment is generally located away from urban areas, with some exceptions near the intersection with DBD (Hawker) and JGD (Whitlam). This means that the duplication will not have any significant negative impact on access to, or movement within, current and future urban areas.

8.3 Impacts on road safety and operation

The proposed road upgrade has been through a Safety in Design (SiD) process, which identified 132 risks during the construction process, ranging from Low to Very High. Mitigation options were developed for all risks, which reduced the risk ratings to a range from Low to Moderate.

A Road Safety Audit (RSA) has not been carried out on the design at this stage. However, agreement has been reached with TCCS to undertake this later in the project.

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In the future, as development in Molonglo and West Belconnen increase, there is likely to be a higher demand for active travel in the area. The proposed shared path running beside William Hovell Drive, which will connect to the existing shared path adjacent to Bindubi Street, will offer users a safe, direct connection to Civic and the trunk cycle network around Lake Burley Griffin. Providing good access to this shared path will encourage broader use and less reliance on private cars.

Overall, there are not expected to be any negative impacts on the surrounding transport network from the duplication of William Hovell Drive.

8.4 Likely volume of traffic proposed to be accommodated during operation

Traffic modelling undertaken by TCCS and supplied to SMEC as an input to the project showed that William Hovell Drive is expected to carry up to 1,645 vehicles per hour in the peak direction in 2031. These volumes are likely lower than the true demand due to capacity constraints elsewhere in the network.

8.5 Construction vehicle movement and parking management

Detailed construction staging and vehicle movements will be determined through the later stages of the design with the following factors influencing final construction staging:

- The duplication of William Hovell Drive is proposed to be delivered in 2 packages. Phase 1 commencing at chainage 2300 through to chainage 4880 and Phase 2 commencing at chainage 0 through to chainage 2300. Phase 2 includes the signalisation of DBD intersection.
- Phase 1 is proposed to commence first to minimise potential impacts to Whitlam development. Depending on traffic impacts it may be possible for packages to take place concurrently.
- Timing of works in various areas of the project will be influenced by environmental matters (e.g. timing of tree removal with consideration for minimising impacts to threatened species).
- Timing of DBD intersection works and relocation of watermain infrastructure is to take place in winter to avoid impacting water supply.
- Construction staging of DBD intersection will need to allow for all existing traffic movements.
- Construction staging along William Hovell Drive will need to allow for continuous flow of traffic.
- Timing of underpass extensions will need to be considered. Works are expected to take place early within each phase.

- Construction staging and process will need to be planned to minimise the impact on surrounding areas used for recreation, including the Bicentennial National Trail, Pinnacle and Kama Nature Reserves, Old Weetangera Cemetery and urban open spaces. Access to neighbouring land from the road verge may be affected during construction, but will be maintained during the construction period as far as possible. Details of the construction staging and process are not yet finalised.

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