

Appendix D

Integrated Transport Assessment



Integrated Transport Assessment Prepared for

ROLLESTON WEST RESIDENTIAL LTD

Dunns Crossing Road Rolleston

November 2020



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Rolleston West Residential Ltd

Dunns Crossing Road Rolleston

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Introduction

- Rolleston West Residential Ltd has commissioned Novo Group to prepare an Integrated Transport Assessment (ITA) to support the proposed Plan Change for land at Dunns Crossing Road, on the western edge of Rolleston.
- 2. This report provides an assessment of the transport aspects of the proposed development. It also describes the transport environment in the vicinity of the site and describes the transport related components of the proposal. It has been prepared broadly in accordance with the Integrated Transportation Assessment Guidelines specified in New Zealand Transport Agency Research report 422.
- 3. The land associated with this proposed Plan Change is illustrated in Figure 1, which is two sites on Dunns Crossing Road. The northern site (Holmes Block) is located at the south-western corner of the State Highway 1 / Dunns Crossing Road intersection. It is proposed that the Holmes Block could provide up to 1,150 residential Lots, plus a small Local Centre. The southern site (Skellerup Block) is located approximately 690m north of Selwyn Road and is proposed to accommodate up to 950 residential Lots, plus a small Local Centre.
- 4. Copies of the Outline Development Plans for these sites are included in Appendix 1.

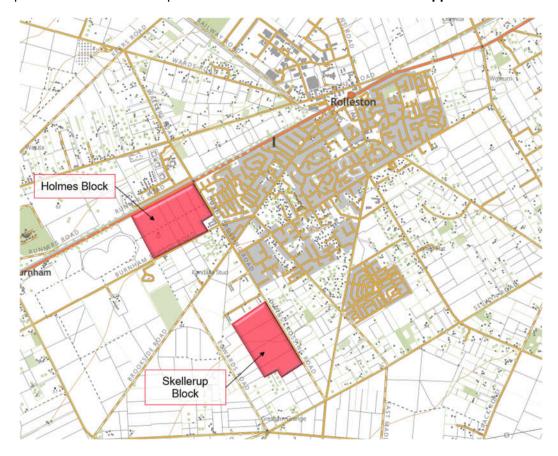


Figure 1: Site Location



Transport Environment

Road Network

State Highway 1

5. **Table 1** sets out the transport characteristics of State Highway 1 (SH1) in the vicinity of the application site

Table 1: State Highway 1 Road Characteristics

Key Feature or Characteristic	Comment	
Road Classification	State Highway and Arterial Road	
Cross-Section Description	3.5m lanes in both directions, plus sealed shoulders.	
Traffic Volumes	20,500 vehicles per day ¹ .	
Speed	100km/hr (although currently a 70km/hr limit at the intersection with Dunns Crossing Road)	
Cycling, Pedestrian Infrastructure and Public Transport	None	

- 6. The SH1 / Dunns Crossing Road / Walkers Road intersection is a priority controlled cross-road, with SH1 having the priority. This intersection is currently operating poorly with regards to traffic capacity and it is understood that the NZ Transport Agency (NZTA) and Selwyn District Council (the Council) are committed to upgrading this intersection with the current proposal being a roundabout. The design of this roundabout is understood to be under investigation and it would be constructed within three to four years (to coincide with the opening of an over-bridge of SH1 between Rolleston Drive and Jones Road). There is funding committed for this project, although the final design of the roundabout is not yet known.
- 7. The NZTA Crash Analysis System (CAS) has been reviewed to identify crashes that have been reported within 100m of this intersection in the most recent five-year period available. **Figure 2** is the collision diagram, and the crashes are summarised below.
 - i. SH1 South-West Bound Approach: 1 minor injury and 4 non-injury crashes:
 - (a) Head-on when a south-west bound driver hit a vehicle waiting to turn right into Dunns Crossing Road 1 minor injury crash.
 - (b) Merging crash where a driver in the right turn bay changed to the through lane without checking 2 non-injury crashes.
 - (c) Loss of control turning right to Walkers Road 1 non-injury crash.
 - (d) Rear-end when vehicles have stopped for road works 1 non-injury crash.

-

¹ From Mobile Road website



- ii. Dunns Crossing Road: 1 serious, 4 minor injury and 3 non-injury crashes:
 - (a) Failure to give-way to traffic 1 serious injury crash, 4 minor injury crashes and 3 non-injury crashes.
- iii. Walkers Road: 2 minor injury and 2 non-injury crashes:
 - (a) Failure to give-way to through traffic 2 minor injury crash and 2 non-injury crashes.

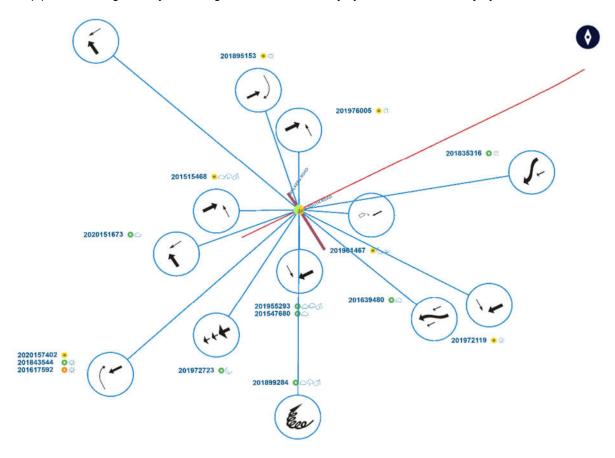


Figure 2: SH1 / Dunns Crossing Rd / Walkers Rd Collision Diagram

8. The above identifies that a number of crashes have occurred at the SH1 / Dunns Crossing Road / Walkers Road intersection. These are primarily caused by vehicles on the minor arms failing to give-way to through traffic on SH1 and these crashes would be addressed by the provision of a roundabout, as anticipated to occur at this location.

Dunns Crossing Road

9. **Table 2** sets out the transport characteristics of Dunns Crossing Road.



Table 2: Dunns Crossing Rd Characteristics

Key Feature or Characteristic	Comment		
Road Classification	Arterial Road between Lowes Road and SH1. Local Road south of Lowes Road.		
Cross-Section Description	Carriageway width of 8.4m (i.e. two 4.2m wide traffic lanes).		
Traffic Volumes	1,600 to 2,500 vehicles per day ² depending on location.		
Speed	60km/hr north of Granite Drive. 50km/hr south of Granite Drive until south of Lowes Road, which is 60km/hr. The rural area south of Lowes Road is 80km/hr.		
Cycling, Pedestrian Infrastructure and Public Transport	1.5m wide footpath on the eastern side where the urban development has occurred. No footpaths on the western side, with the exception of immediately adjacent to the West Rolleston Primary School and pre-school (both of which are at the Burnham School Road intersection). There is also a kea crossing of Dunns Crossing Road outside the primary school.		
	No dedicated cycling facilities or public transport are provided.		

Newman Road

10. **Table 3** sets out the transport details of Newman Road.

Table 3: Newman Rd Characteristics

Key Feature or Characteristic	Comment
Road Classification	Local Road
Cross-Section Description	Carriageway width of 8.0m (i.e. two 4.0m wide traffic lanes).
Traffic Volumes	50 to 400 vehicles per day ³ depending on location.
Speed	50km/hr
Cycling, Pedestrian Infrastructure and Public Transport	1.5m wide footpaths are provided on both sides of the road. No dedicated cycling facilities or public transport are provided.
Connectivity	Provides a connection to Granite Drive, which in turn links to Brookside Road to /from central Rolleston.

11. The Dunns Crossing Road / Newman Road intersection is a priority controlled T-intersection, with Dunns Crossing Road having the priority. No crashes have been reported at this intersection in the most recent five-year period available.

Granite Drive

12. **Table 4** sets out the transport details of Granite Drive.

² From Mobile Road website

³ From Mobile Road website



Table 4: Granite Dr Characteristics

Key Feature or Characteristic	Comment
Road Classification	Local Road
Cross-Section Description	Carriageway width of 8.8m (i.e. two 4.4m wide traffic lanes).
Traffic Volumes	900 to 1,600 vehicles per day ⁴ depending on location.
Speed	50km/hr
Cycling, Pedestrian Infrastructure and Public Transport	1.5m wide footpaths are provided on both sides of the road. No dedicated cycling facilities or public transport are provided.
Connectivity	Provides a connection to Brookside Road, which links to /from central Rolleston.

13. The Dunns Crossing Road / Granite Drive intersection is a priority controlled T-intersection, with Dunns Crossing Road having the priority. No crashes have been reported at this intersection in the most recent five-year period available.

Burnham School Road

14. **Table 5** sets out the transport details of Burnham School Road, west of Dunns Crossing Road.

Table 5: Burnham School Rd Characteristics - West of Dunns Crossing Rd

Key Feature or Characteristic	Comment	
Road Classification	Local Road	
Cross-Section Description	Approximately 170m has an urbanised carriageway that is 7.4m wide and includes no- stopping lines both sides of the road. Beyond this, Burnham School Road is rural in character, with a 6.8m wide sealed carriageway.	
Traffic Volumes	575 vehicles per day⁵.	
Speed	50km/hr for the section leading up to Dunns Crossing Road and 100km/hr west of this.	
Cycling, Pedestrian Infrastructure and Public Transport	1.5m wide footpaths are provided on both sides of the road for the urban section only. No dedicated cycling facilities or public transport are provided.	

15. **Table 6** sets out the transport details of Burnham School Road, east of Dunns Crossing Road.

⁴ From Mobile Road website

⁵ From Mobile Road website



Table 6: Burnham School Rd Characteristics - East of Dunns Crossing Rd

Key Feature or Characteristic	Comment
Road Classification	Local Road
Cross-Section Description	Carriageway of approximately 7.0m.
Traffic Volumes	800 vehicles per day ⁶ .
Speed	50km/hr.
Cycling, Pedestrian Infrastructure and Public Transport	1.5m wide footpaths are provided on both sides of the road. No dedicated cycling facilities or public transport are provided.

- 16. The Dunns Crossing Road / Burnham School Road intersection is a priority controlled cross-road, with Dunns Crossing Road having the priority. No crashes have been reported at this intersection in the most recent five-year period available.
- 17. We understand that Council is investigating a set of traffic signals at this intersection, although we are unaware of the specific design for these signals at this stage.

Lowes Road

18. **Table 6** sets out the transport details of Lowes Road.

Table 7: Lowes Rd Characteristics

Key Feature or Characteristic	Comment
Road Classification	Arterial Road
Cross-Section Description	Carriageway width of 6.0m (i.e. two 3.0m wide traffic lanes), plus on-street parking on both sides.
Traffic Volumes	1,700 to 4,000 vehicles per day ⁷ depending on location.
Speed	50km/hr
Cycling, Pedestrian Infrastructure and Public Transport	1.5m wide footpaths are provided on both sides of the road. No dedicated cycling facilities or public transport are provided.
Connectivity	Provides a connection to Levi Road, which links toward central Rolleston, plus the Weedons – Ross interchange with SH1.

19. The Dunns Crossing Road / Lowes Road intersection is a priority controlled T-intersection, with Dunns Crossing Road having the priority. No crashes have been reported at this intersection in the most recent five-year period available.

⁶ From Mobile Road website

⁷ From Mobile Road website



Selwyn Road

20. **Table 8** sets out the transport details of Selwyn Road in the vicinity of the sites.

Table 8: Selwyn Rd Characteristics

Key Feature or Characteristic	Comment	
Road Classification	Local Road, although this becomes an Arterial Road east of Lincoln Rolleston Road.	
Cross-Section Description	Carriageway width of 6.6m (i.e. two 3.3m wide traffic lanes)	
Traffic Volumes	700 to 3,000 vehicles per day ⁸ depending on location.	
Speed	80km/hr	
Cycling, Pedestrian Infrastructure and Public Transport	None.	
Connectivity	Provides a connection to Shands Road, which links toward the Christchurch Southern Motorway interchange.	

21. The Dunns Crossing Road intersection in this location is with Goulds Road, which in turn has an intersection with Selwyn Road. This configuration is illustrated in **Figure 3**.



Figure 3: Dunns Crossing Rd / Goulds Rd / Selwyn Rd Intersection Arrangement

⁸ From Mobile Road website



- 22. The NZTA CAS database has been reviewed to identify crashes that have been reported within 100m of this intersection in the most recent five-year period available. **Figure 2** is the collision diagram, and the crashes are summarised below.
 - i. Goulds Road Northbound Approach: 2 minor injury and 1 non-injury crashes:
 - (a) Failure to give-way 2 minor injury crashes and 1 non-injury crash.
 - ii. Goulds Road Southbound Approach: 1 serious injury, 1 minor injury and 2 non-injury crashes:
 - (a) Failure to give-way 1 serious injury crash, 1 minor injury crash and 2 non-injury crash.

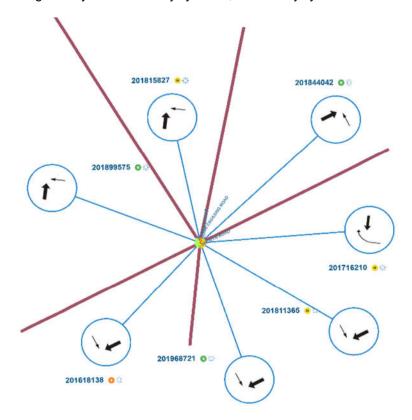


Figure 4: Dunns Crossing Rd / Goulds Rd / Selwyn Rd Collision Diagram

23. The above crash review indicates there is a trend in which drivers exiting the Goulds Road approaches are failing to give-way to traffic on Selwyn Road.



The Proposal

- 24. The transport components of the two proposed ODP areas are set out in turn in the following sections.
- 25. Unless otherwise stated, it is proposed to adopt the transport provisions of the Operative District Plan or Proposed District Plan, whichever is relevant at the time.

Holmes Block

26. The proposed Plan Change would enable up to 1,150 residential lots and a small commercial zone to be established at the application site. A copy of the ODP is included in **Figure 5** and included in more detail in **Appendix 1**.



Figure 5: Holmes Block ODP

Site Layout

Access Intersections

- 27. The ODP proposes a Primary Road access to Dunns Crossing Road, which is indicatively opposite Granite Drive. A Secondary Road access is also proposed to Dunns Crossing Road, which is indicatively opposite Newman Road.
- 28. A Primary Road access is also proposed to Burnham School Road. This has the potential to link to land further south of this site, should that land ever be developed.



- 29. The potential intersection layouts to Dunns Crossing Road will be cross-road arrangements. The intersection with Burnham School Road will be a T-intersection.
- 30. The detailed design and sight distances at the intersections will be confirmed at subdivision stage, although these are anticipated to comply as the road alignments are straight and flat.
- 31. No direct property access is proposed to Burnham School Road, although direct access is proposed to Dunns Crossing Road to be consistent with the existing development on the opposite side of the road.

Road Standards

32. The road cross-sections and intersection spacings within the Plan Change area are proposed to comply with the requirements of the District Plan. It is proposed that the roads identified on the ODP would be constructed as either Local Major or Local Intermediate roads.

Pedestrian & Cycle Links

33. Greenlink connections are provided within Outline Development Plan area. These are intended to reduce walking and cycling times within the subdivision, as well as connecting to the proposed commercial area and West Rolleston Primary School.

Off-Site Transport Improvements

34. The ODP acknowledges that an intersection upgrade is proposed by Council and NZTA at the SH1 / Dunns Crossing Road / Walkers Road intersection. It is anticipated that the construction of this as a roundabout (as is currently proposed by Council and NZTA) may require some of the Plan Change land and the proposed ODP allows for this eventuality. Ultimately, the details of the intersection design will be determined by Council and NZTA for implementation following rezoning.

Traffic Generation & Distribution

Traffic Generation

- 35. The traffic generation is based on an 85th percentile rate of 0.9 vehicles per dwelling in the peak hours and 8.2 vehicles per dwelling per day⁹. Applying this to the proposed 1,150 dwellings leads to the traffic generation set out in **Table 9**. This assumes the following arrival / departure splits from the ITE *Trip Generation* guidebook:
 - i. AM Peak 25% arrivals / 75% departures;
 - ii. PM Peak 63% arrivals / 37% departures: and
 - iii. Daily 50% arrivals / 50% departures.

⁹ Based on Outer Suburban dwellings in the NZTA Research Report 453 – *Trips and Parking Related to Land Use*.



Table 9: Holmes Block Traffic Generation

	Arrivals	Departure	Total
AM Peak	259	776	1,035
PM Peak	652	383	1,035
Daily	4,715	4,715	9,430

36. No traffic generation has been assumed for the local centre, as this is intended to be of a scale that would accommodate pass-by trips associated with the dwellings in the proposed subdivision.

Traffic Distrubution

- 37. The distribution of traffic across the accesses to the wider road network is based on the broad catchments within the subdivision to each of these roads. This leads to an assumption that:
 - i. Dunns Crossing Road northern access accommodates approximately 35% of the Plan Change traffic;
 - ii. Dunns Crossing Road southern access accommodates approximately 40% of the Plan Change traffic; and
 - iii. Burnham School Road accommodates approximately 25% of the Plan Change traffic.
- 38. The above traffic has also been distributed across the wider road network in accordance with information provided from the Rolleston traffic model from 2028. This used data from the residential development coded in that model for the Holmes Block. This distribution is included on the figures included in **Appendix 2**.

Skellerup Block

39. The proposed Plan Change would enable up to 950 residential lots and a small commercial zone to be established at the application site. A copy of the ODP is included in **Figure 6** and included in more detail in **Appendix 1**.



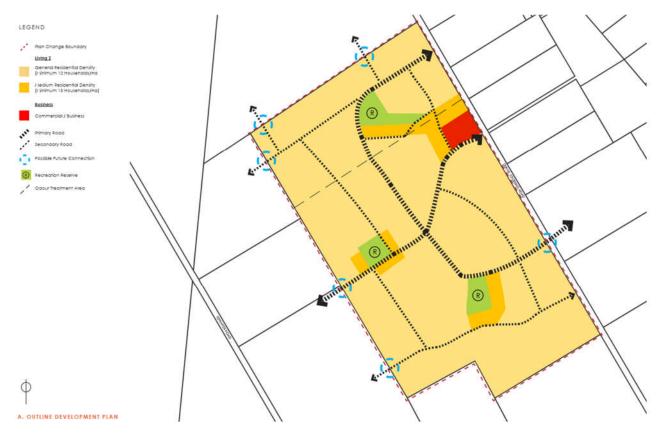


Figure 6: Skellerup Block ODP

Site Layout

Access Intersections

- 40. The ODP proposes three Primary Road accesses to Dunns Crossing Road, as well as a Secondary Access. The southern Primary Road access has the potential to connect to subdivision on the opposite side of Dunns Crossing Road, when that occurs.
- 41. The ODP also includes potential connections through to adjacent land to the north and west, should that land be developed.
- 42. The potential intersection layouts are proposed to be T-intersections for all the accesses. That said, the southern Primary Access intersection could be made into a cross-road to tie-in with access to the land on the eastern side of Dunns Crossing Road (if required).
- 43. The detailed design and sight distances at the intersections will be confirmed at subdivision stage, although these are anticipated to comply as the road alignments are straight and flat.

Road Standards

44. The road cross-sections and intersection spacings within the Plan Change area are proposed to comply with the requirements of the District Plan. It is proposed that the roads identified on the ODP would be constructed as either Local Major or Local Intermediate roads.



Traffic Generation & Distribution

Traffic Generation

45. The traffic generation rates and assumptions set out in paragraph 35 have been applied to the 950 lots proposed at the Skellerup Block. The resultant traffic generation for this block is set out in **Table 10**. Again, no traffic generation has been assumed for the local centre because this is intended to be of a scale that would accommodate pass-by trips associated with the dwellings in the proposed subdivision.

 Arrivals
 Departure
 Total

 AM Peak
 214
 641
 855

 PM Peak
 556
 299
 855

 Daily
 3,895
 3,895
 7,790

Table 10: Skellerup Block Traffic Generation

Traffic Distrubution

- 46. The distribution of this traffic across the accesses to the wider road network is based on the broad catchments within the subdivision to each of these roads. This leads to an assumption that:
 - Dunns Crossing Road Northern primary access accommodates approximately 22% of the Plan Change traffic;
 - ii. Dunns Crossing Road Central primary access accommodates approximately 40% of the Plan Change traffic;
 - iii. Dunns Crossing Road Southern primary access accommodates approximately 19% of the Plan Change traffic; and
 - iv. Dunns Crossing Road Southern secondary access accommodates approximately 19% of the Plan Change traffic.
- 47. The traffic has also been distributed across the wider road network in accordance with information provided from the Rolleston traffic model from 2028. This used data from the residential development coded in that model for the Skellerup Block. This distribution is included on the figures included in **Appendix 2**.

Assessment of Effects

- 48. Key matters for the assessment of transport effects associated with the proposed Plan Change are considered to be:
 - i. Parking & Loading: Whether the District Plan rules adequately provide for the layout and provision of car parking and loading at the application site;
 - **ii.** Access Arrangements: Where the accesses are anticipated to operate safely and efficiently and whether the District Plan rules adequately provide for access. Also, the internal roading pattern proposed in the ODP and the associated rules and formation standards; and



- **iii. Wider Network Effects:** Whether the effects of the proposed activity can be satisfactorily accommodated by the surrounding road network. Whether the proposed Plan Change will be accessible by a range of transport modes.
- 49. The above matters are assessed in turn in the following sections.

Parking & Loading

50. The District Plan rules regarding parking and loading will be adopted for this Plan Change. This is considered to be sufficient to confirm that parking and loading will be satisfactorily provided for in a functional and practical manner.

Access Arrangements

- 51. The following assessment has been undertaken using 2028 traffic volume data from the Rolleston Paramics model as a basis for the background traffic volumes. It is understood that this is an interim model, although it is considered to be a reasonable basis for the determining of background traffic on the road network¹⁰. It is understood this model includes:
 - i. A roundabout at the State Highway 1 / Dunns Crossing Road / Walkers Road intersection;
 - ii. Anticipated land use growth (and associated increase in traffic volumes) in Rolleston to 2028; and
 - iii. An assumption that 96 dwellings are constructed in the Holmes Block and 51 in the Skellerup Block.
- 52. In addition to the above, the proposed Plan Change traffic has been added to the network as described in previous sections of this report. The traffic flow diagrams that form the basis of the following assessment are contained in **Appendix 2** and these set out the calculation and distribution of the development generated traffic. These follow a process of:
 - i. Setting out the received network traffic data;
 - ii. Isolating the Holmes Block and Skellerup Block traffic volumes;
 - iii. Determining the distribution of traffic associated with the Holmes Block and Skellerup Block based on the above;
 - iv. Removing the Holmes Block and Skellerup Block traffic that was included in the model; and
 - v. Adding in the quantum of traffic associated with the Holmes Block and Skellerup Block as proposed in this Plan Change.
- 53. The following assessments are undertaken using the 'Base Plus Plan Change' traffic volumes from **Appendix 2**.

¹⁰ Note: this assessment does not consider or attempt to evaluate the implications of traffic associated with the *potential* future rezoning of other land.



Holmes Block

Dunns Crossing Road / Newman Road / Access

- 54. The Dunns Crossing Road / Newman Road / Site Access intersection has been modelled as a cross-road, with Dunns Crossing Road having the priority. It has also been assumed that the speed environment would be reduced to 50km/hr with the urbanisation of the western side of Dunns Crossing Road.
- 55. The concept layout for this intersection is illustrated in **Figure 7** (which includes a new right turn bay on Newman Road), with the intersection modelling results being included in **Appendix 3**. These results are summarised as:
 - i. AM Peak Hour: Overall the intersection is considered to operate satisfactorily, with no movement being worse than Level of Service C¹¹. The degree of saturations are also lower than the practical threshold for this type of intersection¹²; and
 - ii. PM Peak Hour: Overall the intersection is considered to operate satisfactorily. The worst Level of Service is E, which occurs on the through and right turn movements from the site access and the right turn out of Newman Road. This is considered to be acceptable given this occurs in the weekday PM peak hour on movements that are not high volume. The degree of saturations are again lower than the practical threshold for this type of intersection.

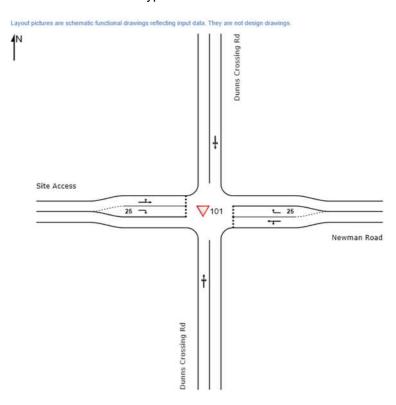


Figure 7: Dunns Crossing Rd / Newman Rd / Access Concept Arrangement

¹¹ Where 'A' is considered to be excellent operation, 'E' is at capacity and 'F' is over-capacity.

¹² The practical threshold for degree of saturation for unsignalized intersections is considered to be 0.85.



56. Overall, this access is predicted to operate satisfactorily in the 2028 peak periods.

Dunns Crossing Road / Granite Drive / Access

- 57. The Dunns Crossing Road / Granite Drive / Site Access intersection has been modelled as a cross-road, with Dunns Crossing Road having the priority. It has again been assumed that the speed environment would be reduced to 50km/hr.
- 58. The concept layout for this intersection is illustrated in **Figure 8**, with the intersection modelling results being included in **Appendix 4**. These results are summarised as:
 - AM Peak Hour: Overall the intersection is considered to operate satisfactorily, with no movement being worse than Level of Service C. The degree of saturations are also lower than the practical threshold for this type of intersection; and
 - ii. PM Peak Hour: Overall the intersection is considered to operate satisfactorily, with no movement being worse than Level of Service E, which is the through and right turn out of Granite Drive. This is again considered to be acceptable given this this the 2028 PM peak hour. The degree of saturations are also lower than the practical threshold for this type of intersection.

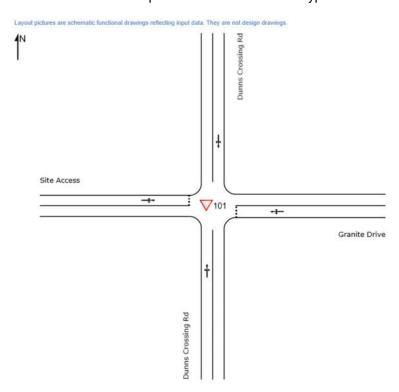


Figure 8: Dunns Crossing Rd / Granite Dr / Access Concept Arrangement

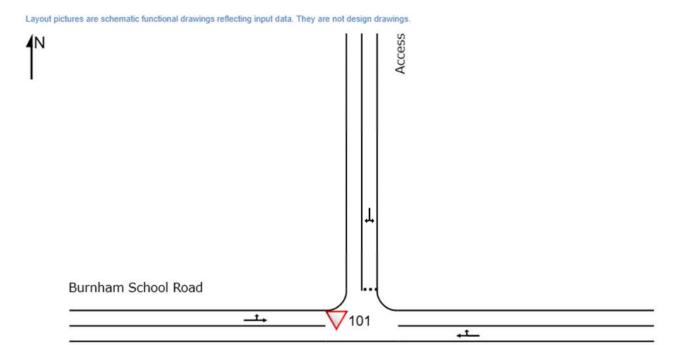
59. Overall, this access is predicted to operate satisfactorily in the 2028 peak periods.

Burnham School Road / Access

60. The Burnham School Road / Site Access intersection has been modelled as a T-intersection, with Burnham School Road having the priority. The concept layout for this intersection is illustrated in **Figure 9**, with the intersection modelling results being included in **Appendix 5**. These results are summarised as the intersection is predicted to operate satisfactorily, with no movement being worse than Level of



Service A. The degree of saturations are also lower than the practical threshold for this type of intersection.



Burnham School Road

Figure 9: Burnham School Rd / Access Concept Arrangement

61. Overall, this access is predicted to operate satisfactorily in the 2028 peak periods.

Skellerup Block

- 62. The Dunns Crossing Road / Site Access intersections have been modelled as T-intersections, with Dunns Crossing Road having the priority. The concept layout for these intersections is illustrated in **Figure 10**, with the intersection modelling results being included in:
 - i. Appendix 6: Dunns Crossing Road / Northern Primary Access;
 - ii. Appendix 7: Dunns Crossing Road / Central Primary Access;
 - iii. Appendix 8: Dunns Crossing Road / Southern Primary Access; and
 - iv. Appendix 9: Dunns Crossing Road / Southern Secondary Access.



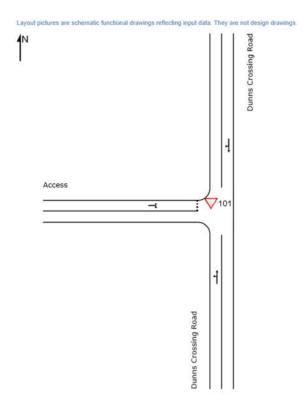


Figure 10: Dunns Crossing Rd / Access Concept Arrangement

- 63. These results of these intersection models are summarised as:
 - AM Peak Hour: Overall the intersection is considered to operate satisfactorily, with no movement being worse than Level of Service B. The degree of saturations are also lower than the practical threshold for this type of intersection; and
 - ii. PM Peak Hour: Overall the intersection is considered to operate satisfactorily, with no movement being worse than Level of Service C. The degree of saturations are also lower than the practical threshold for this type of intersection.
- 64. Overall, these accesses are predicted to operate satisfactorily in the 2028 peak periods.

Internal Access Roads

- 65. The internal access roads and intersections are proposed to comply with the District Plan requirements and will again be subject to road safety audits. This is considered to be sufficient to confirm the internal network will operate safely and efficiently.
- 66. Access to individual properties is also proposed to comply with the District Plan requirements. Any noncompliances will either be sought at subdivision stage or addressed on an individual basis and the effects of this on safety and efficiency considered at that stage.
- 67. The above is considered to be sufficient to confirm that the internal transport network will be safe and efficient.



Wider Effects

68. The following assessment sets out the traffic effects at key intersections on the wider road network. This assessment is undertaken using the 'Base Plus Plan Change' traffic volumes in **Appendix 2**.

SH1 / Dunns Crossing Road / Walkers Road

- 69. The traffic capacity assessment of this intersection has assumed that the roundabout will be constructed by the time significant development occurs within these Plan Change sites. It is noted that these sites are already zoned for residential development (albeit at a rural residential density), with the Holmes Block being permitted 97 lots and the Skellerup block 51 lots. As such, there is an element of development and associated traffic effects that could occur 'as of right' at present.
- 70. The concept arrangement for a roundabout at this location is illustrated in **Figure 11**, although a detailed design will need to be undertaken of this arrangement by the NZTA. It is assumed that the speed limit through this area is reduced to at least 80km/hr to safely accommodate the proposed roundabout.

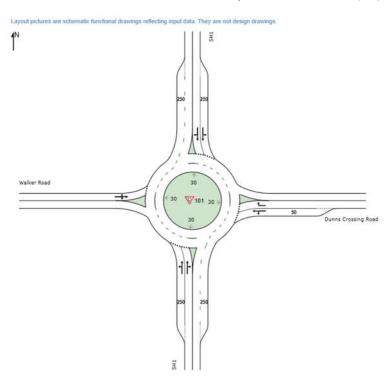


Figure 11: SH1 / Dunns Crossing Rd / Walkers Rd Roundabout Concept

- 71. The intersection modelling results being included in **Appendix 10**, which are summarised as:
 - i. AM Peak Hour: Overall the intersection is predicted to operate at Level of Service A, with no movement being worse than Level of Service B. The degree of saturations are also lower than the practical threshold for this type of intersection; and
 - ii. PM Peak Hour: Overall the intersection is predicted to operate at Level of Service A, with no movement being worse than Level of Service B. The degree of saturations are also lower than the practical threshold for this type of intersection.
- 72. Overall, this intersection is predicted to operate satisfactorily in the 2028 peak periods.



Burnham School Road / Dunns Crossing Road

73. An upgrade is understood to be planned for this location leading to a traffic signal controlled intersection. As such, traffic signals are the basis of the modelling undertaken to determine whether the proposed Plan Changes can be accommodated by the surrounding road network. The concept arrangement for traffic signals at this location is illustrated in **Figure 12**, although a detailed design will need to be undertaken of this arrangement by the Council in due course. It is anticipated this intersection would fit within the existing road corridor. A nominal 90 second cycle-time has been adopted for the purpose of this assessment.

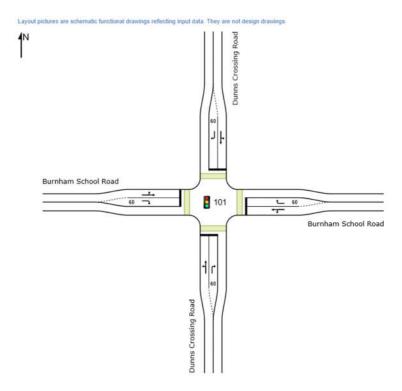


Figure 12: Burnham School Rd / Dunns Crossing Rd Traffic Signal Concept

- 74. The intersection modelling results being included in **Appendix 11**, which are summarised as:
 - i. AM Peak Hour: Overall the intersection is predicted to operate at Level of Service C, with no movement being worse than Level of Service D. The degree of saturations are also lower than the practical threshold of 0.9 for signalised intersections; and
 - ii. PM Peak Hour: Overall the intersection is predicted to operate at Level of Service C, with no movement being worse than Level of Service D. The degree of saturations are again lower than the practical threshold for this type of intersection.
- 75. Overall, this intersection is predicted to operate satisfactorily in the 2028 peak periods.

Brookside Road / Dunns Crossing Road

76. This intersection is a cross-road, with Dunns Crossing Road having the priority. The existing arrangement as illustrated in **Figure 13** has been used for the traffic model, with the results being included in **Appendix 12**. These results are summarised as:



- i. AM Peak Hour: Overall the intersection is considered to operate satisfactorily, with no movement being worse than Level of Service D. The degree of saturations are also lower than the practical threshold for this type of intersection; and
- ii. PM Peak Hour: Overall the intersection is considered to operate satisfactorily, with no movement being worse than Level of Service D. The degree of saturations are also lower than the practical threshold for this type of intersection.

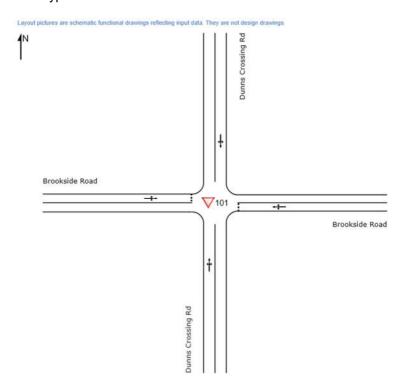


Figure 13: Brookside Rd / Dunns Crossing Rd Intersection Layout

77. Overall, this intersection is predicted to operate satisfactorily in the 2028 peak periods.

Lowes Road / Dunns Crossing Road

- 78. This intersection is a T-intersection, with Dunns Crossing Road having the priority. The existing arrangement (as illustrated in **Figure 14**) has been used for the traffic model, with the results being included in **Appendix 13**. These results are summarised as:
 - i. AM Peak Hour: Overall the intersection is considered to operate satisfactorily, with no movement being worse than Level of Service C. The degree of saturations are also lower than the practical threshold for this type of intersection; and
 - ii. PM Peak Hour: Overall the intersection is considered to operate satisfactorily, with no movement being worse than Level of Service E. That said, the degree of saturation for the right turn out of Lowes Road is predicted to be 0.889, which is greater than the practical threshold of 0.85. This indicates that large queues and delays could occur on this approach with small increases in traffic volumes.



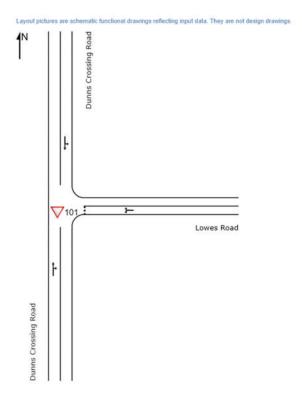


Figure 14: Dunns Crossing Rd / Lowes Rd Intersection Layout

- 79. Given the predicted operation in the weekday PM peak, a concept arrangement for traffic signals has been tested at this intersection. The concept layout is illustrated in **Figure 15**, which is anticipated to fit within the road corridor. This model assumes a 90 second cycle-time for the purpose of this assessment.
- 80. The results of this traffic model are contained in **Appendix 14**, which indicate:
 - i. AM Peak Hour: Overall the intersection is predicted to operate at Level of Service B, with no movement being worse than Level of Service D. The degree of saturations are also lower than the practical threshold for signalised intersections; and
 - ii. PM Peak Hour: Overall the intersection is predicted to operate at Level of Service B, with no movement being worse than Level of Service D. The degree of saturations are again lower than the practical threshold for this type of intersection.
- 81. This is considered to be sufficient to confirm that this intersection can be satisfactorily upgraded to accommodate the predicted future traffic volumes at this location.



Lowes Road

Lowes Road

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.

Figure 15: Dunns Crossing Rd / Lowes Rd Traffic Signal Intersection Layout

Dunns Crossing Road / Goulds Road / Selwyn Road

- 82. The existing arrangement at this intersection is illustrated in **Figure 3**, which indicates it comprises a closely spaced T-intersection (Goulds Road / Dunns Crossing Road) and a cross-road (Goulds Road / Selwyn Road). This intersection arrangement is used as the basis of traffic modelling at this location, with the two intersections being linked in SIDRA.
- 83. The results of this traffic model are included in **Appendix 15**, which indicate that:
 - AM Peak Hour: Overall the intersection is considered to operate satisfactorily, with no movement being worse than Level of Service C. The degree of saturations are also lower than the practical threshold for this type of intersection; and
 - ii. PM Peak Hour: Overall the intersection is considered to operate satisfactorily, with no movement being worse than Level of Service B. The degree of saturations are also lower than the practical threshold for this type of intersection.
- 84. Overall, this intersection is predicted to operate satisfactorily from a traffic capacity perspective in the 2028 peak periods.



85. The crash review undertaken of this intersection in paragraph 22 indicates there is currently a trend in which drivers exiting the Goulds Road approaches are failing to give-way to traffic on Selwyn Road. It is anticipated that the urbanisation of this area (as the adjacent residential zoned land is developed) would better highlight the intersection and reduce the speed limit on Selwyn Road. This may address the crash record at this location. If crashes continue after this area is urbanised, there would be value in Council rationalising the layout.

Accessibility

- 86. There is no public transport in the immediate vicinity of the Plan Change sites at present. The closest bus service is the Yellow Line, which undertakes a loop on Brookside Road, a short segment of Dunns Crossing Road and then Lowes Road to head back to Rolleston Town Centre. The Plan Change sites doe include road networks that would enable bus services to route through the sites on the Primary Road network, so these could accommodate passenger transport in the future.
- 87. The proposed site will include pedestrian and cycle links within the Plan Change area, as well as providing small local commercial areas that are intended to provide for everyday shopping and further reduce the need to travel by car for local trips. It is also noted that the Holmes Block has a boundary with the West Rolleston Primary School and there is a pre-school at the Burnham School Road / Dunns Crossing Road intersection. These place education facilities within walking distance of this site.
- 88. These Plan Change sites are within approximately 4.5km of Rolleston Town Centre¹³, which means residents will be able to comfortably cycle to / from the shopping and employment in that area.
- 89. The above is considered to be sufficient to confirm that the site has access to a range of everyday facilities without the need to drive.

Summary & Conclusion

Summary

- 90. The Plan Change proposed would enable the development of up to 1,150 residential Lots plus a small commercial zone at the Holmes Block, plus up to 950 residential Lots plus a small commercial zone at the Skellerup Block.
- 91. Access to the Holmes Block would be via Dunns Crossing Road and Burnham School Road. The Dunns Crossing Road accesses are anticipated to be cross-road intersections with Newman Road and Granite Drive. Access to the Skellerup Block would be to Dunns Crossing Road, with the southern Primary Access having the potential to link to the road network of any future opposite subdivision.
- 92. The SH1 / Dunns Crossing Road / Walkers Road is assumed to be upgraded to a roundabout within the next three to four years, as has been advised by the NZTA and Council. This intersection is predicted to operate satisfactorily with the inclusion of Plan Change traffic.
- 93. It is understood that the Council intend to install traffic signals at the Dunns Crossing Road / Burnham School Road intersection. A concept arrangement has been tested and this layout can accommodate the traffic associated with the proposed Plan Change.

. .

¹³ Measured in a straight line.



- 94. The Dunns Crossing Road / Lowes Road intersection is predicted to operate over the practical capacity threshold with the Plan Change traffic added to the network. A concept traffic signal scheme has been tested at this location and was found to operate satisfactorily.
- 95. The traffic capacity of other intersections in the immediate vicinity of the Plan Change sites have been assessed and found to be acceptable.
- 96. The traffic capacity of the site accesses has been assessed and found to be acceptable. There will also be sufficient sight distance for these intersections to operate safely.

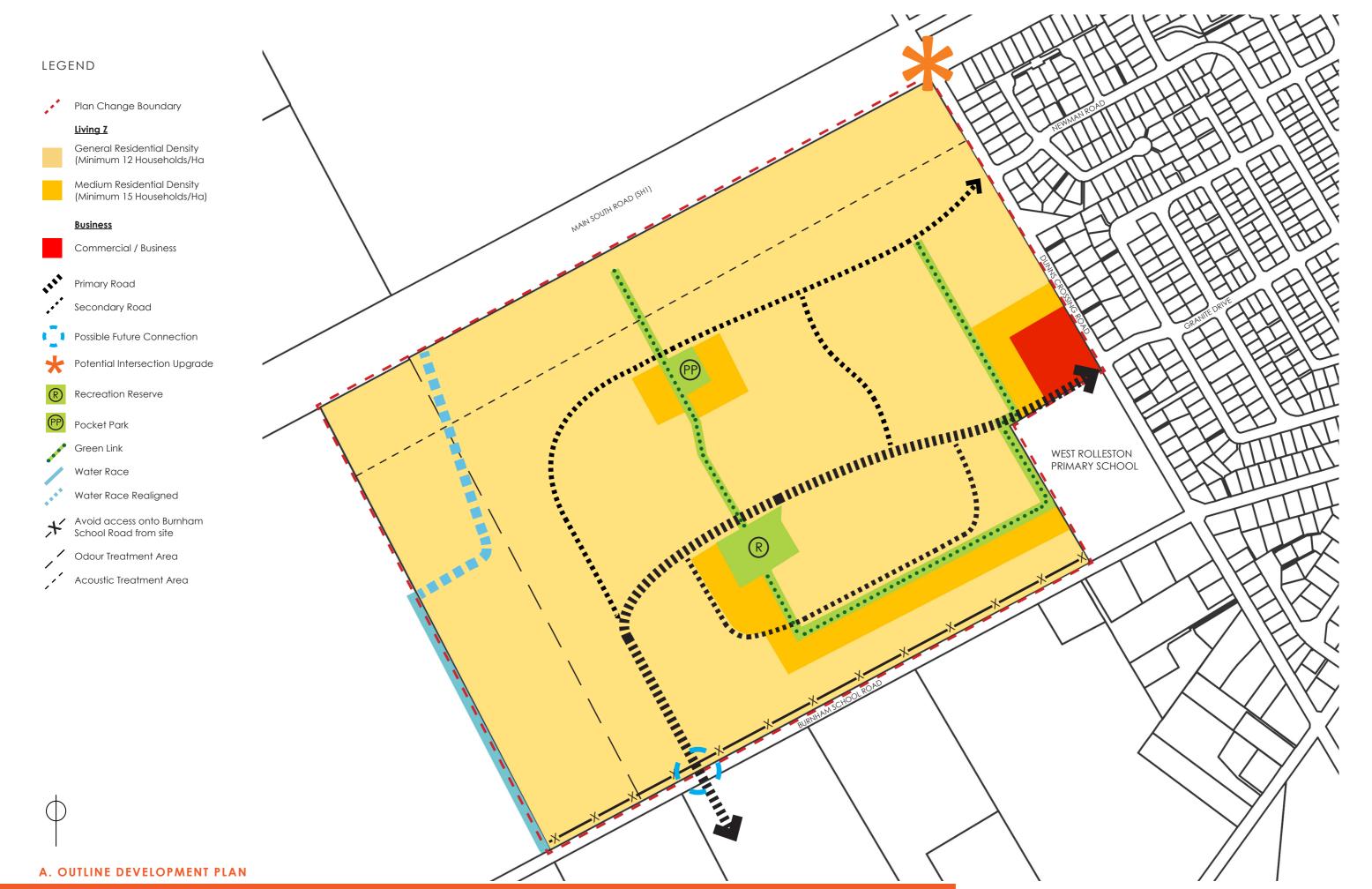
Conclusion

97. Overall and accounting for the off-site improvements outlined in this report, it is considered that the transport effects of the proposed Plan Change will be acceptable on the surrounding transport network.



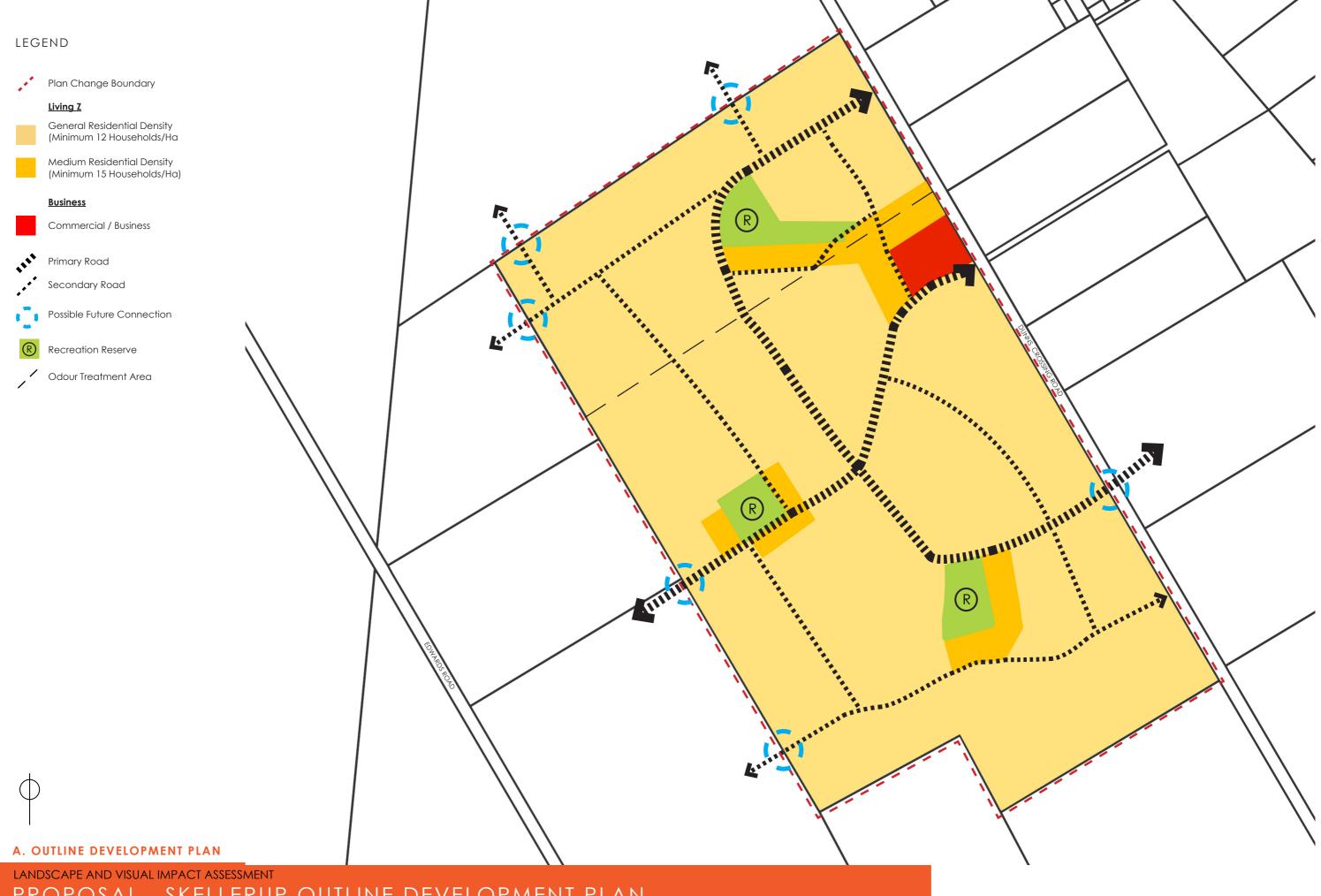
Appendix 1

Outline Development Plans



PROPOSAL - HOLMES OUTLINE DEVELOPMENT PLAN

ROLLESTON WEST PLAN CHANGE



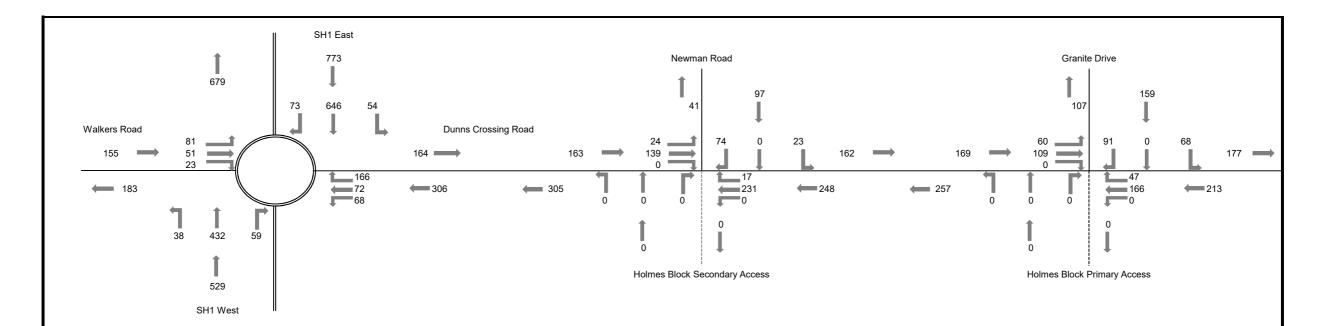
PROPOSAL - SKELLERUP OUTLINE DEVELOPMENT PLAN

ROLLESTON WEST PLAN CHANGE



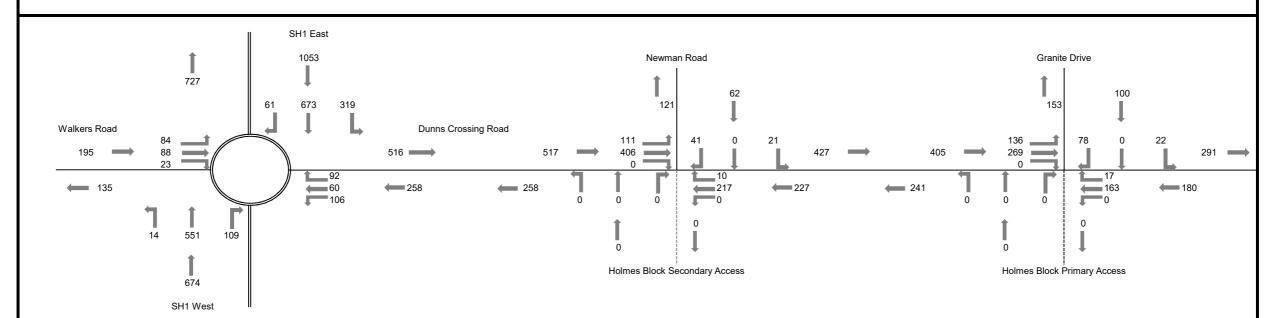
Appendix 2

Network Traffic Volumes



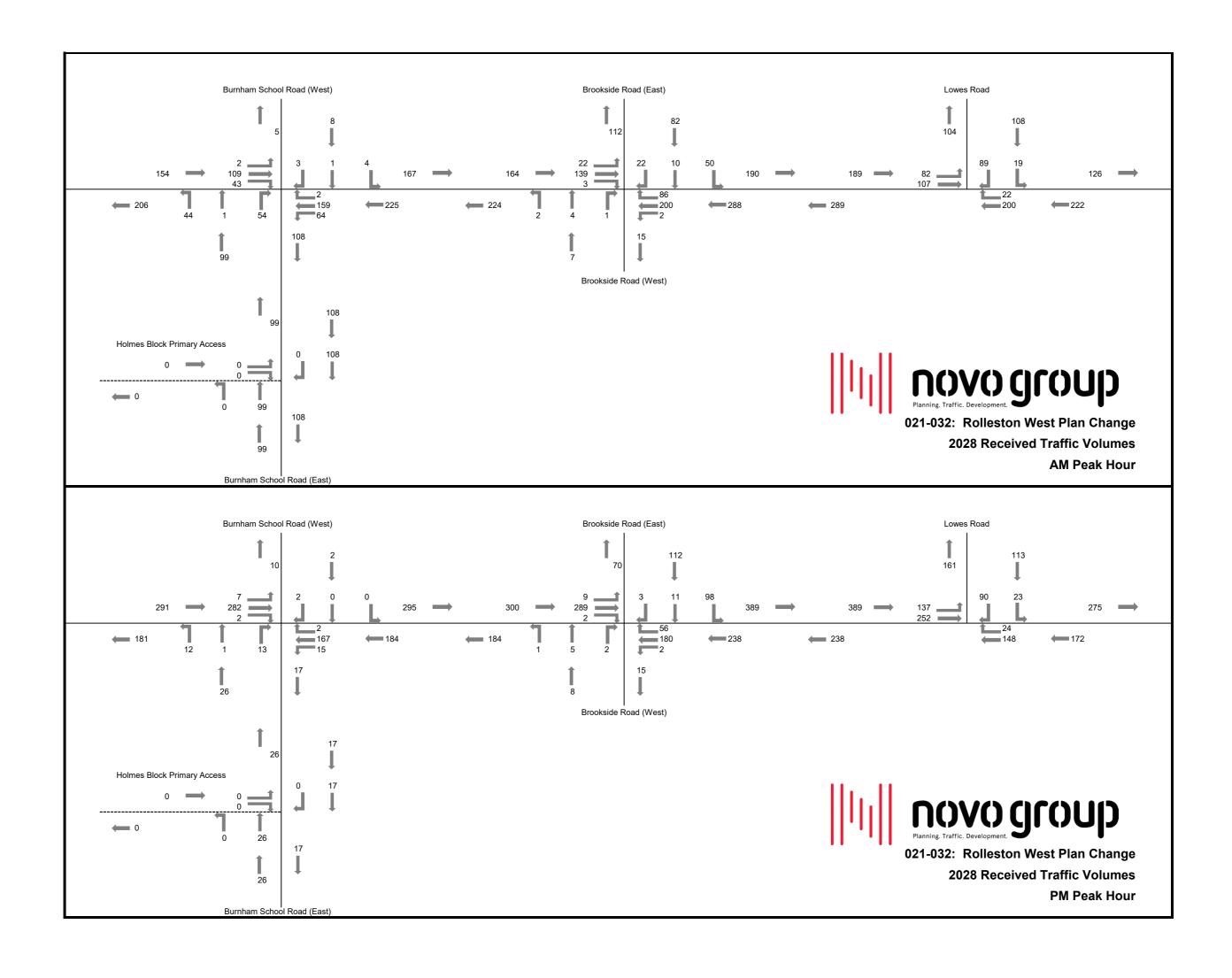


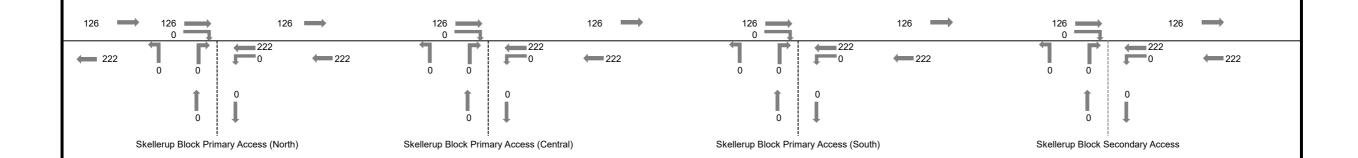
021-032: Rolleston West Plan Change 2028 Received Traffic Volumes AM Peak Hour





021-032: Rolleston West Plan Change 2028 Received Traffic Volumes PM Peak Hour





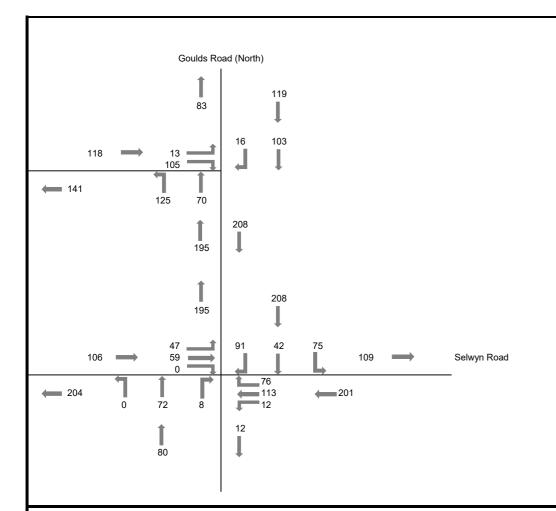


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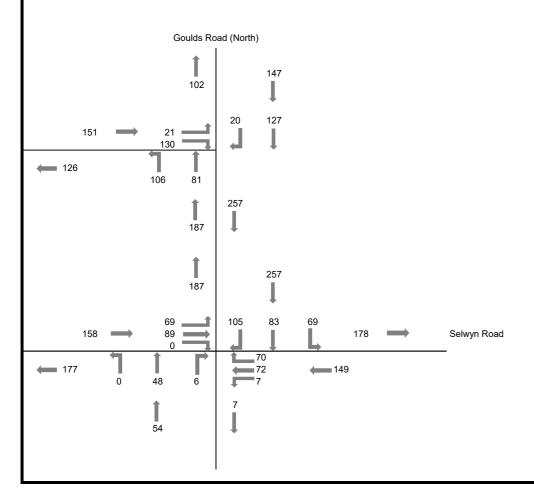


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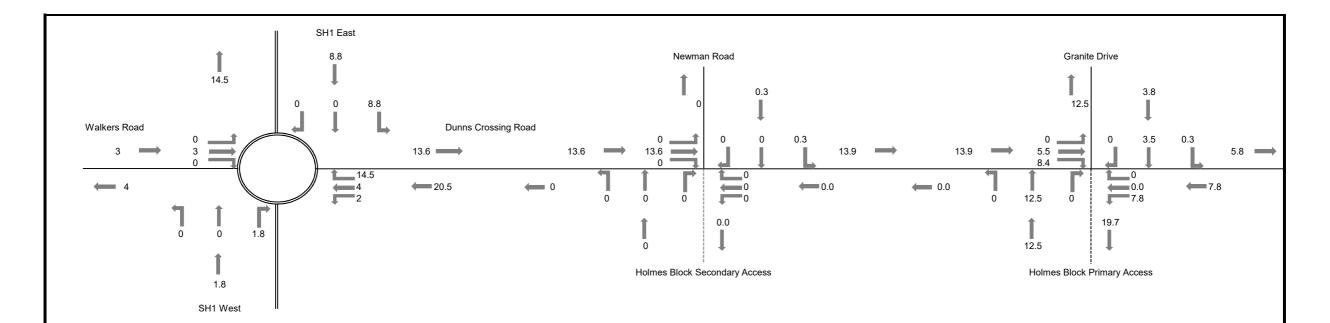


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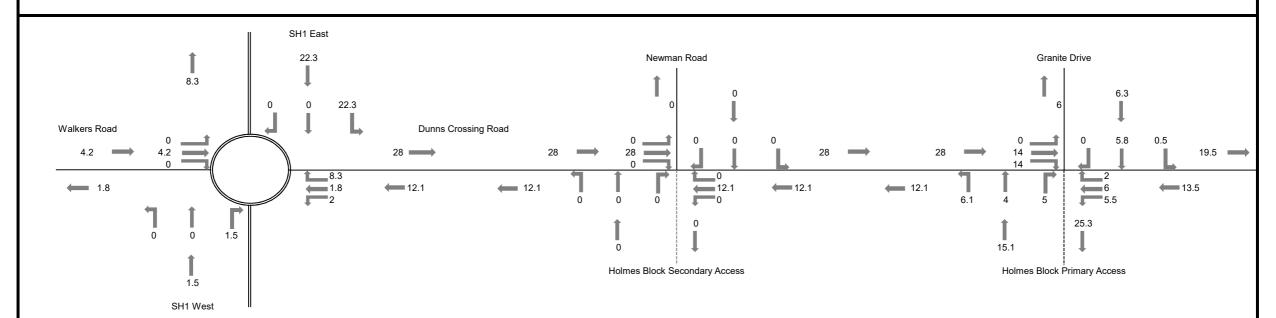


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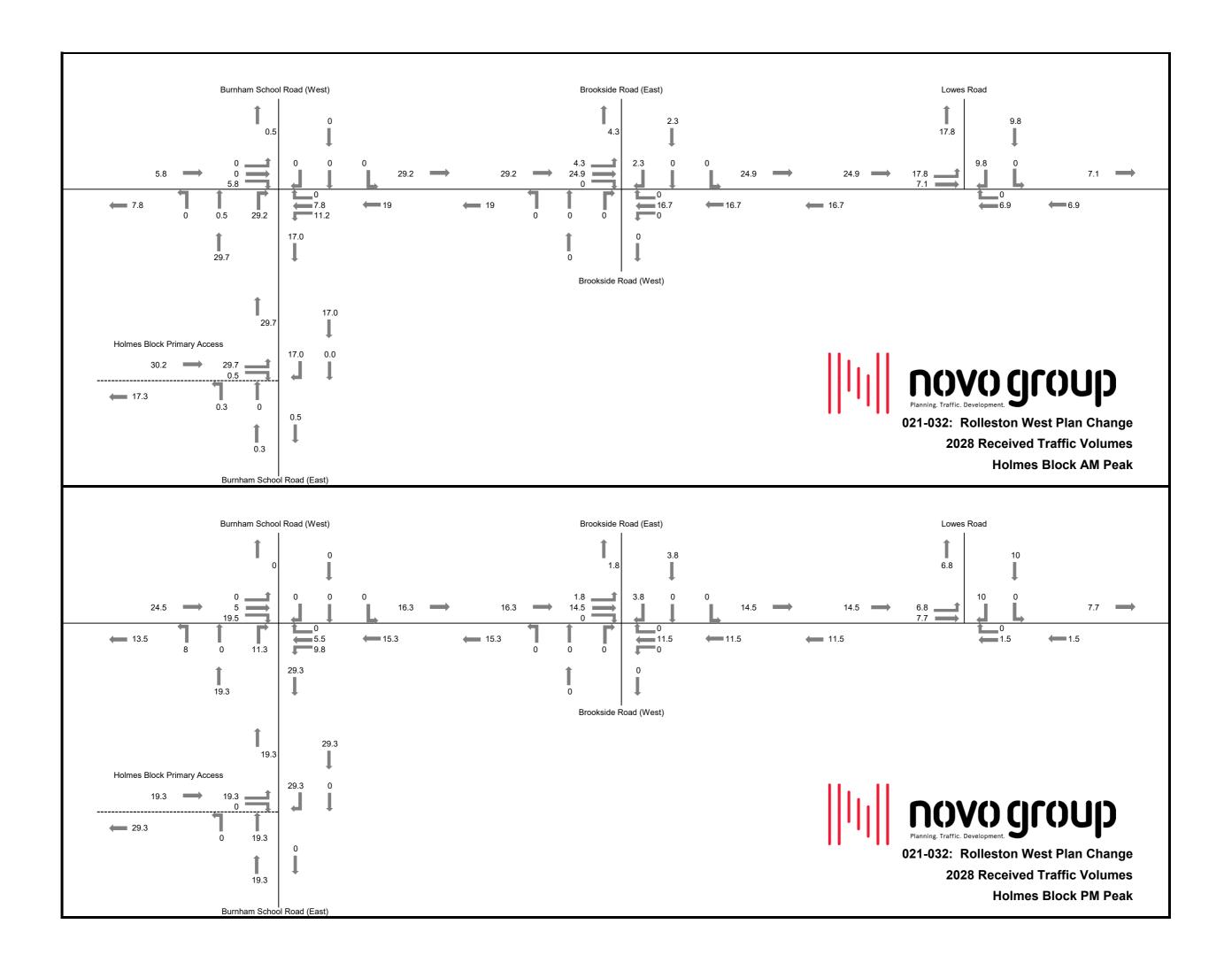


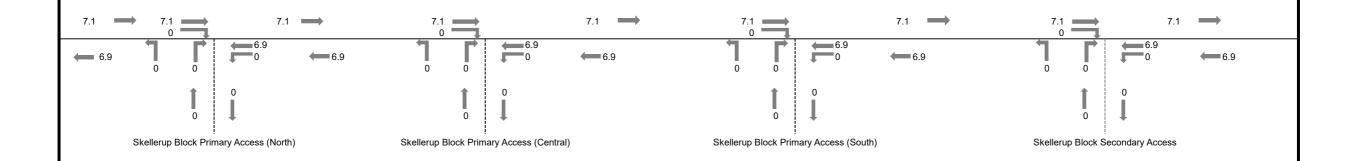
021-032: Rolleston West Plan Change 2028 Received Traffic Volumes Holmes Block AM Peak





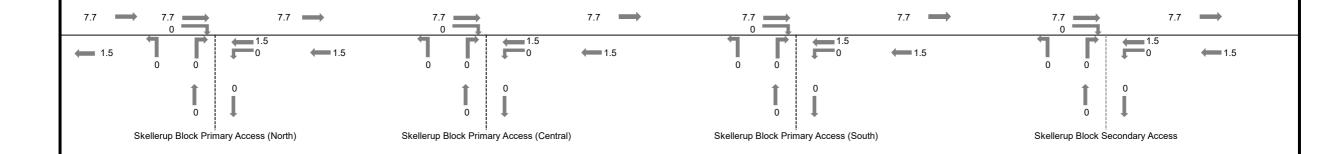
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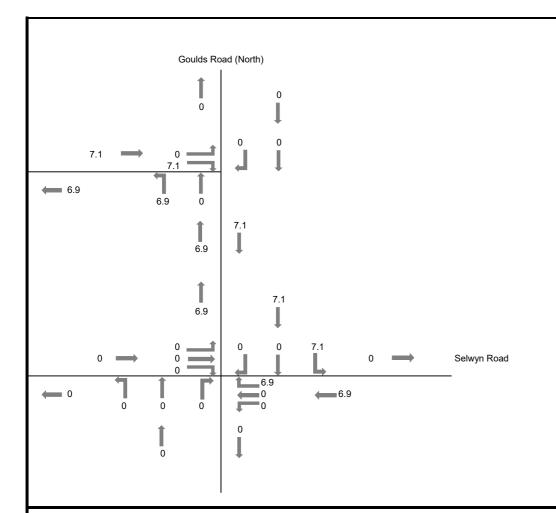


021-032: Rolleston West Plan Change 2028 Received Traffic Volumes Holmes Block AM Peak



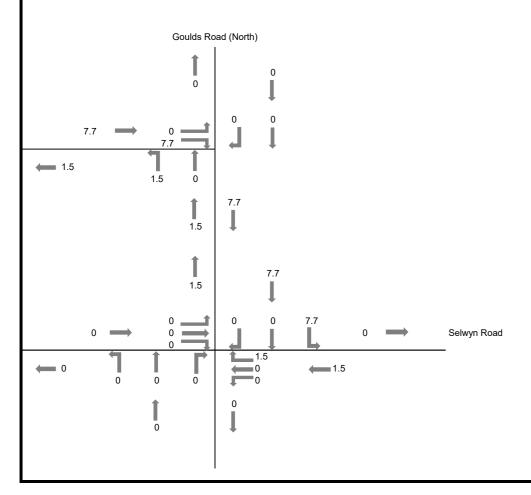


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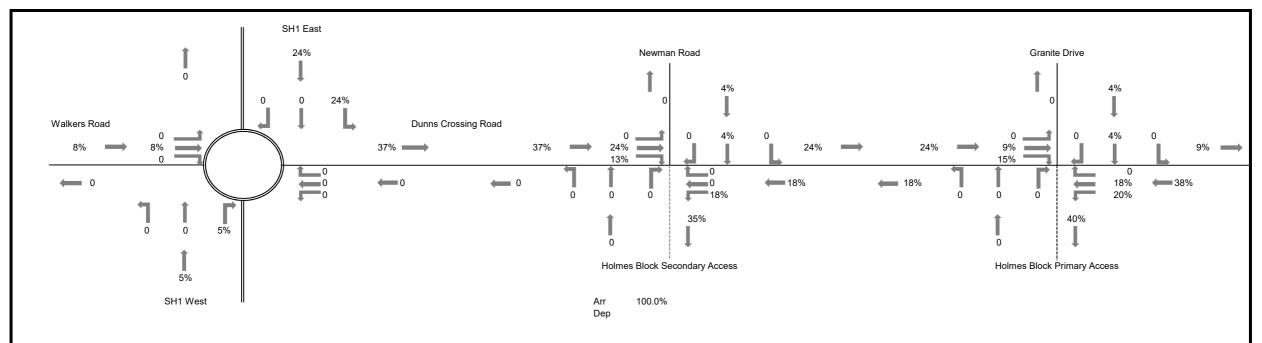


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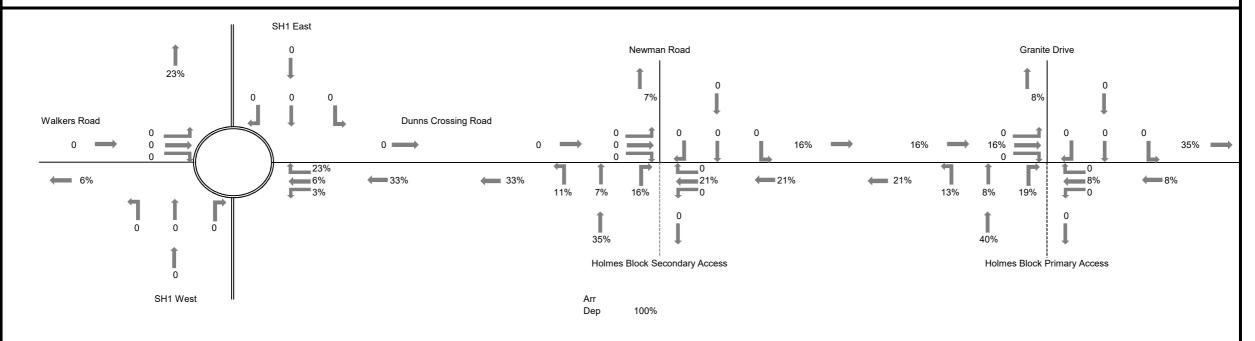


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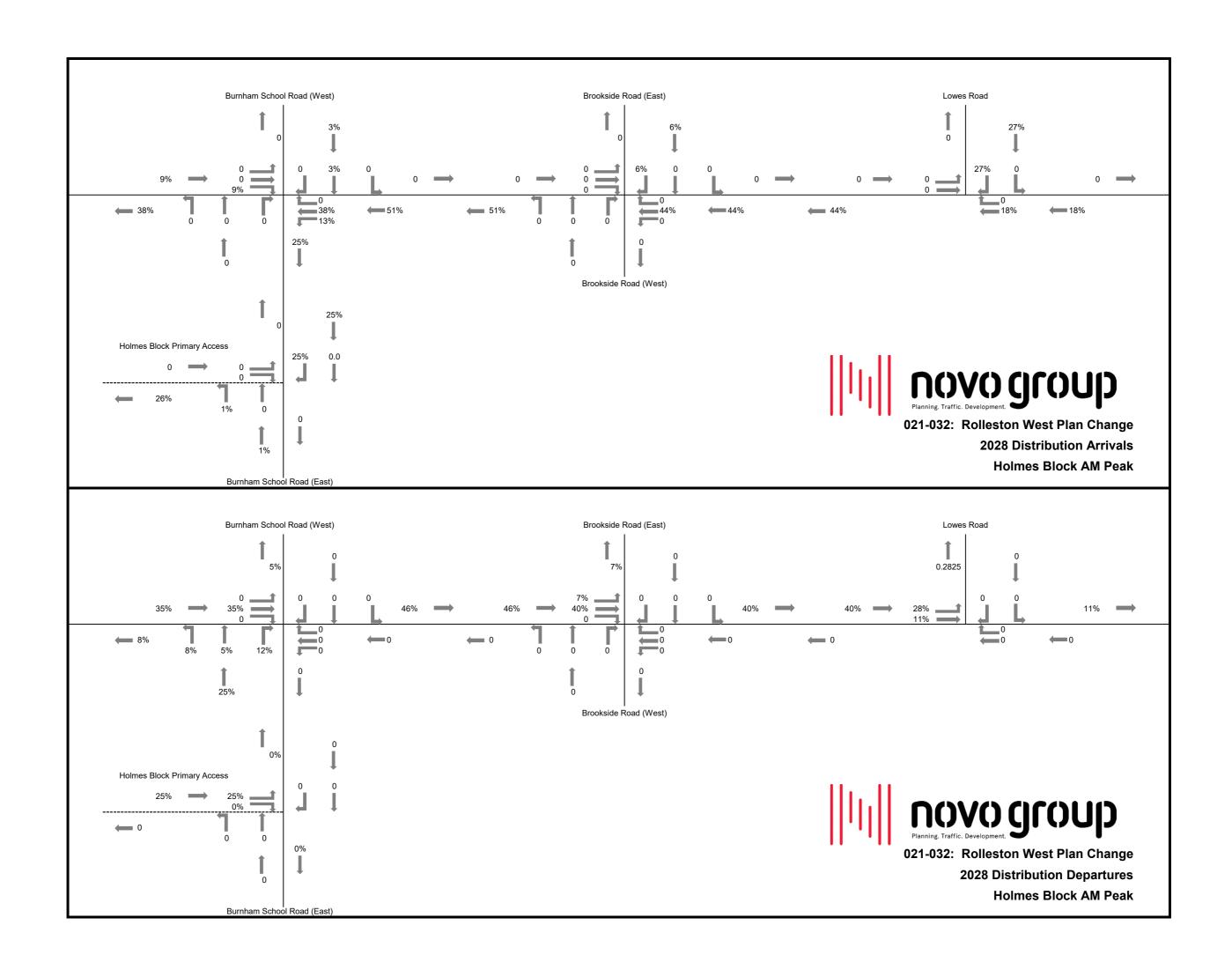


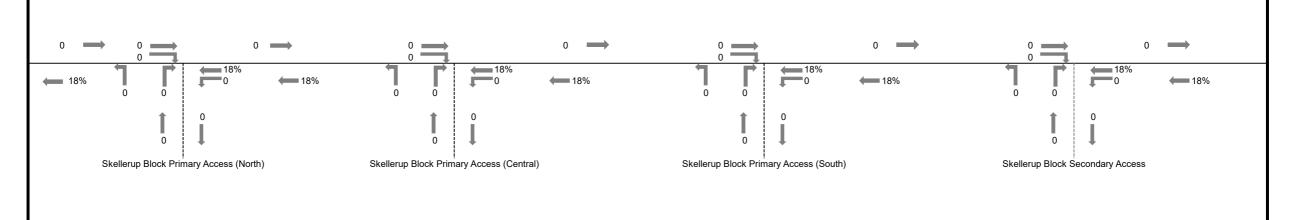
021-032: Rolleston West Plan Change 2028 Distribution Arrivals Holmes Block AM Peak





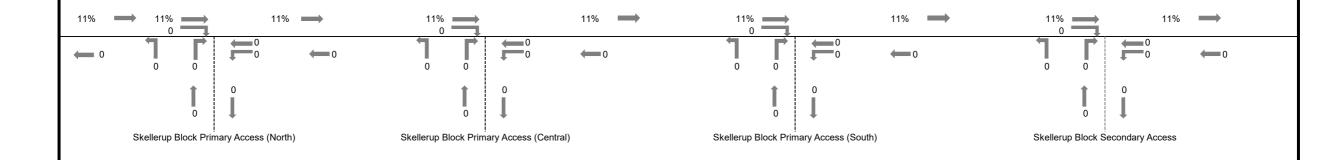
021-032: Rolleston West Plan Change 2028 Distribution Departures Holmes Block AM Peak





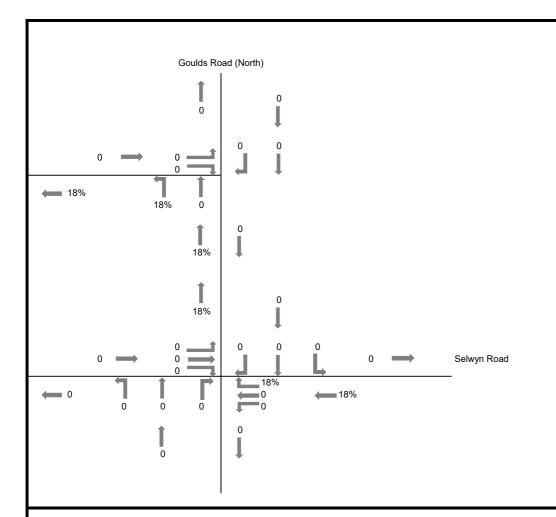


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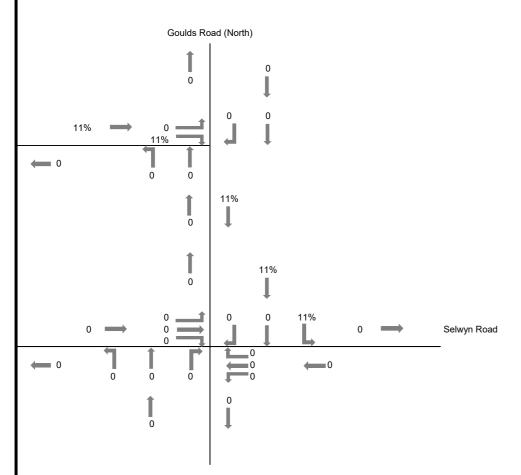


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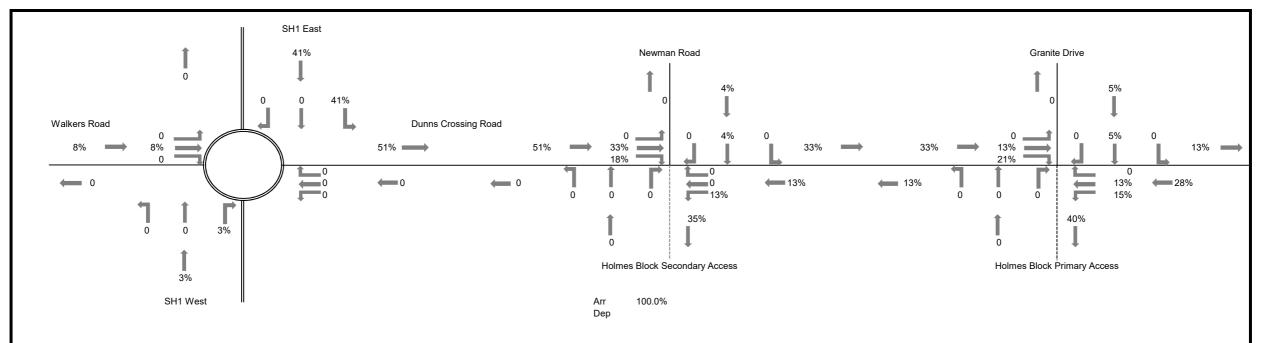


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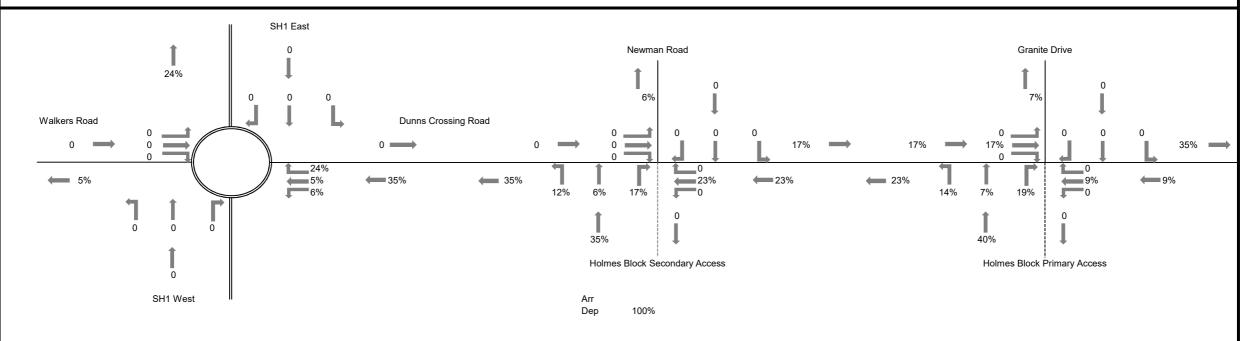


021-032: Rolleston West Plan Change 2028 Distribution Departures Holmes Block AM Peak



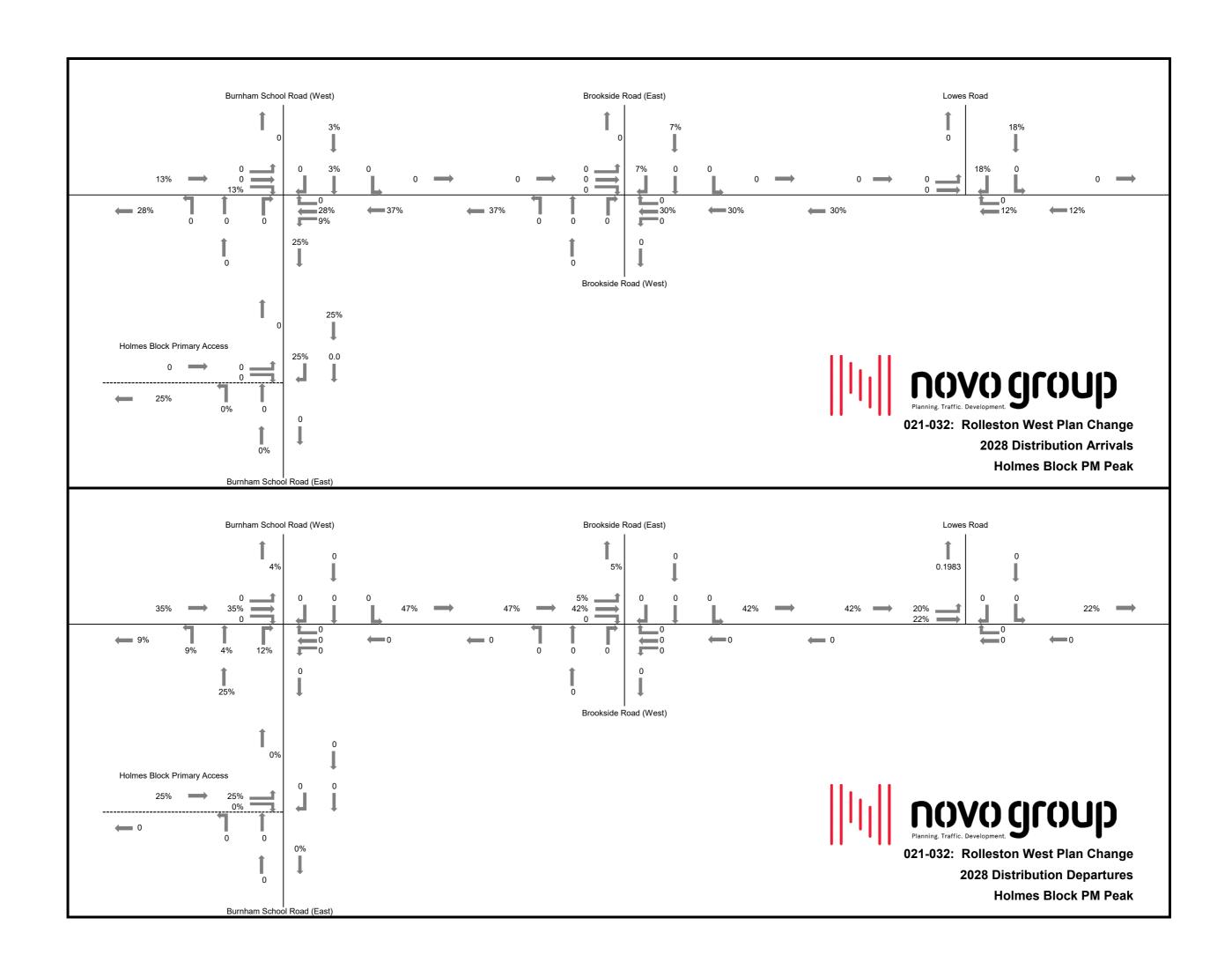


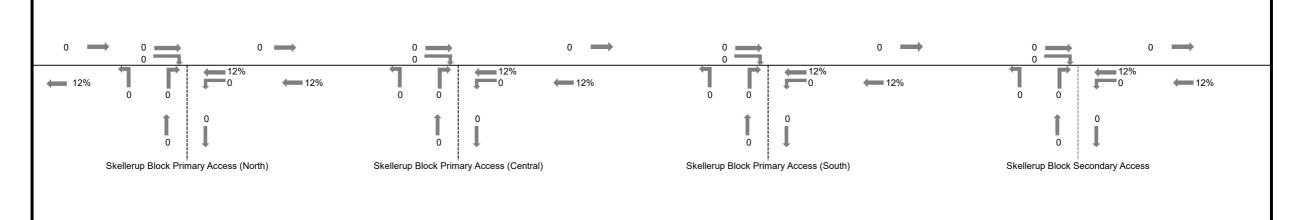
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021-032: Rolleston West Plan Change 2028 Distribution Departures Holmes Block PM Peak





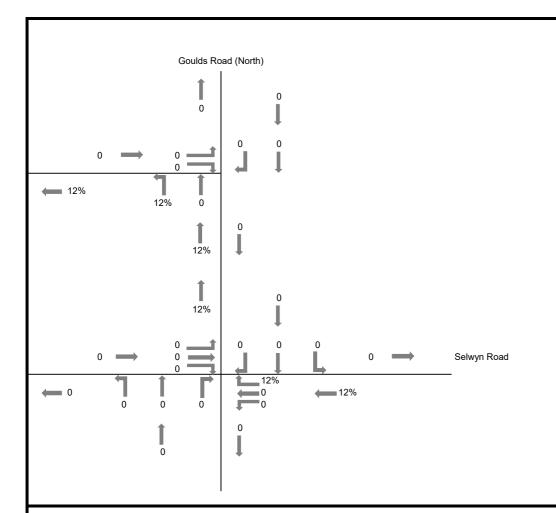


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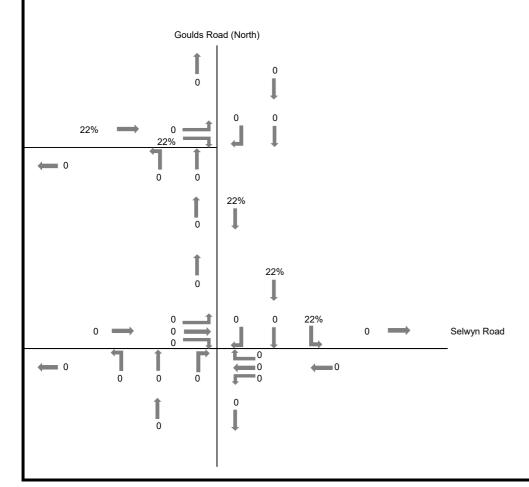


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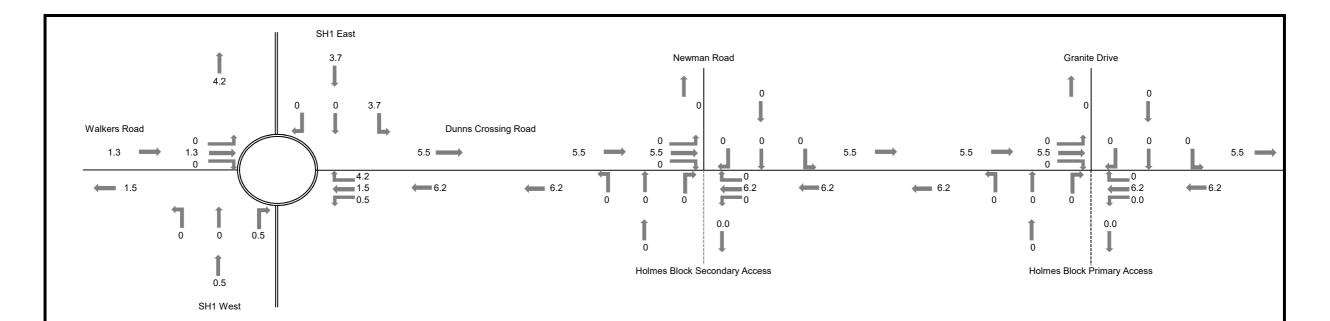


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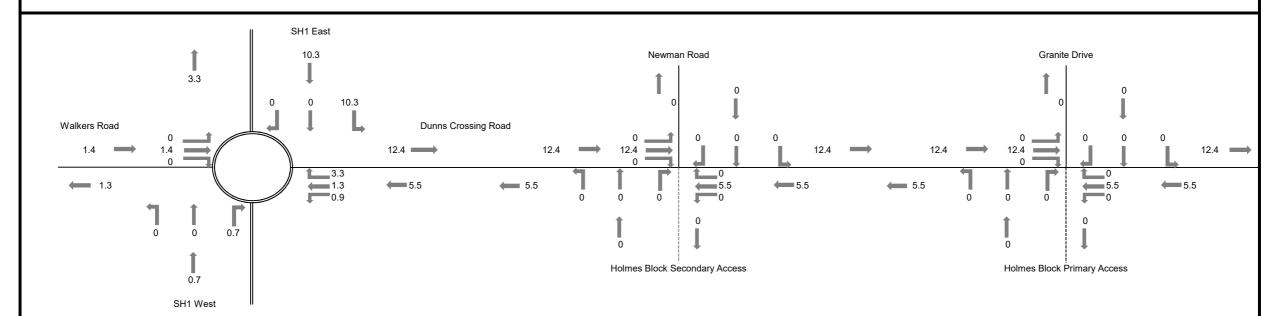


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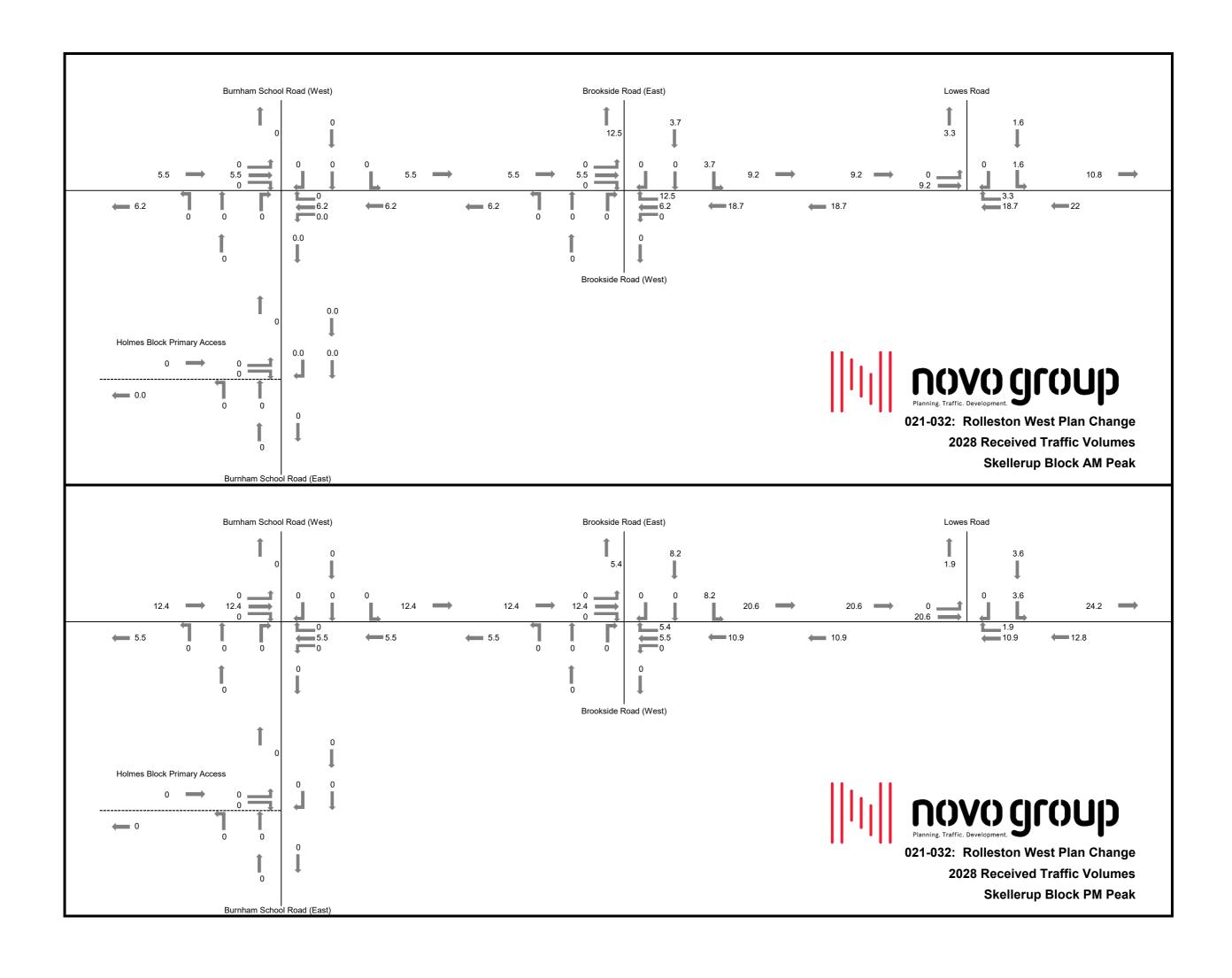


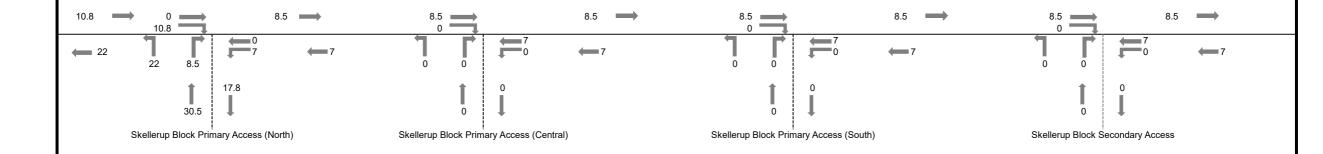
021-032: Rolleston West Plan Change 2028 Received Traffic Volumes Skellerup Block AM Peak





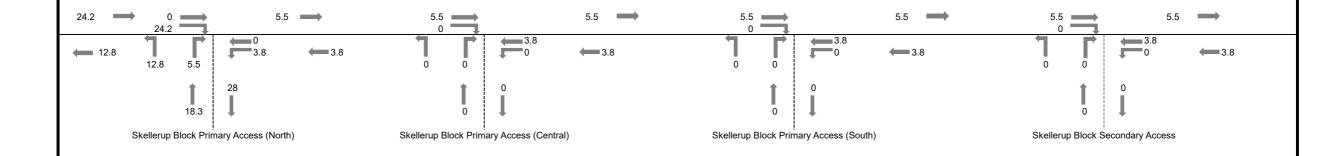
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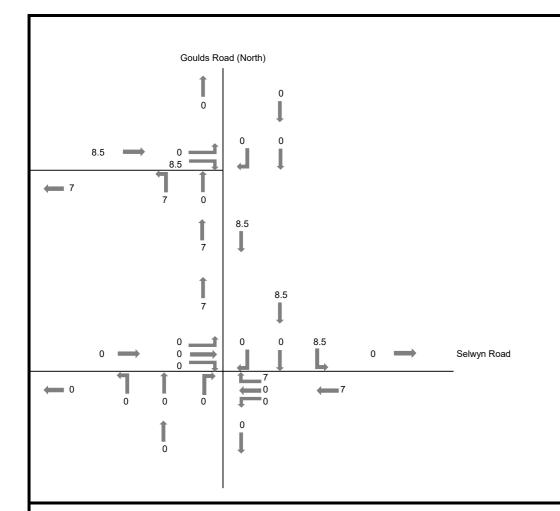


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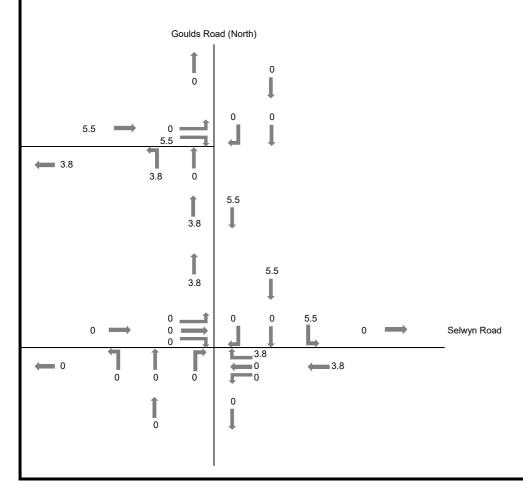


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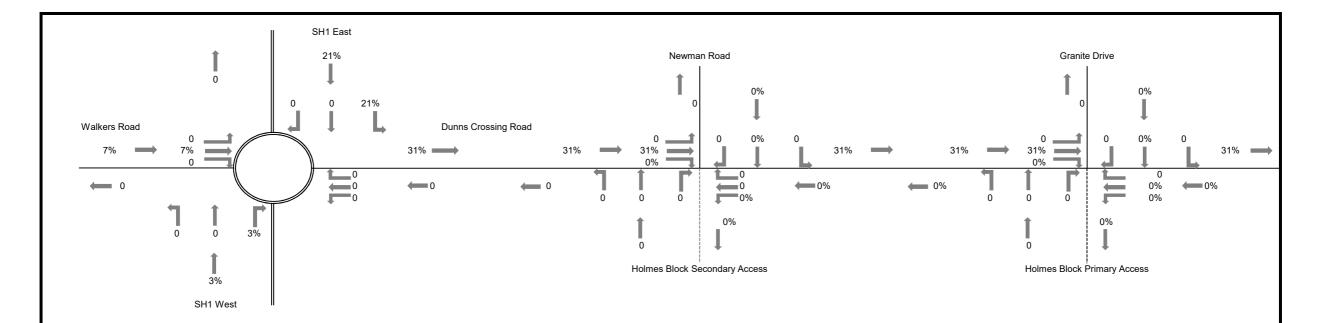


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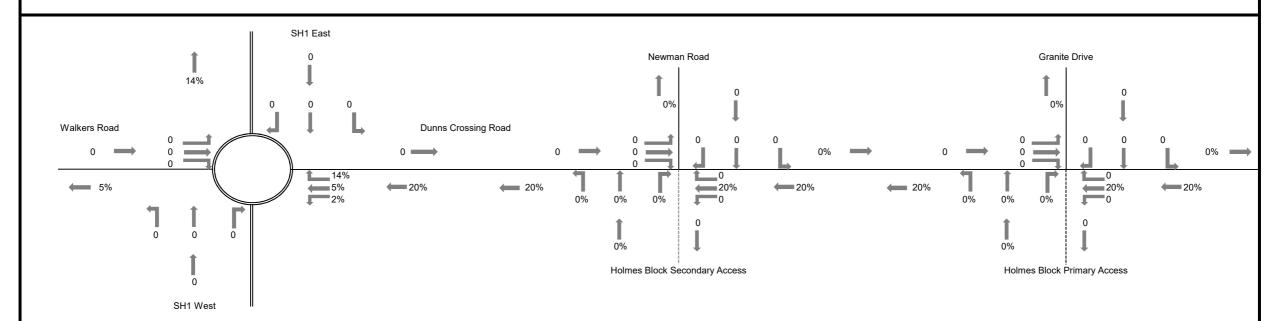


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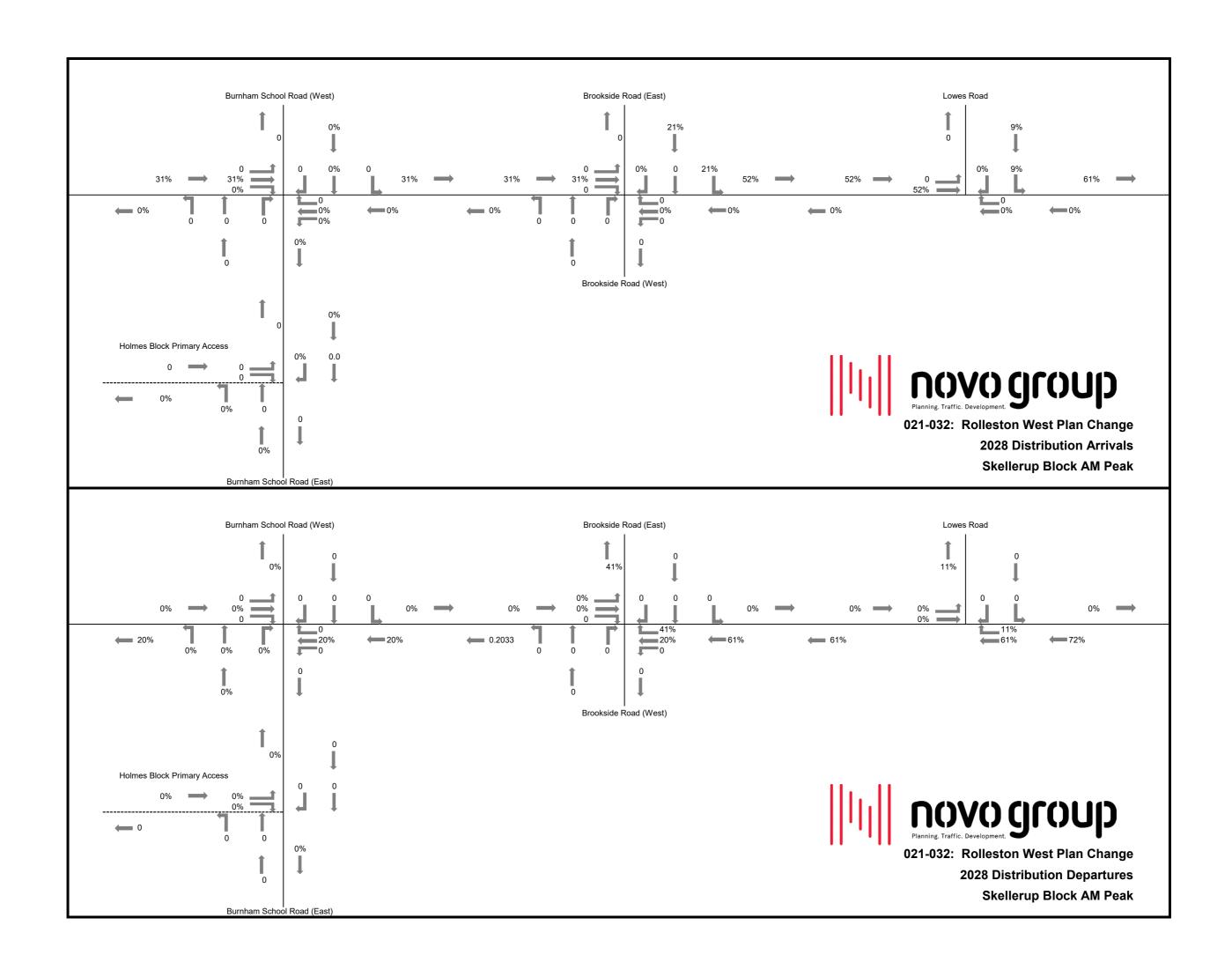


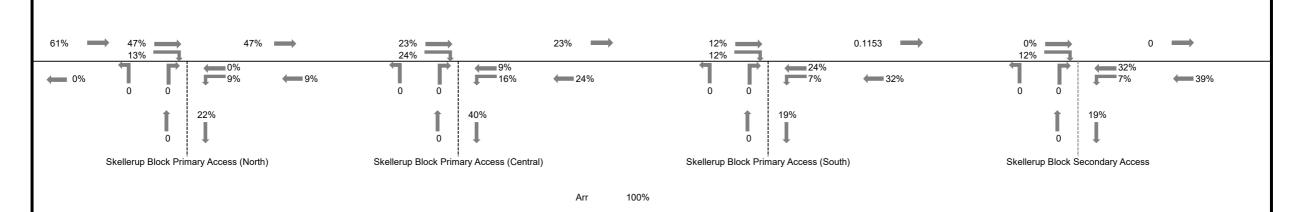
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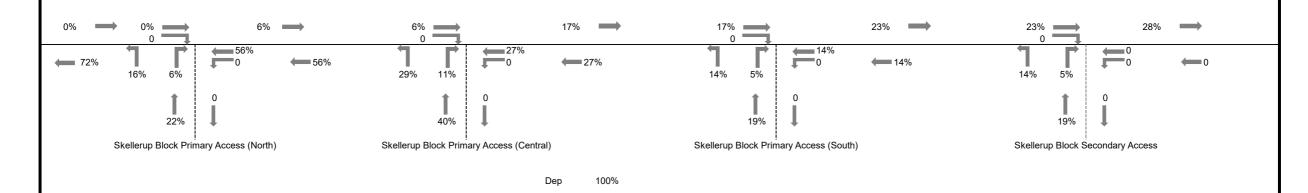
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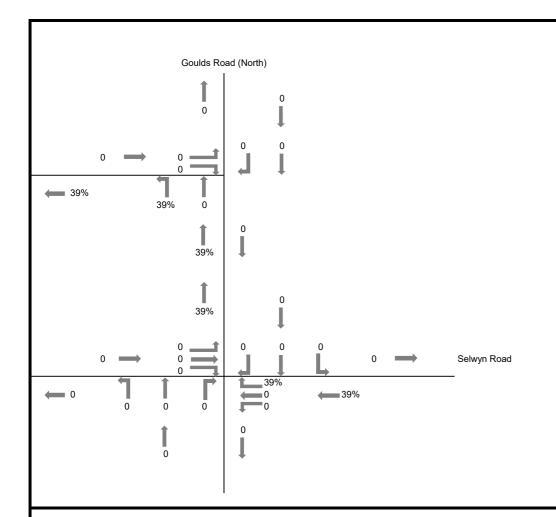


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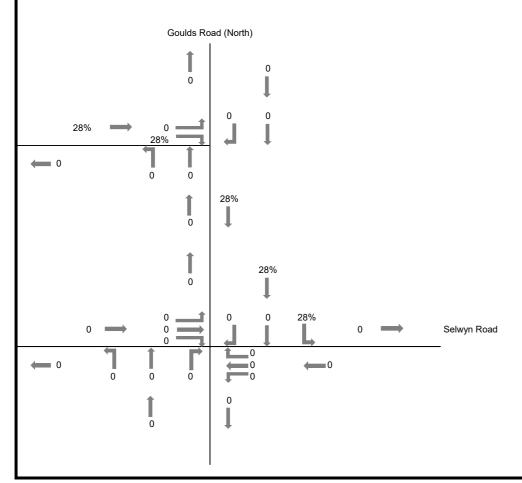


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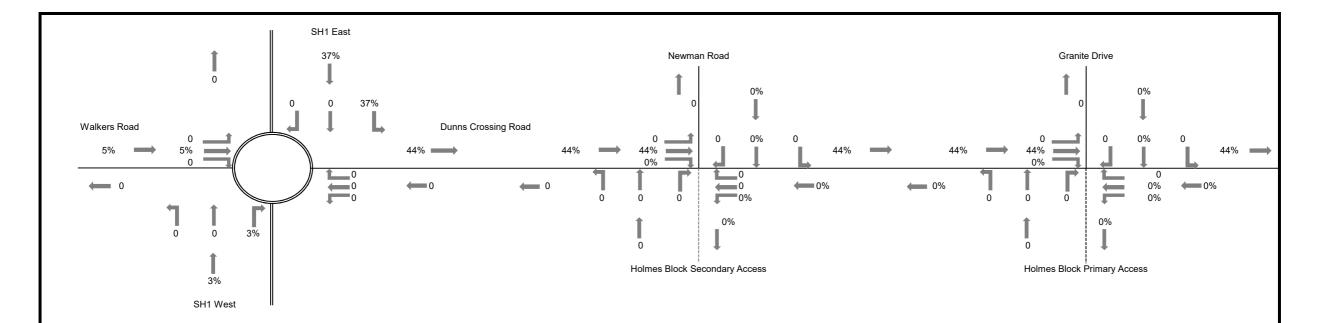


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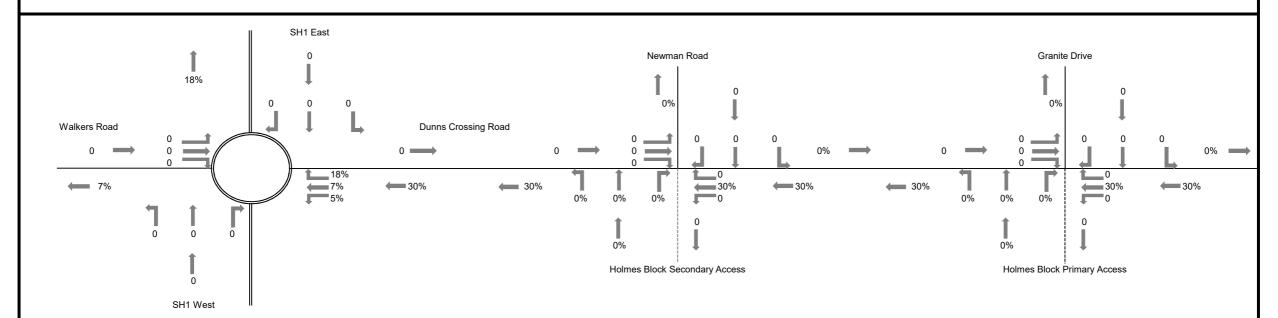


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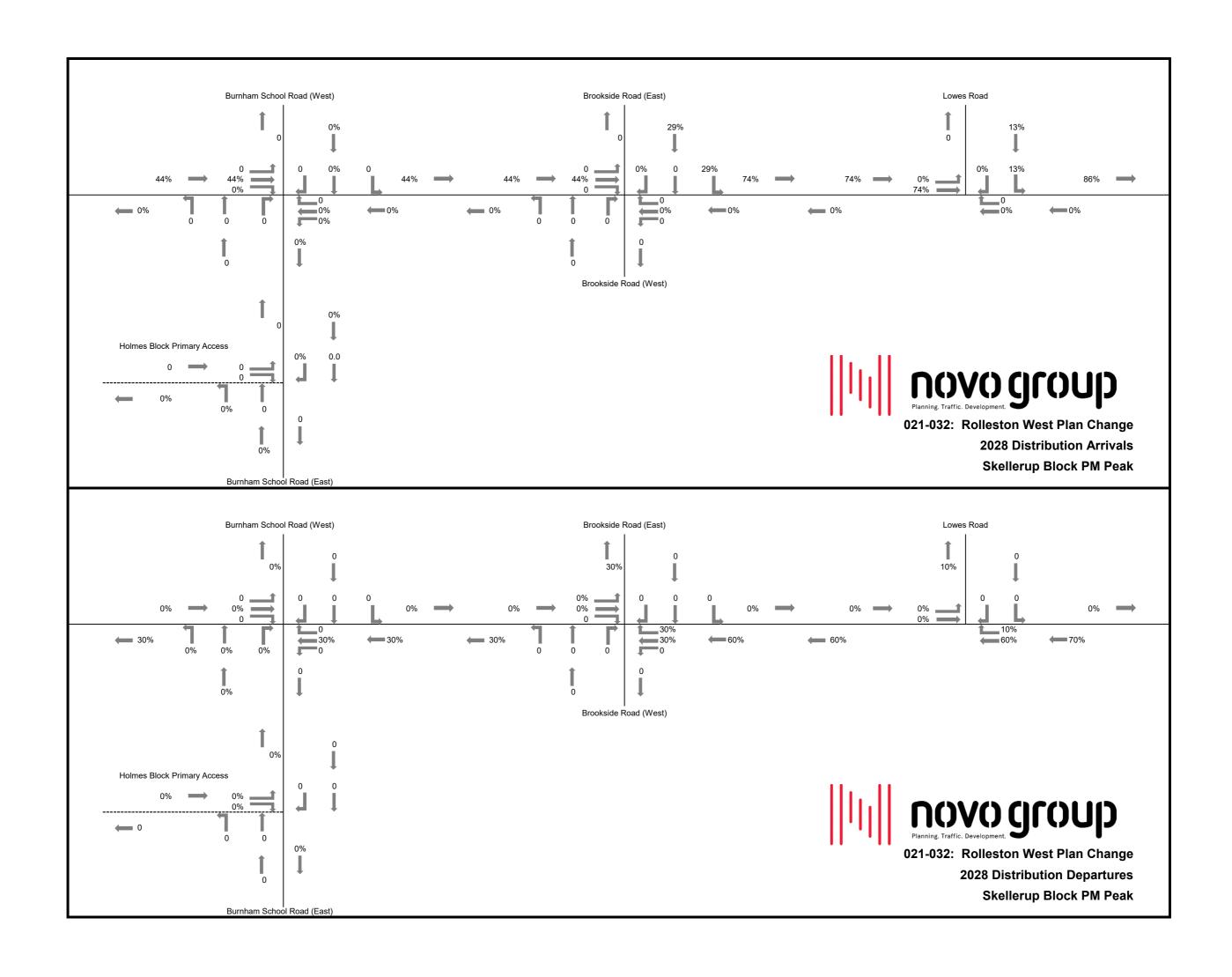


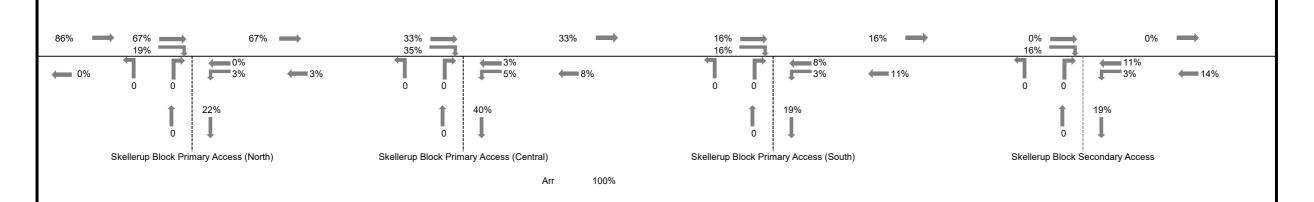
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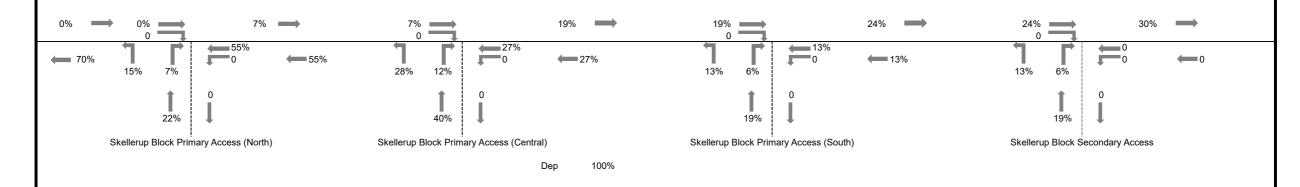
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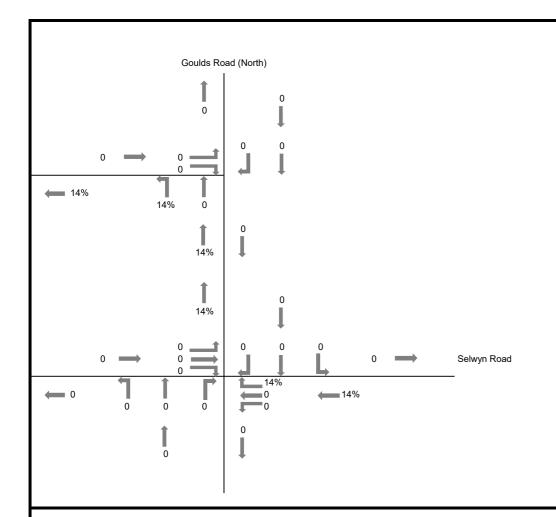


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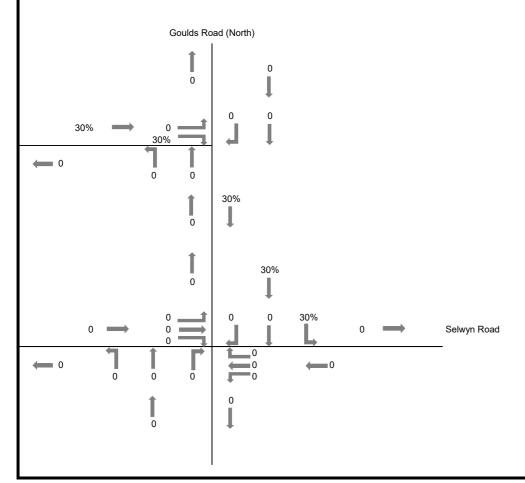


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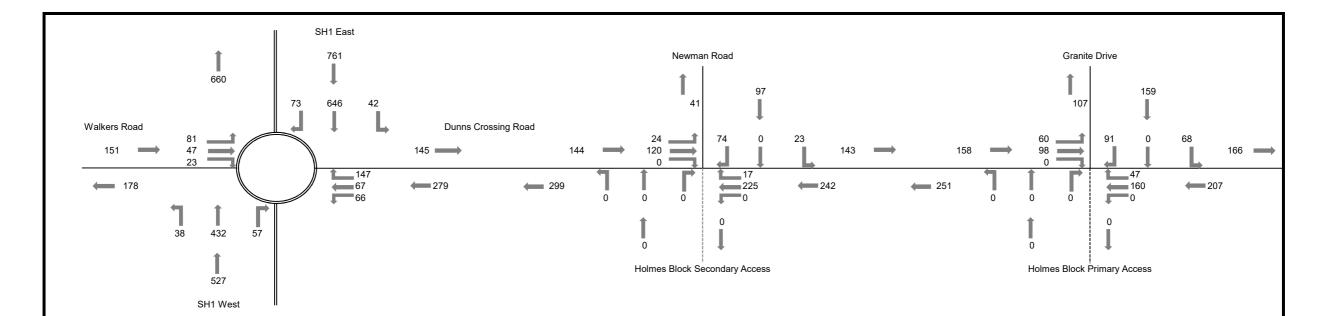


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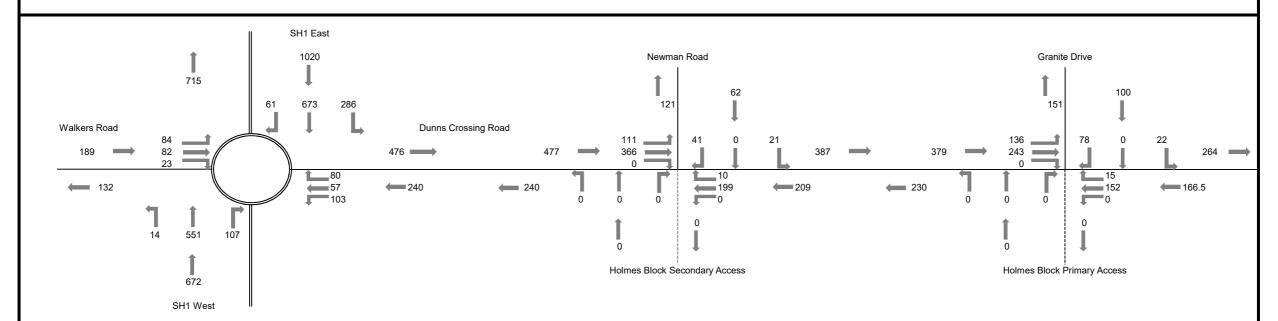


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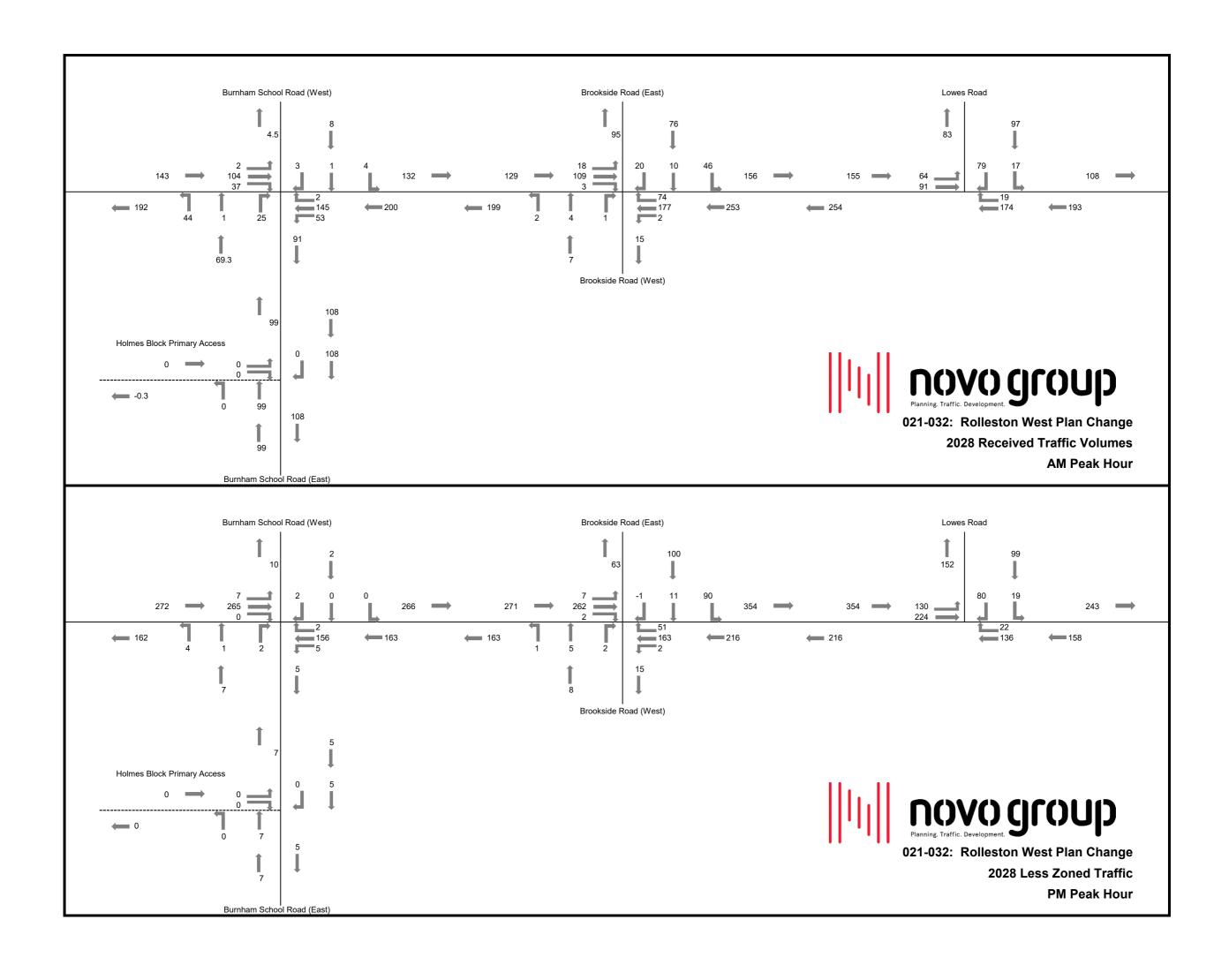


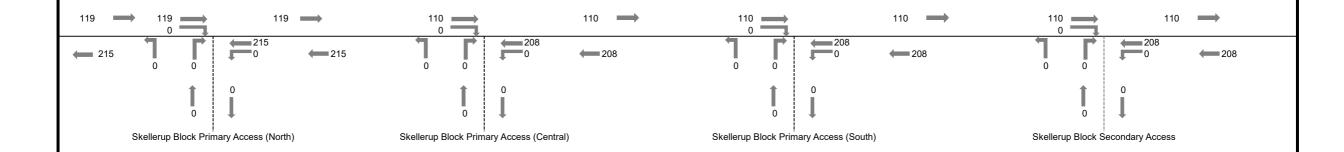
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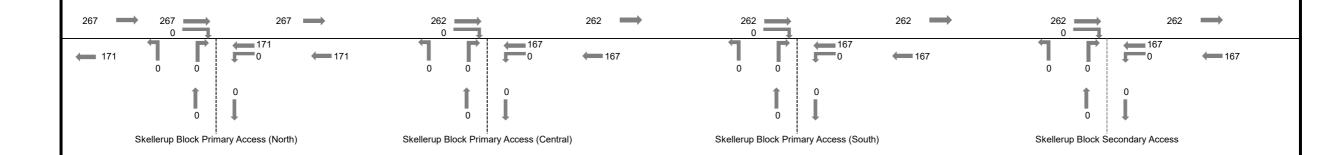
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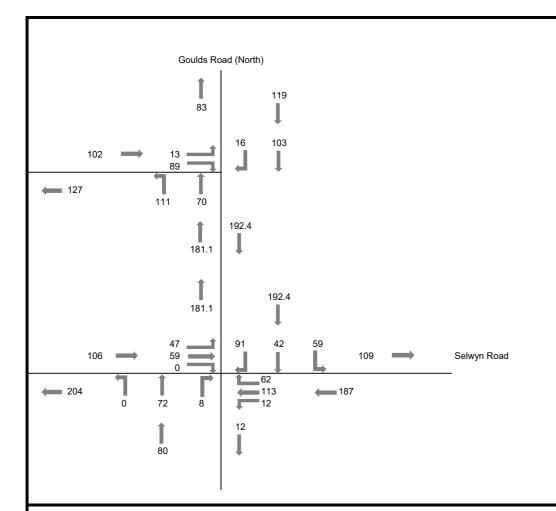


021-032: Rolleston West Plan Change 2028 Received Traffic Volumes AM Peak Hour



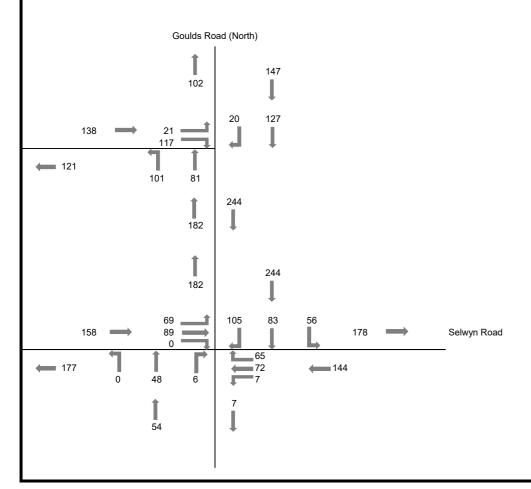


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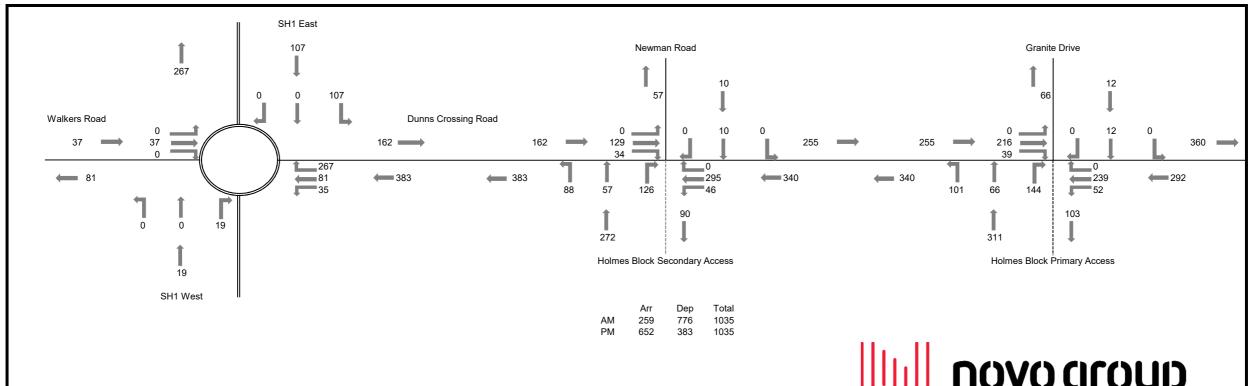


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021-032: Rolleston West Plan Change 2028 Less Zoned Traffic PM Peak Hour

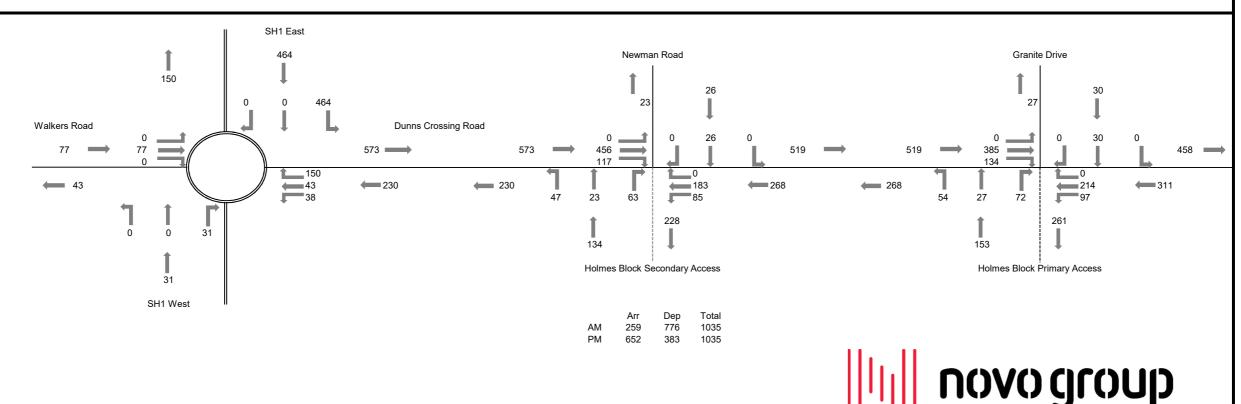


NOVO GROUD

Planning. Traffic. Development.

021-032: Rolleston West Plan Change

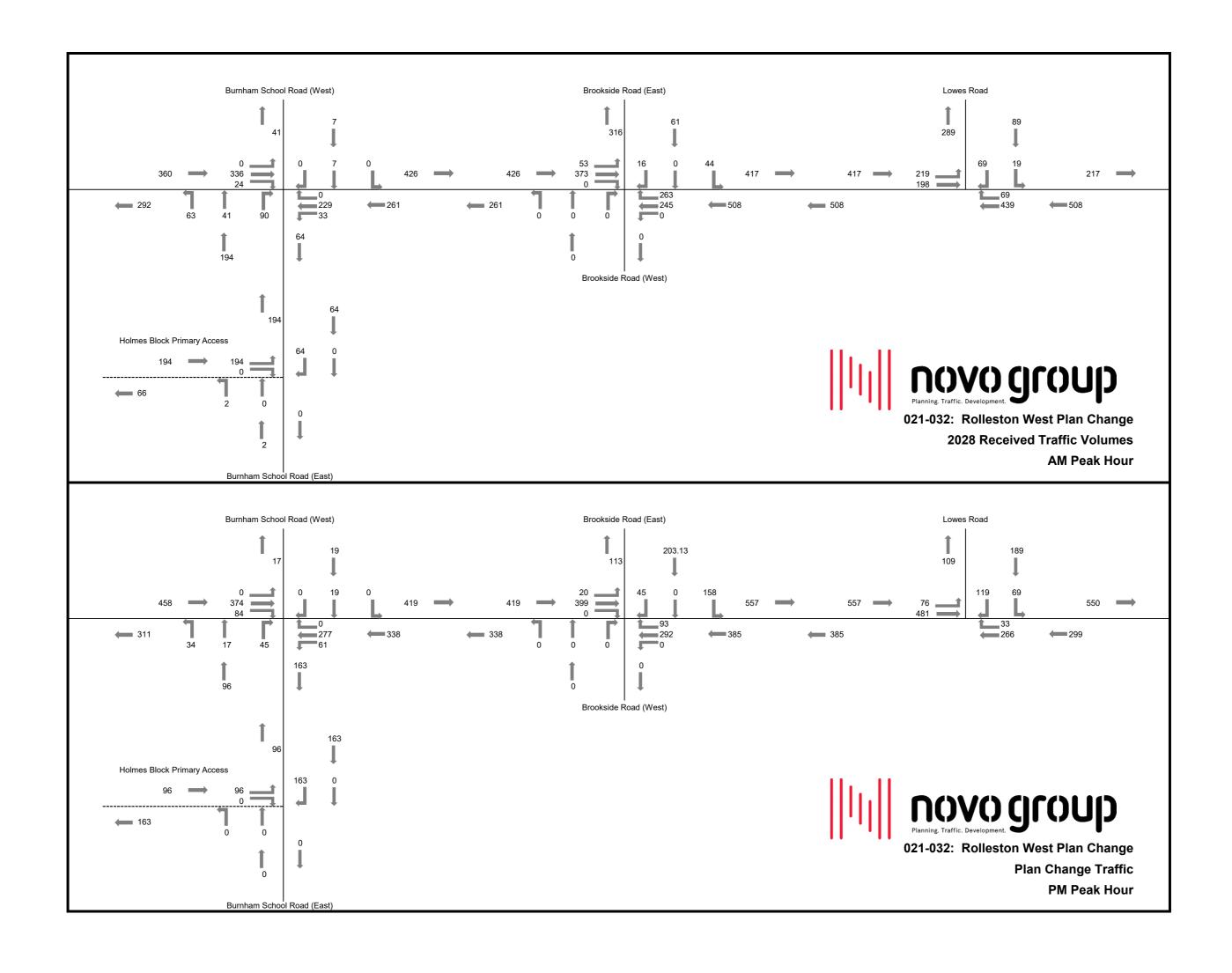
021-032: Rolleston West Plan Change
Plan Change Traffic
AM Peak Hour

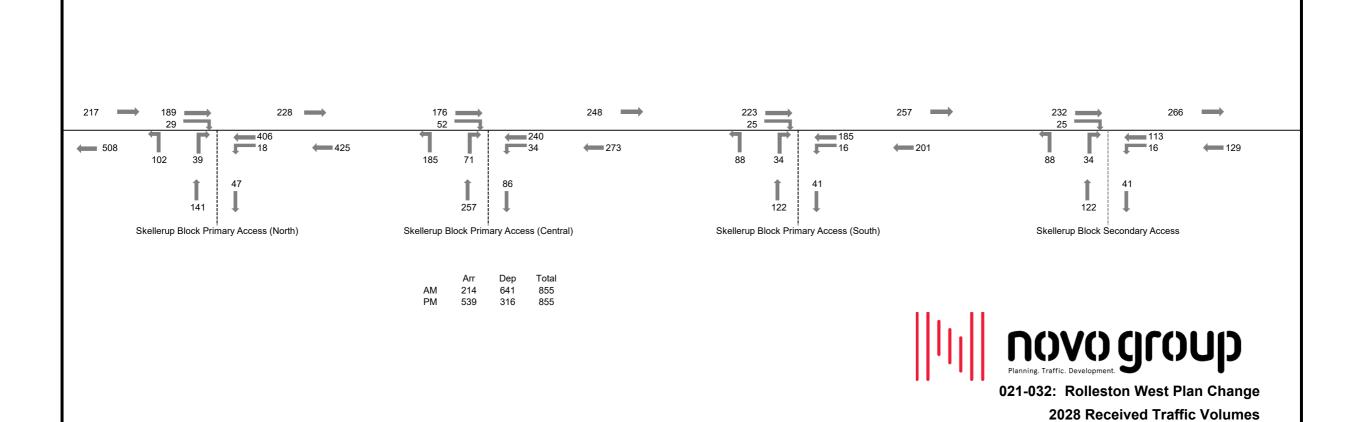


Planning. Traffic. Development.

021-032: Rolleston West Plan Change
Plan Change Traffic

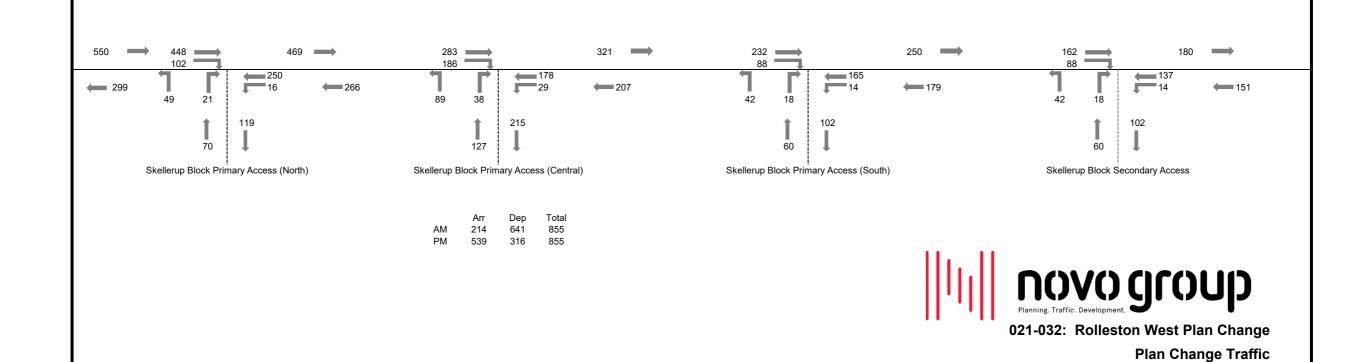
PM Peak Hour

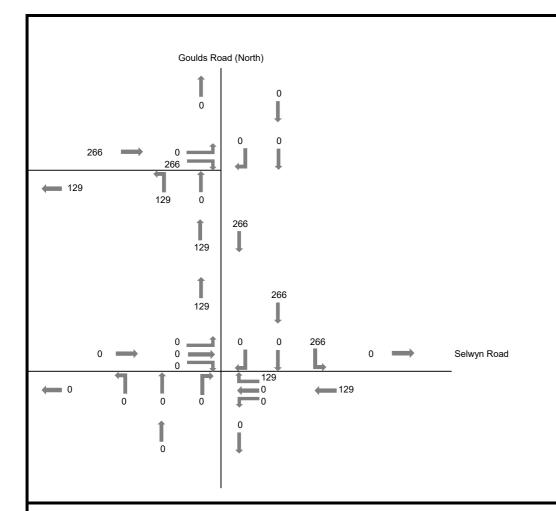




AM Peak Hour

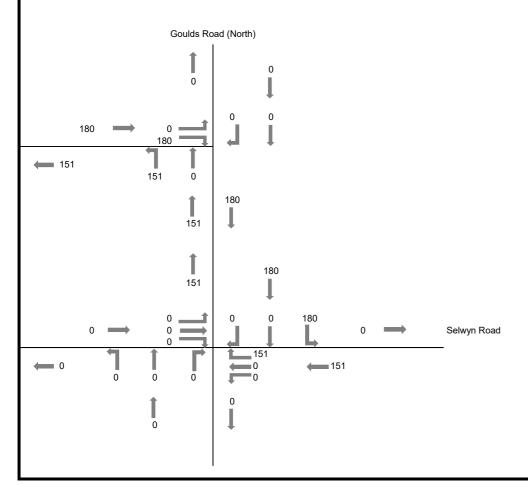
PM Peak Hour





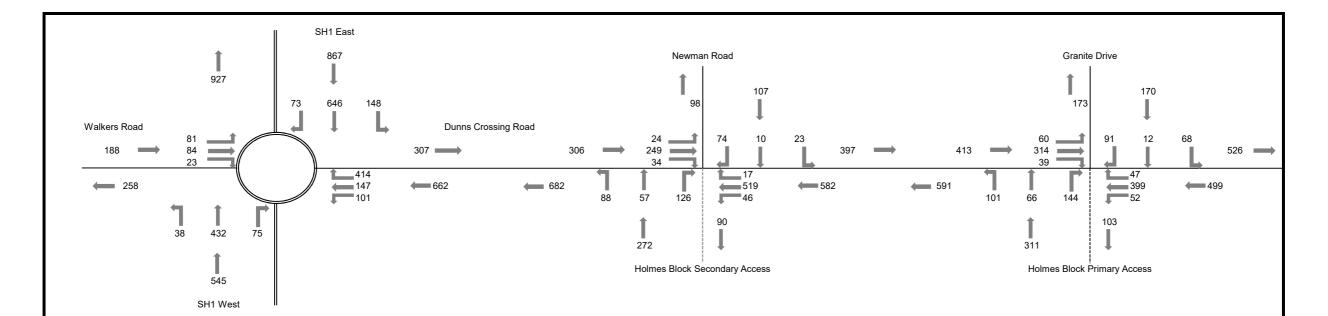


021-032: Rolleston West Plan Change 2028 Received Traffic Volumes AM Peak Hour



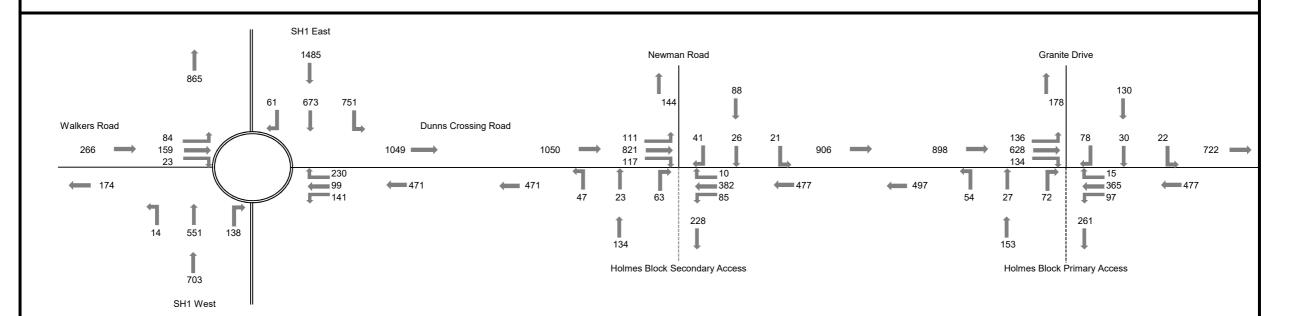


021-032: Rolleston West Plan Change
Plan Change Traffic
PM Peak Hour



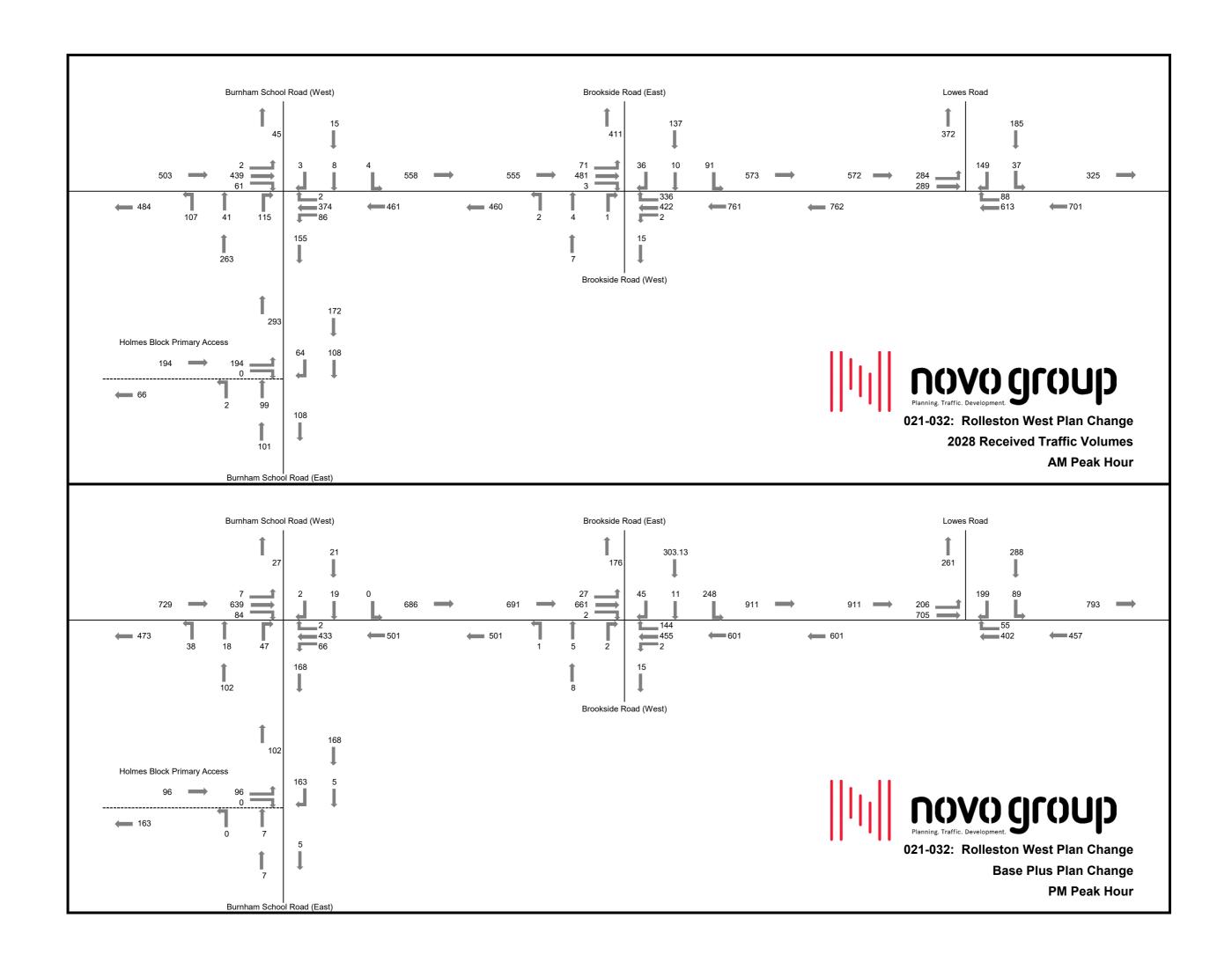


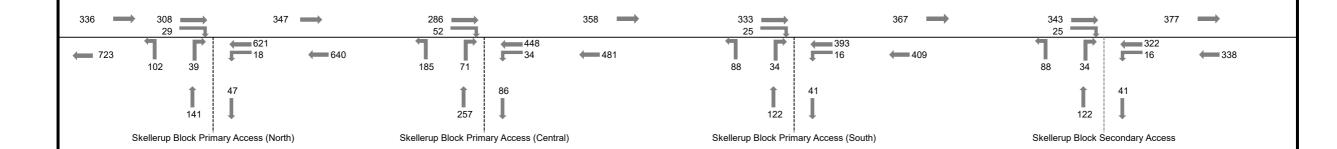
021-032: Rolleston West Plan Change
Base Plus Plan Change
AM Peak Hour





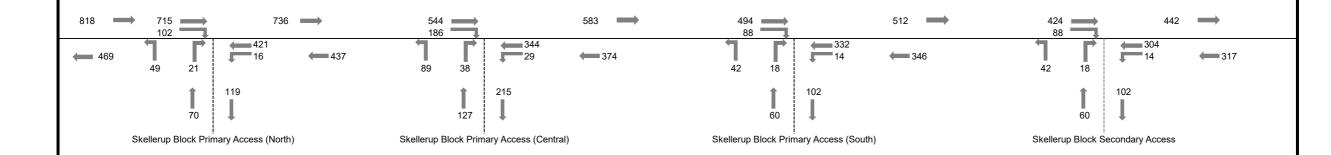
021-032: Rolleston West Plan Change
Base Plus Plan Change
PM Peak Hour





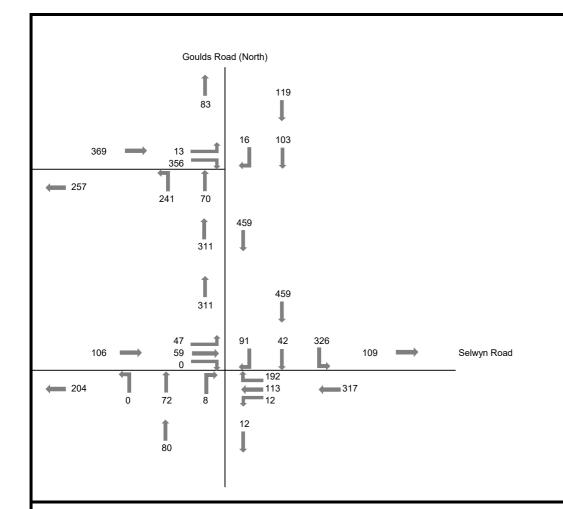


021-032: Rolleston West Plan Change 2028 Received Traffic Volumes AM Peak Hour



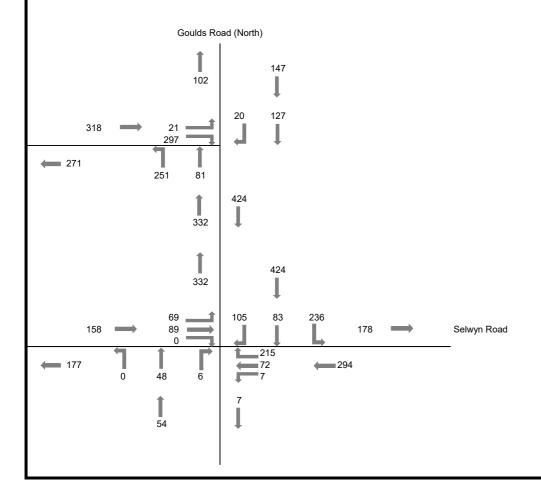


021-032: Rolleston West Plan Change
Base Plus Plan Change
PM Peak Hour





021-032: Rolleston West Plan Change 2028 Received Traffic Volumes AM Peak Hour





021-032: Rolleston West Plan Change
Base Plus Plan Change
PM Peak Hour



Dunns Crossing Rd / Newman Rd / Access Traffic Model Results



▼ Site: 101 [Dunns X-ing / Newman / Access - 2028 AM (Site Folder: Dunns X-ing / Newman)]
New Site
Site Category: (None)
Give-Way)

Vehicle Move	Jehicle Movement Performance	ince												
Mov	T _M	INPUT VOLUMES [Total +	UMES HV]	DEMAND FLOV (Total veh/h	FLOWS HV]	Sain vic	Aver Delay sec	Level of Service	95% BACK OF QUEUE [Veh. Dist] veh. m	ueue Dest] m	Prop.	Effective Stop Rate	Aver No. Cycles	Aver Speed km/h
South: Dunns Crossing Rd	Prossing Rd													
-	77	46	0.0	468	0.0	0.306	2.0	LOSA	0.2	1.7	0.05	90'0	0.05	49.0
2	F	519	0.0	546	0.0	0.306	0.1	LOSA	0.2	1.7	90.0	90'0	0.05	49.5
6	R2	17	0.0	50	0.0	0.306	5.9	LOSA	0.2	1.7	0.05	90.0	0.05	49.1
Approach		582	0.0	613	0.0	0.306	9.0	NA	0.2	1.7	0.05	90.0	0.05	49.5
East: Newman Road	Road													
4	12	23	0.0	24	0.0	0.042	5.4	LOSA	0.1	1.0	0.40	0.59	0.40	45.4
2	F	10	0.0	=	0.0	0.042	60 60	LOSA	0.1	1.0	0.40	0.59	0.40	45.5
9	R2	7.4	0.0	78	0.0	0.249	15.7	LOSC	6.0	6.0	0.78	0.93	0.87	40.6
Approach		107	0.0	113	0.0	0.249	12.9	8 SO7	6.0	6.0	99.0	0.82	0.72	42.0
North. Dunns Crossing Rd	rossing Rd													
7	77	24	0.0	25	0.0	0.180	6.9	LOSA	0.5	3.8	0.22	0.10	0.22	48.2
60	F	249	0.0	262	0.0	0.180	7.0	LOSA	9.0	3.8	0.22	0.10	0.22	48.7
ø	R2	34	0.0	36	0.0	0.180	7.6	LOSA	9.0	3.8	0.22	0.10	0.22	48.3
Approach		307	0.0	323	0.0	0.180	1.9	NA	0.5	3.8	0.22	0.10	0.22	48.6
West. Site Access	\$55													
10	77	88	0.0	93	0.0	0.229	7.1	LOSA	6.0	6.1	0.59	0.78	0.61	44.4
11	F	22	0.0	09	0.0	0.229	10.5	LOSB	6.0	6.1	0.59	87.0	0.61	44.5
12	R2	126	0.0	133	0.0	0.371	15.5	LOSC	1.5	10.3	0.77	0.97	1.00	40.8
Approach		271	0.0	285	0.0	0.371	11.7	FOS B	1.5	10.3	0.68	0.87	0.79	42.7
All Vehicles		1267	0.0	1334	0.0	0.371	44	NA	1.5	10.3	0.27	0.31	0.30	47.0

Site Level of Service (LOS) Method: Delay (SIDRA), Site LOS Method is specified in the Parameter Settings dialog (Site lab).
Whiche movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.

Next intersection LOS values and based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included)

Queue Model: SIDRA Standard (Geometric Delay is included)

Substandard Capacity. SIDRA Standard (Akzelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 101 [Dunns X-ing / Newman / Access - 2028 PM (Site Folder: Dunns X-ing / Newman)]
New Site (Site Category: (None)
Give-Way (Two-Way)

Vehicle Mov	Vehicle Movement Performance	ance												
Mov	Tum	INPUT VI [Total vehih	olumes HV]	DEMANE [Total veh/h) FLOWS HV]	Sath Set	Aver Delay sec	Level of Service	95% BACK OF QUEUE [Veh. Det]	F QUEUE Dist] m	Prop. Oue	Effective Stop Rate	Aver No Cycles	Aver Speed km/h
South: Dunns Crossing Rd	Crossing Rd	0.0000000		100000000000000000000000000000000000000			2000							
-	7	85	0.0	88	0.0	0.264	6.8	LOSA	9.0	4.2	0.12	0.10	0.14	48.2
2	F	382	0.0	402	0.0	0.264	0.7	LOSA	9.0	4.2	0.12	0.10	0.14	48.6
9	R2	10	0.0	11	0.0	0.264	14.0	LOSB	9.0	4.2	0.12	0.10	0.14	48.2
Approach		477	0.0	202	0.0	0.264	2.1	NA	9.0	4.2	0.12	0.10	0.14	48.5
East. Newman Road	Road													
4	77	21	0.0	22	0.0	0.257	11.4	LOSB	8.0	5.6	0.88	76.0	0.97	37.5
2	T1	26	0.0	27	0.0	0.257	33.5	COSD	0.8	5.6	0.88	0.97	0.97	37.6
9	R2	41	0.0	43	0.0	0.418	46.8	LOSE	1.3	9.0	0.94	1.03	1.14	30.2
Approach		88	0.0	93	0.0	0.418	34.4	LOSD	1.3	9.0	0.91	66'0	1.05	33.7
North: Dunns Crossing Rd	Crossing Rd													
7	77	111	0.0	117	0.0	0.599	8.0	LOSA	4.0	28.2	0.31	0.12	0.48	47.6
60	F	821	0.0	864	0.0	0.599	1.4	LOSA	4.0	28.2	0.31	0.12	0.48	48.0
o	R2	117	0.0	123	0.0	0.599	9.2	LOSA	4.0	28.2	0.31	0.12	0.48	47.6
Approach		1049	0.0	1104	0.0	0.599	3.0	N.A.	4.0	28.2	0.31	0.12	0.48	47.9
West Site Access	\$500													
10	77	47	0.0	49	0.0	0.255	7.0	LOSA	0.8	5.8	0.68	0.79	0.74	40.5
=	T	23	0.0	24	0.0	0.255	35.9	LOSE	0.8	5.8	0.68	0.79	0.74	40.6
12	R2	63	0.0	99	0.0	0.577	496	LOSE	2.0	13.8	0.95	1.08	1.33	29.5
Approach		133	0.0	140	0.0	0.577	32.2	TOSD	2.0	13.8	0.81	0.93	1.02	34.4
All Vehicles		1747	0.0	1839	0.0	0.599	9	N.A.	4.0	28.2	0.33	0.22	0.46	45.7
														Control

Site Level of Service (LOS) Method. Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Outue Model: SIDRA Standard (Geometric Delay is included).

Sala Sala Standard (Beometric Delay is included).

HV (%) values are calculated for All Movement Classes of All Heary Vehicle Model Designation.

Rolleston West Residential Ltd Dunns Crossing Road Rolleston



Appendix 4

Dunns Crossing Rd / Granite Dr / Access Traffic Model Results



MOVEMENT SUMMARY

▼ Site: 101 [Dunns X-ing / Granite / Access - 2028 AM (Site Folder: Dunns X-ing / Granite)]

New Site
Site Callor (None)
Site Callor (None)

Vehicle Mov	fehicle Movement Performance	ance												
Mov ID	F.	INPUT V [Total	INPUT VOLUMES H HV]	DEMAND FLOV [Total veh/h) FLOWS HV]	Salm Salm	Aver Delay sec	Level of Service	95% BACK OF QUEUE [Veh. Dist] weh. m	ovene Dist]	Prop Oue	Effective Stop Rate	Aver. No. Cycles	Aver Speed km/h
South: Dunns Crossing Rd	Crossing Rd				27.00									
	2	52	0.0	55	0.0	0.275	5.7	LOSA	7.0	4.7	0.16	0.10	0.16	48.5
2	11	399	0.0	420	0.0	0.275	0.3	LOSA	7.0	4.7	0.16	0.10	0.16	48.9
e	R2	47	0.0	49	0.0	0.275	6.5	LOSA	7.0	4.7	0.16	0.10	0.16	48.3
Approach		498	0.0	524	0.0	0.275	1.5	AN	2.0	4.7	0.16	0.10	0.16	40.09
East Granife Drive	Drive													
4	77	80	0.0	72	0.0	0.392	7.4	LOSA	1.7	12.1	0.63	0.86	0.86	42.0
25	11	12	0.0	13	0.0	0.392	12.4	10SB	1.7	12.1	0.63	0.86	0.86	42.1
9	R2	16	0.0	96	0.0	0.392	17.6	COSC	1.7	12.1	0.63	0.86	0.86	41.9
Approach		171	0.0	180	0.0	0.392	13.2	FOS B	1.7	12.1	0.63	0.56	0.86	41.9
North: Dunns Crossing Rd	Crossing Rd													
7	77	9	0.0	63	0.0	0.232	5.8	LOSA	9.6	4.2	0.18	0.12	0.18	48.3
10	F	314	0.0	331	0.0	0.232	0.4	LOSA	9'0	4.2	0.18	0.12	0.18	48.8
ø	R2	39	0.0	14	0.0	0.232	69	LOSA	9.0	4.2	0.18	0.12	0.18	48.1
Approach		413	0.0	435	0.0	0.232	1,0	AM	9.0	4.2	0.18	0.12	0.18	48.6
West Site Access	ssac													
10	77	101	0.0	106	0.0	0.677	11.5	LOSB	4.5	31.7	0.77	1.17	1.57	40.2
#	F	99	0.0	69	0.0	0.677	17.0	LOSC	4.5	31.7	0.77	1.17	1.57	40.3
12	R2	14	0.0	152	0.0	0.677	21.0	10SC	4.5	31.7	0.77	1.17	1.57	40.0
Approach		311	0.0	327	0.0	0.677	17.1	LOSC	4.5	31.7	0.77	1.17	1.57	40.1
All Vehicles		1393	0.0	1466	0.0	0.677	6.5	NA	4.5	31.7	0.36	0.44	0.57	45.6

Site Level of Service (LOS) Method: Delay (SIDRA), Site LOS Method is specified in the Parameter Settings dialog (Site lab).
Vehicle movement LOS values are based on average delay per movement.
Minor Read Approach LOS values are based on average delay for all vehicle movements.
Minor Read Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Delay Model: SIDRA Standard (Geometric Delay is included).
All Means Standard (Geometric Delay is included).
Why was a second standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

▼ Site: 101 [Dunns X-ing / Granite / Access - 2028 PM [Site Folder: Dunns X-ing / Granite)]

New Site
Site Carrow (None)
Site Carrow (None)
Site Carrow (None)

Vehicle Mov	Vehicle Movement Performance	nance												
Mov	Tum	INPUT [Total veh/h	rvolumes HV]	DEMAND FLOV [Total veh/h	FLOWS HV]	Safin v/c	Aver Delay sec	Level of Service	95% BACK OF [Veh. veh	ACK OF QUEUE Dist] m	Prop Que	Effective Stop Rate	Aver. No Cycles	Aver. Speed km/h
South: Dunns Crossing Rd	Crossing Rd													
	27	97	0.0	102	0.0	0.264	0.9	LOSA	9.0	3.8	0.12	0.12	0.14	48.2
2	I	365	0.0	384	0.0	0.264	9.0	LOSA	0.5	3.8	0.12	0.12	0.14	48.7
m	R2	15	0.0	16	0.0	0.264	10.6	LOSB	5.0	3.8	0.12	0.12	0.14	48.0
Approach		477	0.0	502	0.0	0.264	20	NA	9'0	3.8	0.12	0.12	0.14	48.6
East. Granite Drive	Drive													
4	2	22	0.0	23	0.0	0.702	216	LOSC	3.2	22.1	0.93	1.19	1.70	32.8
\$	11	30	0.0	32	0.0	0.702	369	LOSE	3.2	22.1	0.93	1.19	1.70	32.9
9	R2	78	0.0	82	0.0	0.702	423	LOSE	3.2	22.1	0.93	1.19	1.70	32.7
Approach		130	0.0	137	0.0	0.702	37.6	LOSE	3.2	22.1	0.93	1.19	1.70	32.8
North: Dunns Crossing Rd	Crossing Rd													
7	77	136	0.0	143	0.0	0.528	7.5	LOSA	3.8	26.6	0.36	0.17	0.52	47.2
10	11	628	0.0	661	0.0	0.528	1.6	LOSA	3,0	26.6	0.36	0.17	0.52	47.7
6	R2	134	0.0	141	0.0	0.528	80	LOSA	3.8	26.6	0.36	0.17	0.52	47.0
Approach		898	0.0	945	0.0	0.528	3.5	NA	3.8	26.6	0.36	0.17	0.52	47.5
West. Site Access	Seas													
10	2	54	0.0	25	0.0	0.627	14.9	LOSB	3.0	20.7	0.82	1.10	1.45	36.0
F	1	27	0.0	28	0.0	0.627	343	LOSD	3.0	20.7	0.82	1.10	1.45	36.1
12	R2	72	0.0	76	0.0	0.627	349	CSOT	3.0	20.7	0.82	1.10	1.45	35.9
Approach		153	0:0	161	0.0	0.627	27.7	TOSD	3.0	20.7	0.82	1.10	1.45	35.9
All Vehicles		1658	0.0	1745	0.0	0.702	9.0	NA	3.8	26.6	0.38	0.32	0.59	4

Site Level of Service (LOS) Method: Delay (SIDRA), Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS subase as based on average delay for all vehicle movements.

Minor Road Approach LOS subase as based on average delay for all vehicle movements.

Mark Interescent LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queen Model: SIDRA Standard (Akçelik M3D).

Applicable May Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Burnham School Rd / Access Traffic Model Results



▼ Site: 101 [Burnham Schhol / Access - 2028 AM (Site Folder: Burnham School / Access)]
New Site Categor: (None)
Give-Way (Tivo-Way)

Man													
Q	INP! [Total veh/fi	NPUT VOLUMES	DEMAND FLOWS [Total veh/h	FLOWS HV]	Deg Sain v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. Dist]	F QUEUE Diet] m	Prop. Oue	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East Burnham School Road			0000000										
5 T1	108	0.0	114	0.0	0.100	0.2	LOSA	0.4	2.7	0.16	0.20	0.16	48.4
6 R2	64	0.0	29	0.0	0.100	4.9	LOSA	0.4	2.7	0.16	0.20	0.16	47.5
Approach	172	0.0	181	0.0	0.100	1.9	NA	0.4	2.7	0.16	0.20	0.16	48.1
North: Access													
7 12	194	0.0	204	0.0	0.137	4.9	LOSA	9.0	4.2	0.21	0.51	0.21	46.1
9 R2	-	0.0	-	0.0	0.137	5.8	LOSA	9.0	4.2	0.21	0.51	0.21	45.7
Approach	195	0.0	205	0.0	0.137	4.9	LOSA	9.0	4.2	0.21	0.51	0.21	46.1
West Burnham School Road													
10 12	2	0.0	2	0.0	0.055	4.6	LOSA	0.0	0.0	0.00	0.01	0.00	49.4
=	66	0.0	104	0.0	0.055	0.0	LOSA	0.0	0.0	0.00	0.01	00.0	49.9
Approach	101	0.0	106	0.0	0.055	0.1	NA	0.0	0.0	00.00	0.01	0.00	49.9
All Vehicles	468	0.0	493	0.0	0.137	28	AN	9.0	4.2	0.15	0.29	0.15	47.6

Site Level of Service (LOS) Method: Delay (SIDRA), Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Read Approach LOS values are based on average delay for all vehicle movements.

Minor Read Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queen Model: SIDRA Standard (Geometric Delay is included).

Age Abordance Capacity, SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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▽ Site: 101 [Burnham Schhol / Access - 2028 PM (Site Folder: Burnham School / Access)]

New Site Site Category: (None) Give-Way (Two-Way)

hicle Movement Pe	rformance												-
rv Tum	INPU [Total vehih	INPUT VOLUMES al HV]	DEMANI [Total veh/h	DEMAND FLOWS	Deg. Safm v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. Dist]	F QUEUE Dist] m	Prop. Oue	Effective Stop Rafe	Aver No. Cycles	Aver. Speed km/h
st Burnham School Road	peo												
11	s	0.0	w	0.0	0.099	0.0	LOSA	9.0	3.4	0.05	0.52	0.05	47.0
R2	163	0.0	172	0.0	0.099	4.6	LOSA	9.0	3.4	0.05	0.52	0.05	46.2
proach	168	0.0	177	0.0	660'0	4.4	NA	9.5	3.4	0.05	0.52	0.05	46.2
rth: Access													
77	96	0.0	101	0.0	0.083	9.4	LOSA	0.3	1.8	0.04	0.51	0.04	46.5
R2	-	0.0	-	0.0	0.063	5.2	LOSA	0.3	1.8	0.04	0.51	0.04	46.1
proach	26	0.0	102	0.0	0.063	9.4	LOSA	0.3	1.8	0.04	0.51	0.04	46.5
est. Burnham School Road	load												
12	-	0.0	-	0.0	0.004	4.6	LOSA	0.0	0.0	0.00	0.07	00.0	49.1
11	7	0.0	7	0.0	0.004	0.0	LOSA	0.0	0.0	00.0	0.07	00.0	49.6
proach	60	0.0	80	0.0	0.004	9.0	NA	0.0	0.0	0.00	0.07	0.00	49.5
Vehicles	273	0.0	287	0.0	660'0	4.4	NA	0.5	3.4	0.04	0.51	0.04	46.4

Site Level of Service (LOS) Method. Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay per movements.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Delay Model: SIDRA Standard (Geometric Delay is included).

Sapa-Acceptance capacity. SIDRA Standard (Akpeix M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Rolleston West Residential Ltd Dunns Crossing Road Rolleston



Appendix 6

Dunns Crossing Rd / Northern Primary Access Traffic Model Results



MOVEMENT SUMMARY

▼ Site: 101 [Dunns X-ing / North Primary - 2028 AM (Site Folder: Dunns X-ing / North Primary)]

Site category, (None)
Give-Way (Two-Way)

Vehicle Mov	Movement Performance	ance												
Mov ID	Tum	INPUT VO	OLUMES HV]	DEMAND [Total	FLOWS HV]	Safa Safa	Aver Delay sec	Level of Service	95% BACK OF QUEUE [Veh. Dist]	or aveue Dext] m	Prop. Chue	Effective Stop Rate	Aver. No. Cycles	Aver Speed kmh
South: Dunns	South: Dunns Crossing Road													
	12	18	0.0	19	0.0	0.330	4.7	LOSA	0.0	0.0	0.00	0.02	0.00	49.3
2	F	621	0.0	654	0.0	0.330	0.1	LOSA	0.0	0.0	0.00	0.02	0.00	49.8
Approach		639	0.0	673	0.0	0.330	0.2	NA	0.0	0.0	0.00	0.02	0.00	49.7
North: Dunns	North: Dunns Crossing Road													
60	11	308	0.0	324	0.0	0.195	0.7	LOSA	0.5	3.2	0.16	0.05	0.16	49.1
o	R2	29	0.0	31	0.0	0.195	8.4	LOSA	9.0	3.2	0,16	0.05	0.16	48.4
Approach		337	0.0	355	0.0	0.195	1.3	NA	9.0	3.2	0.16	0.05	0.16	49.0
West Access														
10	77	102	0.0	107	0.0	0.233	8.0	LOSA	60	6.1	0.62	0.84	99:0	44.0
12	R2	39	0.0	14	0.0	0.233	12.6	LOSB	60	6.1	0.62	0.84	99.0	43.8
Approach		141	0.0	148	0.0	0.233	9.3	LOSA	6.0	6.1	0.62	0.84	99'0	43.9
All Vehicles		1117	0.0	1176	0.0	0.330	17	AM	6.0	6.1	0.13	0.13	0.13	48.7

Site Level of Service (LOS) Method: Delay (SIDRA), Site LOS Method is specified in the Parameter Settings dialog (Site lab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS sylates are based on average delay for all vehicle movements.
Minor Road Approach LOS sylates are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Delay Model: SIDRA Standard (Geometric Delay is included).
August Approach LOS values are lost Approach LOS values are lost Approach LOS values are adequated for All Movement Classes of All Heavy Vehicle Model Designation.

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▼ Site: 101 [Dunns X-ing / North Primary - 2028 PM (Site Folder: Dunns X-ing / North Primary)]
New Site
Site Category: (None)
Give-Way)

Vehicle Mov	icle Movement Performance	ance												
Mov ID	ij.	INPUT VO [Total vebth	JUMES HV]	DEMAND [Total veb/h	FLOWS HV]	Sath Sah	Aver Delay sec	Level of Service	95% BACK o [Veh. veh	BACK OF QUEUE Dist]	Prop. Oue	Effective Stop Rafe	Aver. No. Cycles	Aver. Speed km/h
South: Dunns	South: Dunns Crossing Road													
	77	16	0.0	17	0.0	0.226	4.6	LOSA	0.0	0.0		0.02	0.00	49.3
2	11	421	0.0	443	0.0	0.226	0.1	LOSA	0.0	0.0		0.02	0 0 0	49.8
Approach		437	0.0	460	0.0	0.226	0.2	NA	0.0	0.0	0.00	0.02	0.00	49.8
North: Dunns	orth: Dunns Crossing Road													
60	11	715	0.0	753	0.0	0.466	6.0	LOSA	2.0	14.2		0.00	0.30	60.04
6	R2	102	0.0	107	0.0	0.466	7.9	LOSA	2.0	14.2		0.08	0.30	48.1
Approach		817	0.0	860	0.0	0.466	1.8	NA	2.0	14.2	0.23	0.08	0.30	48.7
West Access														
10	2	49	0.0	52	0.0	0.140	6.2	LOSA	9.9	3.2		0.72	0.56	43.7
12	R2	21	0.0	22	0.0	0.140	18.4	LOSC	9.0	3.2		0.72	0.56	43.5
Approach		70	0.0	74	0.0	0.140	6.6	LOSA	0.5	3.2		0.72	0.56	43.6
All Vehicles		1324	0.0	1394	0.0	0.466	1.7	N.	2.0	14.2	71.0	0.10	0.21	48.8

Site Level of Service (LOS) Method: Delay (SIDRA), Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Ourse Model: SIDRA Standard (Geometric Delay is included).

Applicable for All Movement Classes of All Heavy Vehicle Model Designation.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Dunns Crossing Rd / Central Primary Access Traffic Model Results



▼ Site: 101 [Dunns X-ing / Central Primary - 2028 AM (Site Folder: Dunns X-ing / Central Primary)]
New Site
Tec Calegory: (None)
Give-Way (Two-Way)

Vehicle Mov	de Movement Performance	ance			and the same						-			
Mov	Tum	INPUT VO [Total veh/h	OLUMES HV]	DEMAND [Total veh/h	FLOWS HV]	Deg Sath v/c	Aver. Delay sec	Level of Service	95% BACK of Veh.	% BACK OF QUEUE 1. Det] m	Prop	Effective Stop Rafe	Aver, No. Cycles	Aver. Speed km/h
South: Dunns	South: Dunns Crossing Road													
	27	34	0.0	36	0.0	0.249	4.6	LOSA	0.0	0.0		0.04	0.00	49.2
2	Ţ	448	0.0	472	0.0	0.249	0.1	LOSA	0.0	0.0		0.04	0.00	49.7
Approach		482	0.0	202	0.0	0.249	0.4	NA	0.0	0.0		0.04	0.00	49.6
North: Dunns	Jorth: Dunns Crossing Road													
40	F	286	0.0	301	0.0	0.200	0.7	LOSA	9.0	4.3		0.10	0.22	48.9
6	R2	52	0.0	55	0.0	0.200	7.0	LOSA	9.0	4.3	0.22	0.10	0.22	48.2
Approach		338	0'0	356	0.0	0.200	1.7	NA	9.0	6,3	0.22	0.10	0.22	45.8
West Access														
10	77	185	0.0	195	0.0	0.329	7.1	LOSA	1.5	10.6	0.56	0.80	0.66	44.6
12	R2	7.1	0.0	75	0.0	0.329	10.9	LOSB	1.5	10.6	0.56	0.80	99'0	4.4
Approach		256	0.0	269	0.0	0.329	8.2	LOSA	1.5	10.6	95.0	0.80	99'0	44.5
All Vehicles		1076	0'0	1133	0.0	0.329	2.6	NA	1.5	10.6	0.20	0.24	0.23	48.1

Site Level of Service (LOS) Method: Delay (SIDRA), Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Wehicle movement LOS values are based on average delay per movements.
Minor Road Approach LOS values are based on average delay for all vehicle movements.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Delay Model: SIDRA Standard (Geometric Delay is included).

Saga Abcadeptance Capacity: SIDRA Standard (Akpelle M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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V Site: 101 [Dunns X-ing / Central Primary - 2028 PM (Site Folder: Dunns X-ing / Central Primary)]

New Site Site Category: (None) Give-Way (Two-Way)

shicle Mover	le Movement Performance	ance												
ð	Tum	INPUT VOLUMES [Total H	DLUMES HV]	DEMAND FLOWS [Total vehith	DFLOWS HV]	Deg Safin vic	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. Dist] veh	of QUEUE Dist]	Prop. Oue	Effective Stop Rate	Aver. No. Cycles	Speed
outh: Dunns Crossing Road	rossing Road	1000000							0.000					
	77	29	0.0	31	0.0	0.193	4.6	LOSA	0.0	0.0	0.00	0.04	0.00	49.2
	F	344	0.0	362	0.0	0.193	0.1	LOSA	0.0	0.0	0.00	0.04	0.00	49.7
proach		373	0.0	393	0.0	0.193	9.4	NA	0.0	0.0	0.00	0.04	00'0	49.6
orth: Dunns Crossing Road	ossing Road													
	F	544	0.0	573	0.0	0.443	1.3	LOSA	2.9	20.1	0.36	0.18	0.45	48.1
	R2	186	0.0	196	0.0	0.443	7.2	LOSA	2.9	20.1	0.36	0.18	0.45	47.5
proach		730	0.0	768	0.0	0.443	2.8	NA	2.9	20.1	0.36	0.13	0.45	48.0
est. Access														
	2	88	0.0	94	0.0	0.203	5.9	LOSA	0.7	5.0	0.51	69.0	0.51	44.3
	R2	38	0.0	40	0.0	0.203	14.9	LOS B	0.7	5.0	0.51	0.69	0.51	44.1
proach		127	0.0	134	0.0	0.203	9.8	LOSA	7.0	5.0	0.51	69.0	0.51	44.3
Vehicles		1230	0.0	1295	0.0	0.443	2.7	NA	2.9	20.1	0.27	0.19	0.32	48.0

Site Level of Service (LOS) Method, Delay (SIDRA), Site LOS Method is specified in the Parameter Settings dialog (Site lab).
Vehicle movement LOS values are based on average delay per movement.
Minor Read Approach LOS values are based on average delay for all vehicle movements.
Minor Read Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Oueve Model: SIDRA Standard (Geometric Delay is included).
All Mesons Rober SIDRA Standard (Akpelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Rolleston West Residential Ltd Dunns Crossing Road Rolleston



Appendix 8

Dunns Crossing Rd / Southern Primary Access Traffic Model Results



MOVEMENT SUMMARY

∇ Site: 101 [Dunns X-ing / South Primary - 2028 AM (Site Folder: Dunns X-ing / South Primary)]
New Site
Ric Category: (None)
Give-Way (Two-Way)

Vehicle Move	ehicle Movement Performance	ıce												
Mov	Tum	INPUT V(Total veh/h	OLUMES HV]	DEMAND [Total vehih	FLOWS HV]	Deg Safin v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. Dist] veh. m	of QUEUE Dist] m	Prop	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Dunns Crossing Road	Crossing Road			600					100000					
-	7	16	0.0	17	0.0	0.211	4.6	LOSA	0.0	0.0	0.00	0.02	0.00	49.3
2	11	393	0.0	414	0.0	0.211	0.1	LOSA	0.0	0.0	00.0	0.02	00.0	49.8
Approach		409	0.0	431	0.0	0.211	0.2	NA	0.0	0.0	0.00	0.02	0.00	49.8
North: Dunns Crossing Road	Prossing Road													
60	11	333	0.0	351	0.0	0.195	0.2	LOSA	0.3	2.0	0.10	0.04	0.10	49.5
6	R2	25	0.0	26	00	0.195	6.5	LOSA	0.3	2.0	0.10	0.04	0.10	48.8
Approach		358	0.0	377	0.0	0.195	2.0	NA	0.3	2.0	0.10	0.04	0.10	49.5
West Access														
10	77	88	0.0	93	0.0	0.147	6.2	LOSA	0.5	3.8	0.48	0.69	0.48	45.2
12	R2	34	0.0	36	0.0	0.147	9.2	LOSA	9.0	3.8	0.48	69.0	0.48	45.0
Approach		122	0.0	128	0.0	0.147	7.0	LOSA	9.0	3.8	0.48	0.69	0.48	45.2
All Vehicles		688	0.0	936	0.0	0.211	13	NA	0.5	3.8	0.10	0.12	0.10	49.0

Site Level of Service (LOS) Method. Delay (SIDRA), Site LOS Method is specified in the Parameter Settings dialog (Site lab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Ouewe Model: SIDRA Standard (Geometric Delay is included).

All Meany Vehicle MODA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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▼ Site: 101 [Dunns X-ing / South Primary - 2028 PM (Site Folder: Dunns X-ing / South Primary)]
New Site Calegory: (None)
Site Calegory: (None)
Give-May (Two-Way)

Vehicle Move	hicle Movement Performance	nce	-	The second second										7
Mov	Tum	INPUT VO [Total veh/h	UT VOLUMES HV]	DEMAND! [Total veh/h	FLOWS HV]	Deg. Salm víc	Aver. Delay sec	Level of Service	95% BACK O [Veh. veh	6 BACK OF QUEUE Dist J m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Dunns (South: Dunns Crossing Road									0000				
-	77	44	0.0	15	0.0	0.179	4.6	LOSA	0.0	0.0		0.02	0.00	49.3
2	F	332	0.0	349	0.0	0.179	0.1	LOSA	0.0	0.0		0.02	000	49.8
Approach		346	0.0	364	0.0	0.179	0.2	NA	0.0	0.0	0.00	0.02	0.00	49.8
North: Dunns Crossing Road	Crossing Road													
0	11	494	0.0	520	0.0	0.328	9.0	LOSA	1.0	8.8	0.20	60'0	0.20	49.0
6	R2	98	0.0	91	0.0	0.328	6.4	LOSA	1.0	60	0.20	60'0	0.20	46.3
Approach		580	0.0	611	0.0	0.328	1.4	NA	1.0	80.	0.20	0.09	0.20	48.9
West Access														
10	77	42	0.0	4	0.0	0.080	5.8	LOSA	0.3	1.9	0.45	0.65	0.45	45.0
12	R2	18	0.0	19	0.0	0.080	11.0	10SB	0.3	1.9	0.45	0.65	0.45	6.4
Approach		09	0.0	63	0.0	0.080	7.3	LOSA	0.3	1.9	0.45	0.65	0.45	45.0
All Vehicles		986	0.0	1038	0.0	0.328	1.3	NA	1.0	80	0.14	0.10	0,14	48.9

Site Level of Service (LOS) Method: Dalay (SIDRA), Site LOS Method is specified in the Parameter Settings dialog (Site lab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
Minor Road Approach LOS values are based on average delay for all vehicle movements.

Note: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard (Akçelik M3D).

Aga Acceptainer Capacity; SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Dunns Crossing Rd / Southern Secondary Access Traffic Model Results



MOVEMENT SUMMARY

☑ Site: 101 [Dunns X-ing / Secondary - 2028 AM (Site Folder: Dunns X-ing / Secondary)]

New Site
Site Callones
Site Callones
Site Callones
Site Callones

Move Than India (1) and India (1) a	Vehicle Mov	ehicle Movement Performance	nce	The state of the s											
16 0.0 17 0.0 0.175 4.6 LOSA 0.0 <th>Mov ID</th> <th>Tum</th> <th>INPUT VI [Total veh/h</th> <th>OLUMES HV]</th> <th>DEMANE [Total vehih</th> <th>FLOWS HV]</th> <th>Deg. Saln v/c</th> <th>Aver. Delay sec</th> <th>Level of Service</th> <th>95% BACK ([Veh. veh</th> <th>of QUEUE Dist] m</th> <th>Prop.</th> <th>Effective Stop Rate</th> <th>Aver. No. Cycles</th> <th>Aver Speed km/h</th>	Mov ID	Tum	INPUT VI [Total veh/h	OLUMES HV]	DEMANE [Total vehih	FLOWS HV]	Deg. Saln v/c	Aver. Delay sec	Level of Service	95% BACK ([Veh. veh	of QUEUE Dist] m	Prop.	Effective Stop Rate	Aver. No. Cycles	Aver Speed km/h
16 0.0 17 0.0 0.175 4.6 LOSA 0.0 0.0 0.0 0.03 322 0.0 339 0.0 0.175 0.0 LOSA 0.0 0.0 0.0 0.0 338 0.0 361 0.0 0.199 0.199 0.2 LOSA 0.3 1.8 0.0 0.04 25 0.0 367 0.0 0.199 0.199 0.5 1.8 0.06 0.04 36 0.0 387 0.0 0.199 0.15 1.8 0.06 0.04 122 0.0 3.0 0.135 0.135 1.8 0.0 0.0 0.04 122 0.0 0.135 0.135 0.6 0.0	South: Dunns	Crossing Road					552000	200000							
322 0.0 339 0.0 0.175 0.0 LOSA 0.0 0.0 0.0 0.0 338 0.0 356 0.0 0.175 0.3 1.8 0.0 0.0 0.03 24 0.0 26 0.0 0.189 0.2 LOSA 0.3 1.8 0.06 0.04 25 0.0 26 0.0 0.189 6.1 LOSA 0.3 1.8 0.06 0.04 368 0.0 367 0.0 0.198 6.6 LOSA 0.3 1.8 0.06 0.04 86 0.0 367 0.0 0.135 86 LOSA 0.5 3.5 0.43 0.65 172 0.0 128 0.0 0.135 86 LOSA 0.5 3.5 0.43 0.65 823 0.0 128 0.0 0.135 0.135 0.6 0.5 0.5 0.43 0.65		77	16	0.0	17	0.0	0.175	4.6	LOSA	0.0	0'0	00'0	0.03	00.0	49.3
338 0.0 356 0.0 0.175 0.3 NA 0.0 0.0 0.03 343 0.0 361 0.0 0.198 0.2 LOSA 0.3 1.8 0.06 0.04 356 0.0 26 0.0 0.198 0.1 LOSA 0.3 1.8 0.06 0.04 88 0.0 35 0.0 0.135 5.6 LOSA 0.5 3.5 0.04 172 0.0 128 0.1 0.0SA 0.5 3.5 0.43 0.65 828 0.0 0.135 6 LOSA 0.5 3.5 0.43 0.65 828 0.0 0.135 6 LOSA 0.5 3.5 0.43 0.65 828 0.0 0.136 1.3 NA 0.5 3.5 0.43 0.65	2	F	322	0.0	339	0.0	0.175	0.0	LOSA	0.0	0.0	00.0	0.03	0.00	49.8
343 0.0 361 0.0 0.188 0.2 LOSA 0.3 1.8 0.08 0.04 25 0.0 26 0.0 0.198 0.6 NA 0.3 1.8 0.08 0.04 368 0.0 35 0.0 0.135 5.6 LOSA 0.5 3.5 0.43 0.65 34 0.0 3.6 0.0 0.135 8.6 LOSA 0.5 3.5 0.43 0.65 172 0.0 178 0.0 0.135 8.6 LOSA 0.5 3.5 0.43 0.65 828 0.0 367 0.0 0.135 8.6 LOSA 0.5 3.5 0.43 0.65 828 0.0 367 0.0 0.136 1.3 NA 0.5 3.5 0.43 0.65	Approach		338	0.0	356	0.0	0.175	0.3	NA	0.0	0.0	0.00	0.03	0.00	49.0
T1 343 0.0 361 0.0 0.158 0.2 LOSA 0.3 1.8 0.08 0.04 F2 25 0.0 25 0.198 6.1 LOSA 0.3 1.8 0.08 0.04 costs 1 0.0 35 0.198 0.198 0.6 NA 0.3 1.8 0.08 0.04 costs 1 8 1 1 1 1 0.08 0.04 0.04 0.04 0.04 0.04 0.05 </td <td>North: Dunns</td> <td>Crossing Road</td> <td></td>	North: Dunns	Crossing Road													
HZ 25 00 26 00 040 0198 61 LOSA 03 18 0.06 0.04 0.04 0.05 18 0.06 0.04 0.04 0.05 18 0.08 0.04 0.04 0.05 18 0.08 0.04 0.04 0.05 18 0.05 0.04 0.04 0.05 0.04 0.05 0.04 0.05 0.04 0.05 0.04 0.05 0.04 0.05 0.04 0.05 0.05	10	F	343	0.0	361	0.0	0.198	0.2	LOSA	0.3	1.8	90.0	0.04	80.0	49.6
868	6	R2	25	0.0	26	0.0	0,198	6.1	LOSA	0.3	1.8	0.08	0.04	80.0	48.6
L2 68 0.0 93 0.0 0.135 5.6 LOSA 0.5 3.5 0.43 0.65 R2 34 0.0 36 0.0 0.135 8.6 LOSA 0.5 3.5 0.43 0.65 1 122 0.0 126 0.135 6.6 LOSA 0.5 3.5 0.43 0.65 84 828 0.0 872 0.0 0.198 1.3 NA 0.5 3.5 0.10 0.12	Approach		368	0.0	387	0.0	0.198	9.0	NA	0.3	1,8	0.08	0.04	0.08	49.5
L2 68 0.0 93 0.0 0.135 5.6 LOSA 0.5 3.5 0.43 0.65 1 72 34 0.0 35 0.135 8.6 LOSA 0.5 3.5 0.43 0.65 1 12 0.0 12 0.135 6.6 LOSA 0.5 3.5 0.43 0.65 84 828 0.0 872 0.0 0.198 1.3 NA 0.5 3.5 0.10 0.12	West Access														
R2 34 0.0 36 0.0 0.135 86 LOSA 0.5 3.5 0.43 0.65 1 122 0.0 128 0.0 0.135 6.6 LOSA 0.5 3.5 0.43 0.65 ess 628 0.0 672 0.0 0.198 1.3 NA 0.5 3.5 0.10 0.12	10	77	88	0.0	93	0.0	0.135	60.0	LOSA	9.0	3.5	0.43	0.65	0.43	45.5
122 00 128 00 0135 66 LOSA 05 3.5 043 065 88 828 00 872 00 0198 13 NA 05 3.5 0.10 0.12	12	R2	34	0.0	36	0.0	0.135	9.6	LOSA	9.0	3.5	0.43	0.65	0.43	45.2
s 828 00 872 0.0 0.198 1,3 NA 0.5 3.5 0.10 0.12	Approach		122	0.0	128	0.0	0.135	9.6	LOSA	9.0	3.5	0.43	0.65	0.43	45.4
	All Vehicles		828	0.0	872	0.0	0.198	1,3	AN	0.5	3.5	0.10	0.12	0.10	49.0

Site Level of Service (LOS) Method: Delay (SIDRA), Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Delay Model: SIDRA Standard (Geometric Delay is included).

Sapa-Acceptance Capacity, SIDRA Standard (Akpelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Very Site: 101 [Dunns X-ing / Secondary - 2028 PM (Site Folder: Dunns X-ing / Secondary)]

New Site Category, (None)

Give-Way (Two-Way)

Vehicle Moven	Novement Performance	nce												
Mov	Tom	INPUT VC [Total veh/h	OLUMES HV]	DEMAND [Total vetsh	FLOWS HV]	Deg Sath	Aver. Delay sec	Level of Service	95% BACK O [Veh. veh	SACK OF QUEUE Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Dunns Crossing Road	ossing Road													
	77	14	0.0	15	0.0	0.164	4.6	LOSA		0.0		0.02	00:0	49.3
2	F	304	0.0	320	0.0	0.164	0.0	LOSA		0.0		0.02	0.00	49.8
Approach		318	0.0	335	0.0	0.164	0.2	AN		0.0	0.00	0.02	0.00	49.8
North: Dunns Crossing Road	ossing Road													
60	T1	424	0.0	446	0.0	0.291	9.0	LOSA	6.0	6.4	0.20	0.10	0.20	48.9
o	R2	88	0.0	93	0.0	0.291	6.2	LOSA	6.0	6.4	0.20	0.10	0.20	48.2
Approach		512	0.0	539	0.0	0.291	1.4	AN	6.0	6.4	0.20	0.10	0.20	48.8
West Access														
10	77	42	0.0	44	0.0	0.073	5.6	LOSA	0.3	1.8	0.42	0.63	0.42	45.3
12	R2	18	0.0	19	0.0	0.073	80.00	LOSA	0.3	60	0.42	0.63	0.42	45.1
Approach		09	0.0	63	0.0	0.073	6.9	LOSA	0.3	1.6	0.42	0.63	0.42	45.2
All Vehicles		890	0.0	937	0.0	0.291	1.4	Ā	6.0	4.6	0.15	0.11	0.15	48.9

Site Level of Service (LOS) Method: Delay (SIDRA), Site LOS Method is specified in the Parameter Settings dialog (Site lab).
Whiche movement LOS values are based on average delay per movements.
Minor Rod Approach LOS values are based on average delay for all vehicle movements.
Minor Rod Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Outset Model: SIDRA Standard (Geometric Delay is included).
All Meany Vehicle Model SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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SH1 / Dunns Crossing Rd / Walkers Rd Traffic Model Results



The state of the s				LOWS	Salt	WANGE.			4411414	7.00	400000000000000000000000000000000000000		AVEL MO
Mov ID	[Total	HV]	Total HV veh/h	¥.		Sec	Service	(Veh Dist)	Dest]	One	Stop Rate		o James
South: SH1													
1 12	38	0.0	40	0.0	0.295	7.4	LOSA	1.5	10.6	09.0	0.63		0.60
2 11	432	0.0	455	0.0	0.295	1.6	LOSA	1.5	10.6	09.0	29.0		0.60
3 R2	75	0.0	79	0.0	0.295	14.1	LOSB	1.4	10.1	0.61	0.72		0.61
Approach	545	0.0	574	0.0	0.295	9.6	LOSA	1.5	10.6	09:0	0.68	- T	09.0
East Dunns Crossing Road	Road												
4 12	101	0.0	106	0.0	0.317	9.3	LOSA	1.4	10.1	0.62	0.74	0	0.62
5 T1	147	0.0	155	0.0	0.317	8.7	LOSA	1.4	10.1	0.62	0.74	0	.62
6 R2	414	0.0	436	0.0	0.416	14.2	LOSB	2.2	15.6	0.64	98.0	0	29
Approach	662	0.0	269	0.0	0.416	12.2	LOSB	2.2	15,6	0.63	0.82	0	92
North: SH1													
7 12		0.0	156	0.0	0.349	6.3	LOSA	2.0	14.3	0.38	0.54	0	0.38
5 T1	26	0.0	680	0.0	0.349	7.2	LOSA	2.0	14.3	0.39	0.56	0	39
9 R2	27	0.0	77	0.0	0.349	12.6	LOSB	2.0	14.1	0.39	0.58	0	39
Approach	867	0.0	913	0.0	0.349	7.5	LOSA	2.0	14.3	0.39	0.56	0	39
West Walker Road													
10 12	150	0.0	85	0.0	0.267	10.8	LOS B	1.3	6.9	0.68	0.82	0	88
11 11		0.0	88	0.0	0.267	9.8	LOSA	1.3	9.00	0.68	0.82	0.6	92
12 R2	23	0.0	24	0.0	0.267	15.3	LOSB	1.3	6.6	0.68	0.82	0	0.68
Approach	188	0.0	198	0.0	0.267	10.8	FOS B	1.3	6.6	0.68	0.82	0	99
All Vehicles	2262	0.0	2381	0.0	0.416	9.7	LOSA	22	15.6	0.54	0.68	0	0.54

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▼ Site: 101 [SH1 / Dunns X-ing / Walker - 2028 PM (Site Folder: SH1 / Dunns X-ing)]
New Site
Site Caregory: (None)
Roundabout

Vehicle Move	Vehicle Movement Performance	ance												
Mov	Tum	INPUT [Total veh/h	VOLUMES HV]	DEMAN([Total veh/h	DEMAND FLOWS HV]	Salm Vc	Aver. Delay sec	Level of Service	95% BACK OI [Veh. veh	ACK OF QUEUE Dist] m	Prop.	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: SH1														
-	77	14	0.0	15	0.0	0.332	88	LOSA	1.8	12.3	0.51	0.58	0.51	64.6
2	T	551	0.0	580	0.0	0.332	8.1	LOSA	1.8	12.3	0.52	0.61	0.52	66.1
e	R2	138	0.0	145	0.0	0.332	13.3	LOSB	1.7	12.0	0.53	0.68	0.53	64.7
Approach		703	0.0	740	0.0	0.332	9.1	LOSA	1.8	12.3	0.52	0.63	0.52	65.8
East Dunns Crossing Road	rossing Road													
4	77	141	0.0	148	0.0	0.283	10.3	LOSB	1.7	12.2	0.73	0.77	0.73	64.0
9	11	66	0.0	104	0.0	0.283	0.6	LOSA	1.7	12.2	0.73	0.77	0.73	66.1
9	R2	230	0.0	242	0.0	0.321	15.4	LOSB	1.9	13.1	0.74	0.89	0.74	60.5
Approach		470	0.0	495	0.0	0.321	12.5	LOSB	6.1	13.1	0.73	0.83	0.73	62.6
North: SH1														
7	77	751	0.0	791	0.0	0.662	60	LOSA	63	44.4	0.69	0.73	0.75	64.8
60	1	673	0.0	708	0.0	0.662	6.9	LOSA	6.3	44.4	0.71	0.76	0.80	64.9
6	R2	61	0.0	64	0.0	0.662	15.1	LOSB	6.3	44.2	0.71	0.76	0.80	64.6
Approach		1485	0.0	1563	0.0	0.662	9.6	LOSA	6.3	44.4	0.70	0.74	0.77	64.9
West Walker Road	Road													
10	77	84	0.0	88	0.0	0.372	10.3	LOS B	6	13.1	69.0	0.82	0.74	63.4
11	Ħ	159	0.0	167	0.0	0.372	9.6	LOSA	1.9	13.1	69.0	0.82	0.74	65.3
12	R2	23	0.0	24	0.0	0.372	15.5	LOSB	1.9	13.1	69.0	0.82	0.74	65.2
Approach		266	0.0	280	0.0	0.372	10.4	LOSB	1.9	13.1	69.0	0.82	0.74	64.7
All Vehicles		2924	0.0	3078	0.0	0.662	7.6	LOSA	63	4.44	99'0	0.74	0.70	64.7

Site Level of Service (LOS) Method, Delay (SIDRA), Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Webtide movement LOS values as to based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capach Model: SIDRA Standard

Delay Model: SIDRA Standard (Semetric Delay is included).

Ourse Model: SIDRA Standard (Semetric Delay is included).

And Standard Capachy: SIDRA Standard

Gap-Acceptance Capachy: SIDRA Standard

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Burnham School Rd / Dunns Crossing Rd Traffic Model Results



MOVEMENT SUMMARY

| Site: 101 [Dunns X-ing / Burnham School - 2028 AM (Site Folder: Dunns X-ing / Burnham School)]

New Site Stategory; (None) Site Category; (None) Signals - EQUISAT (Fixed-Time/SCATS) isolated Cycle Time = 90 seconds (Site User-Given Cycle Time)

Vehicle Mov	Pehcle Movement Performance	ance												
Mov	TIM.	Total R	PUT VOLUMES HV]	DEMAND FLO [Total vet/h	D FLOWS HV]	Saln Ve	Aver. Delay sec	Level of Service	95% BACK O [Veh. veh	95% BACK OF QUEUE [Veh. Dist] veh. m	Prop. Oue	Effective Stop Rate	Aver No. Cycles	Aver. Speed km/h
South: Dunns	South: Dunns Crossing Road													
	12	98	0.0	16	0.0	0.595	262	TOS C	16.4	114.8	0.83	0.74	0.83	38.0
2	I	374	0.0	394	0.0	0.595	21.6	LOSC	16.4	114.8	0.83	0.74	0.83	38.2
e	R2	2	0.0	2	0.0	0.017	48.3	TOS D	0.1	9.0	0.95	0.61	0.95	29.8
Approach		462	0.0	486	0.0	0.595	22.6	D SOT	16.4	114.8	0.83	0.74	0.83	38.1
East Bumhar	East: Burnham School Road													
4	77	4	0.0	4	0.0	0.049	41.8	LOSD	0.5	3.4	0.90	0.64	06.0	32.4
15	T	69	0.0	60	0.0	0.049	37.3	LOSD	9.0	3.4	0.90	0.64	06.0	32.6
9	R2	m	0.0	e	0.0	0.015	43.5	COSD	0.1	6.0	0.91	0.63	0.91	31.0
Approach		15	0.0	16	0.0	0.049	39.7	TOS D	0.5	3.4	0.90	0.64	0.90	32.3
North: Dunns	North: Dunns Crossing Road													
7	12	2	0.0	2	0.0	0.609	25.8	LOSC	15.5	108.2	0.81	0.71	0.81	38.4
60	T	439	0.0	462	0.0	e 0.609	21.2	LOSC	15.5	108.2	0.81	0.71	0.81	38.7
o	R2	61	0.0	64	0.0	* 0.519	51.8	TOSD	2.9	20.6	1.00	9.70	1.01	29.0
Approach		205	0.0	528	0.0	0.609	25.0	7 SO7	15.5	108.2	0.84	0.72	0.84	37.2
West Burnha	West Burnham School Road													
10	2	107	0.0	113	0.0	0.621	46.3	LOSD	6.8	47.6	0.99	0.82	1.03	30.7
£	I	41	0.0	43	0.0	• 0.621	41.7	LOSD	8.8	47.6	0.99	0.82	1.03	30.9
12	R2	115	0.0	121	0.0	• 0.587	47.9	TOSD	5.3	37.4	1.00	08.0	1.02	29.9
Approach		263	0.0	277	0.0	0.621	46.3	TOS D	6.8	47.6	0.99	0.81	1.02	30.4
All Vehicles		1242	0.0	1307	0.0	0.621	28.8	COSC	16.4	114.8	78.0	0.75	0.87	35.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle morement (LOS values are based on average delay per movement.
Inflerescent and Approach, LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard (Geometric Delay is included).
And Control Model: SIDRA Standard
Geometric Capacity, SIDRA Standard
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.



MOVEMENT SUMMARY

Site: 101 [Dunns X-ing / Burnham School - 2028 PM (Site Folder: Dunns X-ing / Burnham School)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated. Cycle Time = 90 seconds (Site User-Given Cycle Time)

Vehicle Move	Vehicle Movement Performance	nce												
Mov ID	Tum	INPUT VO	LUMES HV] %	DEMAND FL [Total veh/h	FLOWS HV]	Safth Vic	Aver Delay sec	Level of Service	95% BACK OF QUEUE [Veh. Dist] veh	COVEUE Dest] m	Prop. Oue	Effective Stop Rate	Aver No Cycles	Aver Speed km/h
South: Dunns Crossing Road	Crossing Road													
-	77	99	0.0	69	0.0	0.532	20.4	LOSC	15.4	107.7	0.72	99.0	0.72	40.5
2	F	433	0.0	456	0.0	0.532	15.8	LOSB	15.4	107.7	0.72	99.0	0.72	40.8
8	R2	2	0.0	2	0.0	0.017	48.3	LOSD	0.1	9.0	0.95	0.61	0.95	29.8
Approach		501	0.0	527	0.0	0.532	16.5	LOSB	15.4	107.7	0.72	99.0	0.72	40.7
East Burnham School Road	School Road													
4	77	-	0.0	-	0.0	0.122	46.9	LOSD	6.0	6.2	0.95	19:0	0.95	31.4
2	F	19	0.0	20	0.0	0.122	42.4	LOSD	6.0	6.2	0.95	0.67	0.95	31.6
9	R2	2	0.0	2	0.0	0.017	48.3	LOSD	0.1	9.0	0.95	0.61	0.95	29.8
Approach		22	0.0	23	0.0	0.122	43.1	TOS D	6.0	6.2	0.95	19:0	0.95	31.4
North: Dunns Crossing Road	rossing Road													
7	77	7	0.0	7	0.0	0.741	22.3	LOSC	22.3	156.3	0.81	0.73	0.81	39.9
60	F	639	0.0	673	0.0	* 0.741	17.7	LOSB	22.3	156.3	0.81	0.73	0.81	40.2
ø	R2	84	0.0	80	0.0	*0.714	53.9	TOSD	4.2	29.5	1.00	98.0	121	28.5
Approach		730	0.0	768	0.0	0.741	21.9	LOSC	22.3	156.3	0.83	0.74	0.86	38.4
West Burnham School Road	School Road													
10	7	38	0.0	40	0.0	0.352	48.5	LOSD	2.6	18.0	86.0	0.74	0.98	30.3
F	F	18	0.0	19	0.0	• 0.352	43.9	TOSD	2.6	18.0	0.98	0.74	0.98	30.4
12	R2	47	0.0	49	0.0	* 0.400	512	TOSD	2.2	15.7	1.00	0.74	1.00	29.1
Approach		103	0.0	108	0.0	0.400	48.9	TOSD	2.6	18.0	0.99	0.74	66.0	29.8
All Vehicles		1356	0.0	1427	0.0	0.741	223	COSC	22.3	156.3	08.0	17.0	0.82	38.2

Site Level of Service (LOS) Method: Delay (SIDRA), Site LOS Method is specified in the Parameter Settings dialog (Site tab). Vehicle movement LOS values are based on average delay for all vehicle movements. Intersection and Approach LOS values are based on average delay for all vehicle movements. Delay Model: SIDRA Standard (Seament Delay is included). Outure Models (SIDRA Standard Canamand). Standard (Aspack SIDRA Standard (Aspack MXD). All Vehicle Model Designation.



Brookside Rd / Dunns Crossing Rd Traffic Model Results



MOVEMENT SUMMARY

Very Site: 101 [Dunns X-ing / Brookside - 2028 AM (Site Folder: Dunns X-ing / Brookside)]

New Site
Site Category: (Nove)
Site-Nay (Nov-Nay)

Vehicle Move	Vehicle Movement Performance	ince												
Mov	Turn	INPUT V [Total veh/h	OLUMES HV]	DEMAND [Total veb/h) FLOWS HV]	Sath Vic	Aver Delay sec	Level of Service	95% BACK O [Veh. veh	ACK OF QUEUE Dist] m	Prop. Oue	Effective Stop Rate	Aver, No. Cycles	Aver. Speed km/h
South: Dunns Crossing Rd	Crossing Rd													
1	77	2	0.0	2	0.0	0.587	103	LOSB	6.7	46.7	69.0	0.47	1.16	45.1
63	11	422	0.0	444	0.0	0.587	4.7	LOSA	6.7	46.7	0.69	0.47	1.16	45.5
m	R2	336	0.0	354	0.0	0.587	103	FOS B	6.7	46.7	69.0	0.47	1.16	44.8
Approach		760	0.0	800	0.0	0.587	7.2	NA	6.7	46.7	0.69	0.47	1.16	45.2
East Brookside Road	le Road													
4	27	16	0.0	96	0'0	0.375	7.8	LOSA	1.5	10.6	0.70	0.92	0.93	41.1
8	F	10	0.0	=	0.0	0.375	22.9	LOSC	1.5	10.6	0.70	0.92	0.93	41.2
9	R2	36	0.0	38	0.0	0.375	29.4	LOSD	1.5	10.6	0.70	0.92	0.93	40.8
Approach		137	0.0	144	0.0	0.375	15.2	LOSC	1.5	10.6	0.70	0.92	0.93	41.0
North: Dunns Crossing Rd	Crossing Rd													
7	12	71	0.0	75	0.0	0.289	47	LOSA	0.1	0.4	0.01	0.07	0.01	49.1
60	I	481	0.0	206	0.0	0.289	00	LOSA	1.0	0.4	0.01	0.07	0.01	49.6
ø	R2	m	0.0	e	0.0	0.289	7.0	LOSA	0.1	0.4	0.01	0.07	0.01	48.7
Approach		555	0.0	584	0.0	0.289	0.7	NA	0.1	0.4	0.01	0.07	0.01	49.5
West Brookside Road	de Road													
10	2	2	0.0	2	0.0	0.029	6.1	LOSA	0.1	9.0	0.76	0.81	92'0	40.5
=	1	4	0.0	4	0.0	0.029	19.2	70SC	0.1	9.0	0.76	0.81	92.0	40.6
12	R2	-	0.0	-	0.0	0.029	25.6	CSOT	0.1	9.0	0.76	0.81	92.0	40.3
Approach		7	0.0	7	0.0	0.029	16.3	LOSC	0.1	9.0	92.0	0.81	92.0	40.5
All Vehicles		1459	0.0	1536	0.0	0.587	5.5	NA	6.7	46.7	0.44	0.36	0.70	46.2

Site Level of Service (LOS) Method. Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle and recement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included.)
Delay Model: SIDRA Standard (Geometric Delay is included.)
An expectation of Standard (Saconetric Delay is included.)
May Standard (Saconetric Delay May Vehicle Model Designation.
Why shalues are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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▼ Site: 101 [Dunns X-ing / Brookside - 2028 PM (Site Folder: Dunns X-ing / Brookside)]

New Site
Ric Category: (None)
Give-Way (Two-Way)

Vehicle Mo	Vehicle Movement Performance	nance												
Mov ID	Turn	INPUT VI [Total veh/h	NPUT VOLUMES	DEMAND FLOV (Total veh/h	D FLOWS HV]	Deg. Safth v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. Dist]	of oueue Dist] m	Prop.	Effective Stop Rate	Aver No. Cycles	Aver. Speed kmh
South: Duni	South: Dunns Crossing Rd													
	27	2	0.0	2	0.0	0.425	10.5	LOSB	3.2	22.7	0.51	0.21	0.72	46.3
2	F	445	0.0	468	0'0	0.425	3.2	LOSA	3.2	22.7	0.51	0.21	0.72	46.8
e	R2	144	0.0	152	0.0	0.425	10.5	LOSB	3.2	22.7	0.51	0.21	0.72	46.0
Approach		591	0.0	622	0.0	0.425	9:0	NA	3.2	22.7	0.51	0.21	0.72	46.6
East Brookside Road	side Road													
4	12	248	0.0	261	0.0	0.656	13.8	LOSB	4.1	28.7	0.80	1.18	1.59	40.1
S	T	=	0.0	12	0.0	0.656	27.3	CSOT	4.1	28.7	0.80	1.18	1.59	40.2
9	R2	45	0.0	47	0.0	0.656	34.3	TOSD	4.1	28.7	0.80	1.18	1.59	39.9
Approach		304	0.0	320	0.0	0.656	17.3	COSC	4.1	28.7	0.80	1.18	1.59	1.04
North: Dunn	North: Dunns Crossing Rd													
7	27	27	0.0	28	0.0	0.357	40	LOSA	0.0	0.3	0.01	0.02	0.01	49.4
60	T	661	0.0	969	0.0	0.357	0.0	LOSA	0.0	0.3	0.01	0.02	0.01	49.8
6	R2	2	0.0	2	0.0	0.357	7.5	LOSA	0.0	0.3	0.01	0.02	0.01	49.0
Approach		069	0.0	726	0.0	0.357	0.2	NA	0.0	0.3	0.01	0.02	0.01	49.8
West Brookside Road	cside Road													
10	77	-	0.0	-	0.0	0.041	62	LOSA	0.1	8.0	0.82	0.88	0.82	39.2
1	F	9	0.0	\$	0.0	0.041	17.5	LOSC	0.1	0.8	0.82	0.88	0.82	39.3
12	R2	2	0.0	2	0.0	0.041	31.0	LOSD	0.1	8.0	0.82	0.88	0.82	39.0
Approach		60	0.0	69	0.0	0.041	19.5	70SC	0.1	8.0	0.82	0.68	0.82	39.2
All Vehicles	150	1593	0.0	1677	0.0	0.656	5.4	NA	4.1	28.7	0.35	0.32	95 0	46.4

Site Level of Service (LOS) Method: Delay (SIDRA), Site LOS Method is specified in the Parameter Settings dialog (Site lab).
Whiche movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Delay Model: SIDRA Standard (Geometric Delay is included).
Gauge-Models SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Lowes Rd / Dunns Crossing Rd Traffic Model Results – Priority Controlled



▼ Site: 101 [Dunns X-ing / Lowes - 2028 AM (Site Folder: Dunns X-ing / Lowes)]

New Site
Of Cale
Office-View (None)
Other-View (None-View)

Vehicle Mov	le Movement Performance	ance						200				1	200	
NO D	Tum	INPUT (Total veh/h	VOLUMES HV]	DEMAN [Total veh/h	ID FLOWS HV j	Safty Vic	Aver. Delay sec	Level of Service	95% BACK (Veh veh	BACK OF QUEUE Dist] m	Prop Oue	Effective Stop Rafe	Aver No Cycles	Aver. Speed km/h
South: Dunns	South: Dunns Crossing Road													
2	ī	613	0.0	645	0.0	0.416	12	LOSA		13.3		60.0	0.35	48.5
n	R2	88	00	93	0.0	0.416	9.1	LOSA		13.3		0.09	0.35	47.7
Approach		701	0.0	738	0.0	0.416	2.2	AN		13.3		0.09	0.35	48.4
East Lowes Road	Road													
4	77	37	0.0	39	0.0	0.539	9.2	LOSA		16.7		1.00	1.20	39.8
9	R2	149	0.0	157	0.0	0.539	20.0	10SC		16.7		1.00	1.20	39.6
Approach		186	0.0	196	0.0	0.539	17.9	7 SO7		16.7		1.00	1.20	39.6
North: Dunns	orth: Dunns Crossing Road													
7	77	284	0.0	299	0.0	0.303	4.7	LOSA		0.0		0.27	0.00	47.9
60	F	289	00	304	0.0	0.303	0.1	LOSA		0.0		0.27	00.0	48.4
Approach		573	0.0	603	0.0	0.303	2.4	NA		0.0	00'0	0.27	0.00	48.1
All Vehicles		1460	0.0	1537	0.0	0.539	4.3	NA	2.4	16.7		0.28	0.32	47.0

Site Level of Service (LOS) Method: Delay (SIDRA), Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Delay Aborder SIDRA Standard (Geometric Delay is included).

Sala Aborder SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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▼ Site: 101 [Dunns X-ing / Lowes - 2028 PM (Site Folder: Dunns X-ing / Lowes)]

New Site
Site Categor: (None)
Site Categor: (None)
Site Categor: (None)

Vehicle Move	hicle Movement Performance	nce												
Mov	Tum	INPUT V [Total veh/h	UT VOLUMES HV]	DEMAND [Total veh/h	FLOWS HV]	Safri Safri	Aver Delay sec	Level of Service	95% BACK ([Veh. veh	6 BACK OF QUEUE Dest] m	Prop.	Effective Stop Rate	Aver No. Cycles	Aver Speed km/h
South: Dunns Crossing Road	Crossing Road													
2	1	402	0.0	423	0.0	0.320	3.1	LOSA	1.9	13.3		60.0	0.48	47.2
60	R2	55	0.0	28	0.0	0.320	13.6	LOSB	1.9	13.3		60.0	0.48	46.6
Approach		457	0.0	481	0.0	0.320	6.4	N.A.	9,1	13.3	0.38	60.0	0.48	47.1
East Lowes Road	peq													
4	12	68	0.0	94	0.0	0.131	8.4	LOSA	9.0	3.3		0.81	09.0	44.4
9	R2	199	0.0	209	0.0	0.889	47.2	LOSE	5.8	40.9		1.53	2.90	30.0
Approach		288	0.0	303	0.0	0.889	35.2	LOSE	89.00	40.9		1.31	2.19	33.4
North: Dunns Crossing Road	Prossing Road													
7	12	206	0.0	217	0.0	0.475	4.7	LOSA	0.0	0.0		0.12	0.00	48.6
10	F	705	0.0	742	0.0	0.475	0.2	LOSA	0.0	0.0		0.12	00.0	49.0
Approach		116	0.0	656	0.0	0.475	1.2	NA	0.0	0.0		0.12	0.00	48.9
All Vehicles		1656	0.0	1743	0.0	0.889	8.0	NA	5.8	40.9	0.25	0.32	0.51	44.8

Site Level of Service (LOS) Method. Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site lab).
Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Ourse Model: SIDRA Standard (Geometric Delay is included).

All Mesary Vehicle MODE, Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Lowes Rd / Dunns Crossing Rd Traffic Model Results – Signal Controlled



Vehicle Mov	le Movement Performance	ance												
Mov	Ę	INPUT V [Total veh/h	OLUMES HV]	DEMAND [Total veh/h	FLOWS HV]	Deg Sath v/c	Aver. Delay sec	Level of Service	95% BACK C [Veh. veh	CK OF QUEUE Dest] m	Prop. Oue	Effective Stop Rafe	Aver. No. Cycles	Aver. Speed km/h
South: Dunns	South: Dunns Crossing Road													
2	T1	613	0.0	645	0.0	* 0.468	7.2	LOSA		92.1	0.51	0.46	0.51	45.5
9	R2	80 80	0.0	93	00	0.206	17.2	LOSB		15.5	0.57	0.70	0.57	40.0
Approach		701	0.0	738	0.0	0.466	8.5	LOSA		92.1	0.52	0.49	0.52	44.7
East Lowes Road	Road													
4	77	37	0.0	39	0.0	0.113	37.6	LOSD		10.1	0.86	0.72	0.86	32.8
ø	R2	149	0.0	157	00	* 0.454	40.4	COSD		44.0	0.93	0.79	0.93	32.0
Approach		186	0.0	196	0.0	0.454	39.8	TOS D	6.3	44.0	0.92	0.78	0.92	32.2
North: Dunns	North: Dunns Crossing Road													
7	27	284	0.0	288	0.0	0.227	10.4	LOSB		34.4	0.41	99.0	0.41	43.4
60	I	289	0.0	304	00	0.220	0.5	LOSA		34.7	0.40	0.35	0.40	46.3
Approach		573	0.0	603	0.0	0.227	8.1	LOSA	5.0	34.7	0.41	0.50	0.41	44.8
All Vehicles		1460	0.0	1537	0.0	0.466	12.3	RSOT		92.1	0.52	0.53	0.52	42.6

Site Level of Service (LOS) Method: Delay (SIDRA), Site LOS Method is specified in the Parameter Settings dialog (Site tab). Vehicle movement LOS values are based on average delay per mnovement. Intersection and Approach LOS values are based on average delay for all vehicle movements. Delay mode: SIDRA Standard (Secontent Delay is included). Outer Modes: SIDRA Standard (As content Delay is included). Gap-Acceptance Capacht; SIDRA Standard (Aspails MDS). HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.



Vehicle Mov	cle Movement Performance	nce												
Mov	Tum	INPUT VOLUMES [Total h	LUMES HV]	DEMAND [Total veh/h	FLOWS HV]	Sath Sath	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. Dist]	or queue Dest] m	Prop. Oue	Effective Stop Rate	Aver No. Cycles	Aver Speed km/h
South: Dunns	South: Dunns Crossing Road													
64	E	402	0.0	423	0.0	0.311	6.7	LOSA	7.7	53.8	0.45	0.40	0.45	45.8
3	R2	55	0.0	28	0.0	0.212	19.9	LOSB	1.5	10.8	0.61	0.71	0.61	38.9
Approach		457	0.0	481	0.0	0.311	60	LOSA	7.7	53.8	0.47	0.43	0.47	44.8
East Lowes Road	peop													
4	77	680	0.0	94	0.0	0.256	37.9	TOS D	3.5	24.8	0.88	0.76	0.88	32.7
9	R2	199	0.0	209	0.0	• 0.573	40.6	0 SO7	8.5	59.8	0.95	0.81	0.95	32.0
Approach		288	0.0	303	0.0	0.573	39.7	TOS D	8.5	59.8	0.93	0.80	0.93	32.2
North: Dunns	Vorth: Dunns Crossing Road													
7	27	206	0.0	217	0.0	0.167	10.5	LOSB	3.5	24.5	0,40	0.65	0.40	43.3
60	F	705	0.0	742	0.0	* 0.569	83	LOSA	16.8	117.9	0.57	0.51	0.57	44.9
Approach		911	0.0	959	0.0	0.569	80.00	LOSA	16.8	117.9	0.53	0.55	0.53	44.5
All Vehicles		1656	0.0	1743	0.0	0.573	14.1	8 S07	16.8	117.9	0.58	0.56	0.58	41.8

Site Level of Service (LOS) Method, Delay (SIDRA), Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement (LOS values are based on average delay per movement.
Intersection and Approach, LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model SIDRA Standard (Geometric Delay is included).
And Standard (Geometric Delay Standard (Abcellé M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Rolleston West Residential Ltd Dunns Crossing Road Rolleston



Appendix 15

Dunns Crossing Rd / Goulds Rd / Selwyn Rd Traffic Model Results

BE Network: N101 [Dunns / Goulds / Selwyn - 2028 AM (Network Folder: General)]



MOVEMENT SUMMARY

▼ Site: 101 [Dunns X-ing / Goulds - 2028 AM (Site Folder: Dunns X-ing / Gould / Selwyn)]

New Site Site Category: (None) Give-Way (Two-Way)

Vehicle Move	ehicle Movement Performance													
Mov	Tum	E Total	MS HV]	ARRIVAL FLOWS [Total HV vehith %	TOWS HV]	Deg Sath v/c	Aver Delay sec	Level of Service	AVERAGE BACK OF QUEUE (Veh. Dist	F QUEUE Dist)	Prop. Que	Effective Stop Rate	Aver No. Cycles	Aver Speed km/h
South Goulds Road	Road													
-	77	254	0.0	254	0.0	0.173	2.1	LOSA	0.0	0.0	0.00	0.37	0.00	47.0
2	11	74	0.0	74	0.0	0.173	0.0	LOSA	0.0	0.0	0.00	0.37	0.00	47.9
Approach		327	0.0	327	0.0	0.173	1.6	NA	0.0	0.0	0.00	0.37	0.00	47.2
North: Goulds Road	Road													
60	11	108	0.0	108	0.0	0.109	0.2	LOSA	0.1	0.4	0.13	0.08	0.13	48.5
ø	R2	17	0.0	17	0.0	0.109	5.7	LOSA	0.1	0.4	0.13	0.08	0.13	48.3
Approach		125	0.0	125	0.0	0.109	1.0	NA	0.1	0.4	0.13	0.08	0.13	48.4
West Dunns Crossing Road	Prossing Road													
10	77	14	0.0	4.	0.0	0.665	2.0	LOSA	1.2	8.5	0.42	0.80	69:0	44.4
12	R2	375	0.0	375	0.0	0.665	9.5	LOSA	12	8.5	0.42	0.80	69.0	40.7
Approach		388	0.0	388	0.0	0.665	4	LOSA	1.2	8.5	0.42	0.80	69.0	40.9
All Vehicles		841	0.0	841	0.0	0.665	4.7	NA	12	8.5	0.21	0.53	0.34	44.3
Site Level of St Vehicle movern Minor Road Api NA: Intersection Delay Model: Si Gap-Acceptanc HV (%) values a	Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data Webtled movement. LOS values are based on average delay for anowment. Minor Road Approach LOS values are based on average delay for all vehicle movements. NA: Intersection LOS and Major Road Approach LOS values are host of all vehicle movements. Delay Mode! SIDRAS Shandar (doesnet Delay is included). Delay Mode! SIDRAS Shandar (doesnet Delay is included). Sap-Acceptance Capacity. SIDRA Shandar (doesnet Delay Mode). We shand shandar Applicable for two-way sign control Sap-Acceptance Capacity. SIDRA Shandar (Akcelle M3D).	Delay (SIDRA) Site I seed on average dela e based on average d 1 Approach LOS valus retric Delay is include andard (Akçelik M3D) toverment Classes of	OS Method is y per moveme telay for all veh es are Not App d).	specified in the nit. nicle movement ilicable for two- cle Model Desi	Network Data dialog (1 's's. way sign control since t. gnation.	Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab). Minch Rode movement LOS values are based on average delay for all vehicle movements. Minch Rode Approach LOS values are based on average delay for all vehicle movements. NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements believe to the stable of the stab	good LOS measure	due to zero delays asso	ciated with major road mo	vements.				

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BG Network: N101 [Dunns / Goulds / Selwyn - 2028 AM (Network Folder: General)]

e Site: 101 [Goulds / Selwyn - 2028 AM (Site Folder: Dunns X-ing / Gould / Selwyn)] MOVEMENT SUMMARY

New Site Site Category: (None) Stop (Two-Way)

Vehicle Moven	Vehicle Movement Performance	a												
Mov	Turn	DEMAND FLOWS	SWC	ARRIVAL FLOWS	OWS	Dea	Aver	Level of	AVERAGE BACK O	FOUEUE	Prop	Effective	Aver No.	Aver
Q		[Total veh/h	ξ×	(Total	Ž*	S. S	Delay	Service	[Veh. Dist] m	Dist.)	One	Stop Rate	Cycles	Speed
South: Goulds Road	ped													
-	77		0.0	-	0.0	0.127	8,9	LOSA	0.2	1.3	0.49	0.98	0.49	61.4
2	11	76	0.0	94	0.0	0.127	1.1	LOSB	0.2	1.3	0.49	0.98	0.49	55.0
60	R2	60	0.0	60	0.0	0.127	16.0	LOSC	0.2	1.3	0.49	0.98	0.49	61.0
Approach		85	0.0	92	0.0	0.127	11.6	LOSB	0.2	1.3	0.49	96 0	0.49	56.1
East: Selviyn Road	p													
4	77	13	0.0	13	0.0	0.193	7.3	LOSA	0.4	2.8	0.23	0.39	0.23	67.4
10	1	119	0.0	119	0.0	0.193	0.3	LOSA	0.4	2.8	0.23	0.39	0.23	71.8
9	R2	202	0.0	202	0.0	0.193	7.0	LOSA	0.4	2.8	0.23	0.39	0.23	65.2
Approach		334	0.0	334	0.0	0.193	4	NA	0.4	2.8	0.23	0.39	0.23	68.5
North: Goulds Road	pe													
7	77	343	0.0	343	0.0	0.479	5.2	LOSA	1.3	9.1	0.22	0.94	0.25	56.3
60	11	4	0.0	4	0.0	0.479	65.50	LOSA	1.3	9.1	0.22	0.94	0.25	55.9
ø	R2	96	0.0	96	0.0	0.479	10.2	LOSB	1.3	9.1	0.22	0.94	0.25	55.6
Approach		483	0.0	483	0.0	0.479	6.5	LOSA	1.3	9.1	0.22	0.94	0.25	56.1
West. Selwyn Road	pe													
10	27	49	0.0	49	0.0	0.059	7.0	LOSA	0.0	0.0	0.01	0.29	0.01	70.4
11	7	62	0.0	62	0.0	0.059	0.0	LOSA	0.0	0.0	10.0	0.29	0.01	74.8
12	R2	-	0.0	-	0.0	0.059	7.0	LOSA	0.0	0.0	0.01	0.29	0.01	9.69
Approach		113	0.0	113	0.0	0.059	3.1	NA	0.0	0.0	0.01	0.29	0.01	73.5
All Vehicles		1015	0.0	1015	0.0	0.479	5.9	NA	13	9.1	0.22	69'0	0.24	62.5
Site Level of Sen Vehicle movemen Minor Road Appr. NA: Intersection L Delay Model: SID: Gap-Acceptance 1 HV (%) values are	ice (LOS) Method: ILOS values are bi- ach LOS values ar. OS and Major Roal RA Standard (Geor. Papacity: SIDRA St calculated for All M.	Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Networ Whelde movement LOS values are based on average delay per movement and the state of the Commission	to LOS Method is: slay per movement s detay for all vehi lues are Not Applided). D).	specified in the it. cle movement: icable for two-v	Site Level of Service (LOS) Method. Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab) the left in the Color Values are based on average delay per movement. Minner Road Approach LOS values are based on average delay for all vehicle movements. Whi Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average elay who who SiDRAS Standard (Geometric Delay is included). Gap-Acceptance Capachy, SIDRAS Standard (Akcelk M3D).	Site Level of Service (LOS) Method. Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab). Minder load Service (LOS) whether a based on average delay for all vehicle movements. Minder Road Approach LOS values are based on on average delay for all vehicle movements. NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-viray sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements. NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-viray sign control since the average delay is not a good LOS measure due to zero delays associated vith major road movements. Sign Major Road Applicable (Akcelik M3D). Sign Acceptable Capacity, SIDRA Standard (Akcelik M3D). NA: Vith Vith Values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.	a good LOS measure	due to zero delays asso	cialed with major road m	ovements.				

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Pa Network: N101 [Dunns / Goulds / Selwyn - 2028 PM (Network Folder: General)]



MOVEMENT SUMMARY

Site: 101 [Dunns X-ing / Gould / Selwyn]]

New Site Site Category: (None) Give-Way (Two-Way)

The second second second														
Vehicle Movem	ehicle Movement Performance													
Mov	Tum	DEMAND FLOWS Total vehth	ows HV]	ARRIVAL FI [Total veh/h	LFLOWS HV]	Sath Vic	Aver Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. Dest] veh. m	WEUE Deat]	Prop. E	Effective Av Stop Rate	Aver. No. Cycles	Aver Speed km/h
South: Goulds Road	ped													
-	77	264	0.0	264	0.0	0.184	2.1		0.0	0.0	0.00	0.36	0.00	47.1
2	11	85	0.0	92	0.0	0.184	0.0		0.0	0.0	0.00	0.36	0.00	47.9
Approach		349	0.0	349	0.0	0.184	1.6	NA	0.0	0.0	0.00	0.36	0.00	47.3
North: Goulds Road	pe													
8	T1	134	0.0	134	0.0	0.085	0.3		0.1	0.5	0.14	0.08	0.14	48.4
6	R2	21	0.0	21	0:0	0.085	5.8		0.1	0.5	0.14	0.08	0.14	48.3
Approach		155	0.0	155	0.0	0.085	1.0	NA	0.1	0.5	0.14	0.08	0.14	48.4
West Dunns Crossing Road	ssing Road													
10	77	22	0.0	22	0.0	0.685	7.5		1.1	7.4	0.41	0.83	0.71	44.1
12	R2	313	0.0	313	0.0	0.685	9.2		11	7.4	0.41	0.83	0.71	40.1
Approach		335	0.0	335	0.0	0.685	9.1	LOSA	1.1	7.4	0.41	0.83	0.71	40.5
All Vehicles		839	0.0	839	0.0	0.685	4.5		17	7.4	0.19	0.50	0.31	44.5
Site Level of Servit	ce (LOS) Method: D	belay (SIDRA), Site	LOS Method is s,	specified in the	Site Level of Service (LOS) Method: Delay (SIDRA), Site LOS Method is specified in the Network Data dialog (Network tab)	twork tab).								

Sile Level of Service (LOS) Method: Delay (SUDACA), she bused on average delay for inveneent.

Vehicle movement LOS values are based on average delay for movements.

Minne Road Approach LOS values are based on average delay for all vehicle movements.

NA: intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Palay Model: SIDAA Standard Cleanantic Delay in Included.

Gapa-Acceptance Capachy; SIDAA Standard (Akyelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation. SIDRA INTERSECTION 8.0.1 Copyright © 2000-2020 Akeelik and Associates Pty Ltd. | sidrasolutions.com Organisator NOO GROUPLE EN LUST INTER DEACHER EN LUST INTER PROSESS SUGAR SHOWNER 2020 SH 12 and 2020 SH 2 PB Network: N101 [Dunns / Goulds / Selwyn - 2028 PM (Network Folder: General)]

MOVEMENT SUMMARY

Collids / Selwyn - 2028 PM (Site Folder: Dunns X-ing / Gould / Selwyn)]

New Site Site Category: (None) Stop (Two-Way)

Vehicle Move	ehicle Movement Performance													
Mov	Tum	DEMAND FLOWS [Total H	OWS HV]	ARRIVAL FLOWS [Total HV vehih %	TOWS HV]	Deg Safn vic	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. Dist] veh. m	F OUEUE Dist] m	Prop. Oue	Effective Stop Rate	Aver No. Cycles	Aver. Speed km/h
South: Goulds Road	Road													
	77	-	0.0	_	0.0	0.088	1.6	LOSA	0.1	6.0	0.48	0.98	0.48	61.4
2	F	51	0.0	51	0.0	0.088	11.3	LOSB	0.1	6.0	0.48	0.98	0.48	54.8
8	R2	9	0.0	9	0.0	0.088	15.0	LOSB	0.1	6.0	0.48	96 0	0.48	6.09
Approach		28	0.0	28	0.0	0.088	11.7	FOS B	0.1	6.0	0.48	0.98	0.48	56.1
East. Selvryn Road	peo													
4	77	7	0.0	7	0.0	0.190	7.5	LOSA	9.4	2.8	0.30	0.47	0.30	66.3
2	F	76	0.0	76	0.0	0.190	9.0	LOSA	0.4	2.8	0.30	0.47	0.30	70.4
9	R2	226	0.0	226	0.0	0.190	7.2	LOSA	0.4	2.8	0.30	0.47	0.30	63.1
Approach		309	0.0	309	0.0	0.190	5.6	NA	0.4	2.8	0.30	0.47	0.30	65.8
North: Goulds Road	Road													
7	77	248	0.0	248	0.0	0.500	5.9	LOSA	1.4	10.0	0.33	0.98	0.43	54.7
60	F	87	0.0	22	0.0	0.500	9.2	LOSA	1.4	10.0	0.33	0.98	0.43	54.3
6	R2	111	0.0	Ħ	0.0	0.500	10.5	8 507	14	10.0	0.33	96.0	0.43	54.1
Approach		446	0.0	446	0.0	0.500	7.7	LOSA	1.4	10.0	0.33	0.98	0.43	54.5
West Selvyn Road	load													
10	7	73	0.0	73	0.0	0.088	6.9	LOSA	0.0	0.0	00.0	0.29	0.00	70.6
=	F	94	0.0	94	0.0	0.088	0.0	LOSA	0.0	0.0	0.00	0.29	00'0	74.9
12	R2	-	0.0		0.0	0.088	6.9	LOSA	0.0	0.0	0.00	0.29	00.0	69.7
Approach		167	0.0	167	0.0	0.088	3.1	NA	0.0	0.0	0.00	0.29	0.00	73.6
All Vehicles		1861	0.0	981	0.0	0.500	6.5	NA	1.4	10.0	0.27	0.70	0.32	61.7
Site Level of Ser	rvice (LOS) Method: L	Delay (SIDRA). Site	e LOS Method is	specified in the	Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab)	letwork tab).								

on Ectory internot and property (SIGNOR) and a set based on average delay gramment in a promotine and the property of set and a set based on average delay for all vehicle movement.

Minor Road Approach LOS status are absed on average delay for all vehicle movements.

Minor Road Approach LOS status are absed on average delay for all vehicle movements.

Delay Model: SIGNOR Approach LOS status are are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIGNOR Astrudard (Apple MAD)

Gap-Acceptance Capacity: SIGNOR Standard (Apple MAD)

HY (%) values are cabacity of All Movement Classes of All Heavy Vehicle Model Designation.