Mount Gilead Pty Ltd and S & A Dzwonnik

Mount Gilead Rezoning - Traffic, Transport and Access Study

2 July 2014

PARSONS BRINCKERHOFF

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Glossary

AADT	Annual Average Daily Traffic
ASD	Approach Sight Distance
BTS	Bureau of Transport Statistics
CBD	Central Business District
CCC	Campbelltown City Council
DCP	Development Control Plan
DoP&I	NSW Department of Planning & Infrastructure
DoS	Degree of Saturation
DP	Development Plan
IDM	Intersection Diagnostic Monitor
JTW	Journey to Work
Km/h	Kilometres per hour
GFA	Gross Floor Area
GLFA	Gross Leasable Floor Area
HV	Heavy vehicle
LoS	Level of Service
LGA	Local Government Area
LV	Light vehicle
m	metres
m^2	Square metres
MDP	Metropolitan Development Program
MVKT	Million vehicle kilometres travelled
RMS	Roads and Maritime Services
SCATS	Sydney Coordinated and Adaptive Traffic System
SISD	Safe Intersection Sight Distance
SSD	Sight Stopping Distance

STM	Strategic Travel Model
TfNSW	Transport for NSW
v/c	Volume over capacity
VPA	Voluntary Planning Agreement
vph	Vehicles per hour
WSC	Wollondilly Shire Council

1. Introduction

Parsons Brinckerhoff has been commissioned by Mount Gilead Pty Ltd and S & A Dzwonnik to undertake a traffic, transport and access study as part of the proposed Mount Gilead Rezoning project. The proposal is to enable 210 hectares of rural land at Mount Gilead to be developed as residential subdivision. The land is included under the NSW Government Metropolitan Development Program (MDP) as future urban. The MDP dwelling numbers listed is as 1,500 dwellings. The planning studies are investigating a range of 1,400–1,700 dwellings, with any number above the 1,500 MDP number to be justified on the basis of capacity of the site and infrastructure. This study has assumed the maximum number of 1,700 dwellings as a conservative base case for the generation of noise / air quality / traffic / economic and social impact.

1.1 Background

Two land owners (Mount Gilead Pty Ltd and the Dzwonnik Family) are preparing a joint rezoning application for the development of land in Mount Gilead. The planning proposal has achieved the Minister's Gateway Determination under the Metropolitan Development Plan.

Based on this determination, it is a requirement that a detailed traffic and transport assessment be undertaken with the scope confirmed and approved by Campbelltown City Council (CCC). In addition to this, Parsons Brinckerhoff has also consulted with the Roads and Maritime Services (RMS) with regards to scope and traffic modelling assumptions. RMS has approved the traffic modelling scope and growth rate assumptions utilised in this report. Parsons Brinckerhoff has also consulted with Transport for NSW (TfNSW) with regards to the traffic modelling approach, assumptions and the extent of the study area.

1.2 Study area

The proposed study area is shown in Figure 1.1. The study area has been determined in consultation with Campbelltown City Council (CCC), the RMS and TfNSW. The study area stretches from Appin Road at Appin to the south and the intersection of Narellan Road and Gilchrist Drive to the north. Appin Road is the key arterial road within the study area to be assessed as part of this study. The study includes some 13 existing intersections with the majority along Appin Road, and three proposed intersections along Appin Road with direct access to the development site.

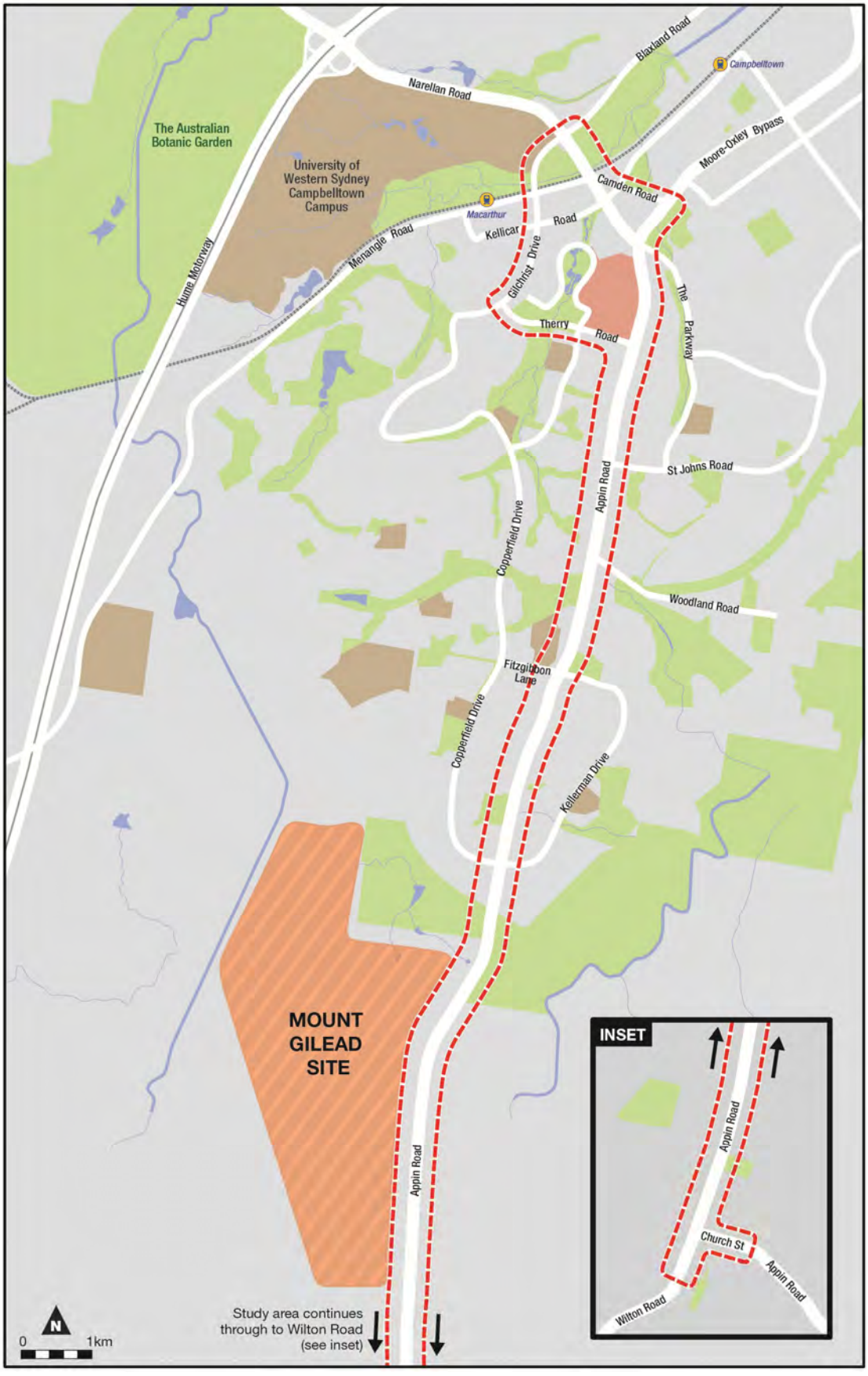


Figure 1.1 Study area

1.3 Report structure

The structure of this report is as follows:

- Chapter 2 discusses future strategic planning aims within the region
- Chapter 3 describes the existing situation within the study area
- Chapter 4 describes the proposed development
- Chapter 5 provides information on traffic surveys and captured intersection data captured
- Chapter 6 documents trip generation, trip distribution, dwelling densities and future yearly traffic growth rates
- Chapter 7 details intersection layouts, the performance of intersections using SIDRA modelling and mid-block capacity assessment
- Chapter 8 provides recommended study mitigation measures, suggested strategies and infrastructure upgrades
- Chapter 9 documents the stakeholder consultation undertaken as part of the study
- Chapter 10 provides a conclusion to the study.

1.4 Consultation

During the course of this study, Parsons Brinckerhoff worked in close collaboration with the following stakeholders:

- Campbelltown City Council (CCC)
- Roads and Maritime Service (RMS)
- Transport for NSW (TfNSW)
- Busways.

2. Future strategic planning

A review of relevant development control plans (DCPs) and future strategic planning documents has been completed as part of this study. Documents reviewed to inform future planning objectives are summarised in section 2.1.

2.1 Planning documents reviewed

2.1.1 Campbelltown 2025 Looking Forward

This is a long term town planning strategy for the City of Campbelltown prepared by Campbelltown City Council in 2004 and involved extensive community consultation and public input. This document responds to what Council understands people want the city to look, feel and function like, recognises future government policies and economic trends, and sets the foundation for future planning.

Some of the key focus areas with particular development emphasis include:

- identifying and overcoming barriers to public transport uptake
- developing alternative sustainable transport connections
- maximising accessibility to existing activity nodes
- identifying infrastructure requirements to satisfy population growth and development.

2.1.2 Campbelltown (Sustainable City) Development Control Plan 2012

Guidelines for car parking and access requirements for residential dwellings are included in this Development Control Plan (DCP). The objectives are to:

- provide adequate on-site car parking for residents and visitors that is convenient, secure and safe having regard to the traffic generated by the development
- ensure efficient and safe vehicle and pedestrian movement within, into and out of development
- ensure that the location and design of driveways, parking, service areas and access areas are practical, easily maintained, convenient, safe and suitably landscaped
- provide safe convenient access for vehicles, pedestrians and cyclists whilst minimising conflict between them.

2.1.3 Metropolitan Plan for Sydney 2036

The Metropolitan Plan establishes the boundaries for future urban development and identifies the strategic transport corridors and major centres best placed to focus sustainable commercial and residential growth in the future.

Through State Government support the Major Centre of Campbelltown – Macarthur future directions will include:

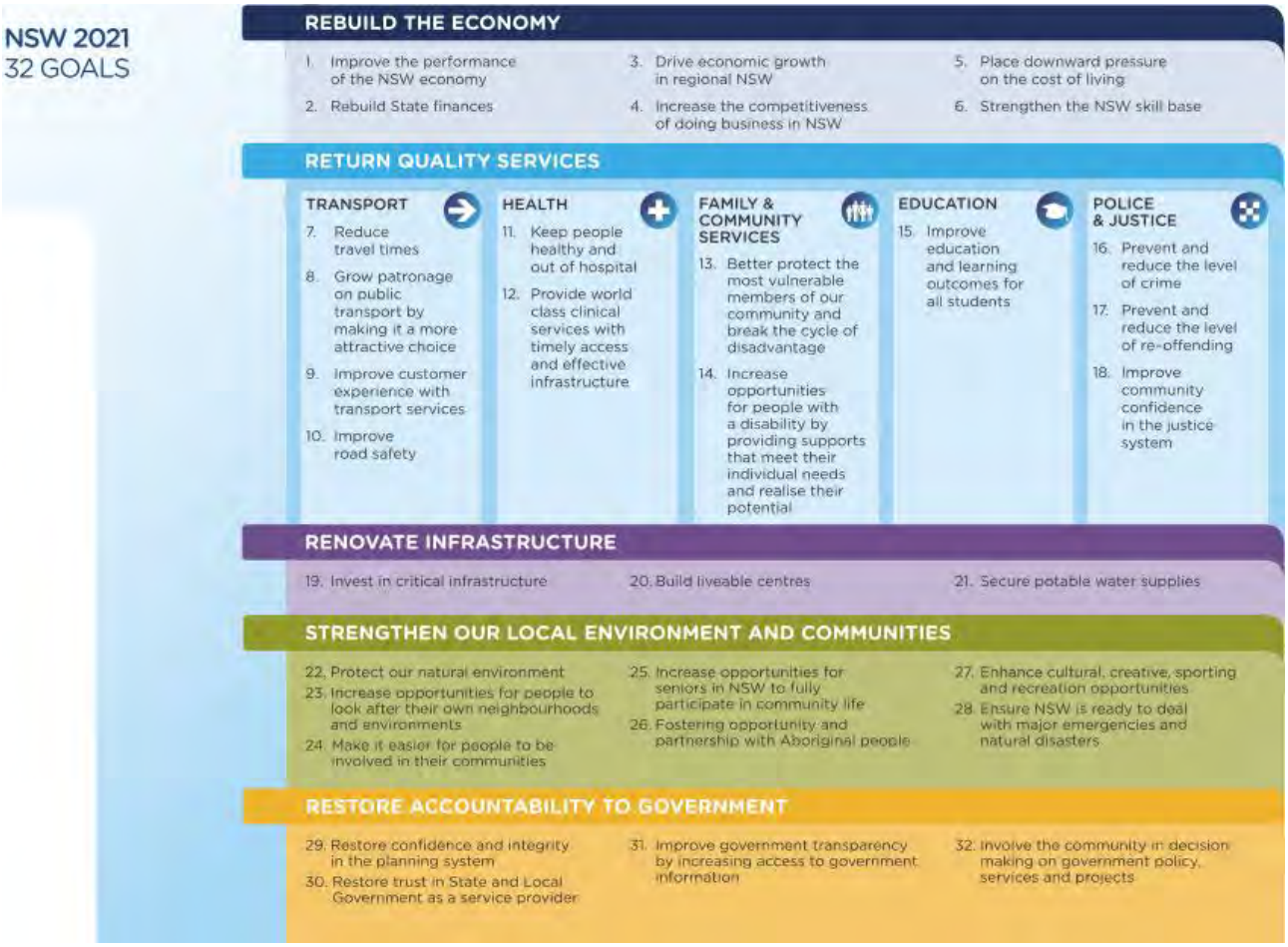
- promoting residential intensification where it does not preclude employment growth
- implementing commuter car parking program
- widening of the F5 Freeway between Liverpool and Campbelltown

- implementing bus corridors from Penrith to Campbelltown via Bringelly.

2.1.4 NSW 2021

NSW 2021 is a 10 year plan to rebuild the economy, provide quality services, renovate infrastructure, restore government accountability, and strengthen our local environment and communities. It replaces the State Plan and is based around five strategies to:

- rebuild the economy
- return quality services
- renovate infrastructure
- strengthen our local environment and communities
- restore accountability to government.



Source: NSW 2021, NSW Government

Figure 2.1 NSW 2021 Goals

2.1.5 NSW Government Long Term Transport Master Plan

The NSW Long Term Transport Master Plan will be the guiding transport planning and policy document to support the goals in *NSW 2021*. It will guide the prioritisation of available funds and integrates transport with the wider economic, infrastructure, social, housing and land use planning. The Master Plan will inform future detailed plans, such as modal plans and specific Regional Transport Plans.

3. Existing situation

The existing road network, traffic conditions, public transport services, pedestrian and cyclist facilities and crash data is discussed in this section.

3.1 Road network

The proposed development site is located adjacent to the State road network (Appin Road). The road network within the adjacent study area comprises of Appin Road (B69), Narellan Road (A9), Oxley Street and the Hume Motorway (M31). Figure 3.1 on the following page describes the surrounding road network including intersection controls.

Annual Average Daily Traffic (AADT) volumes have been sourced from the Roads and Maritime Services for the Sydney Region in 2005.

3.1.1 Appin Road

Appin Road (B69) is a State Road that carries approximately 21,500 vehicles daily south of Woodland Road, Bradbury. It has a posted speed limit varying between 70 km/h and 80 km/h between Appin and the Therry Road intersection in Campbelltown. The posted speed limit north of the Therry Road intersection changes to 60 km/h.

3.1.2 Narellan Road

Narellan Road (A9) is a State Road. It carries approximately 46,600 vehicles daily west of Gilchrist Drive, 37,400 vehicles west of the grade separated railway crossing and 19,935 vehicles south of Kellicar Road. It has a posted speed limit of 60 km/h between Appin Road and Gilchrist Drive. The posted speed limit north of Gilchrist Drive changes to 80 km/h.

3.1.3 Oxley Street (Moore-Oxley Bypass)

Oxley Street also known as the Moore-Oxley Bypass is a State Road. It carries approximately 30,500 vehicles daily south of Camden Road. It has a posted speed limit of 60 km/h between Narellan Road and Camden Road.

3.1.4 Hume Motorway

The Hume Motorway (M31) starts from the end of the M5 Motorway at the M7 Motorway interchange and continues south ending south of the Narellan Road interchange where it becomes the Hume Highway. It carries approximately 100,000 vehicles daily. It has a posted speed limit of 110 km/h.

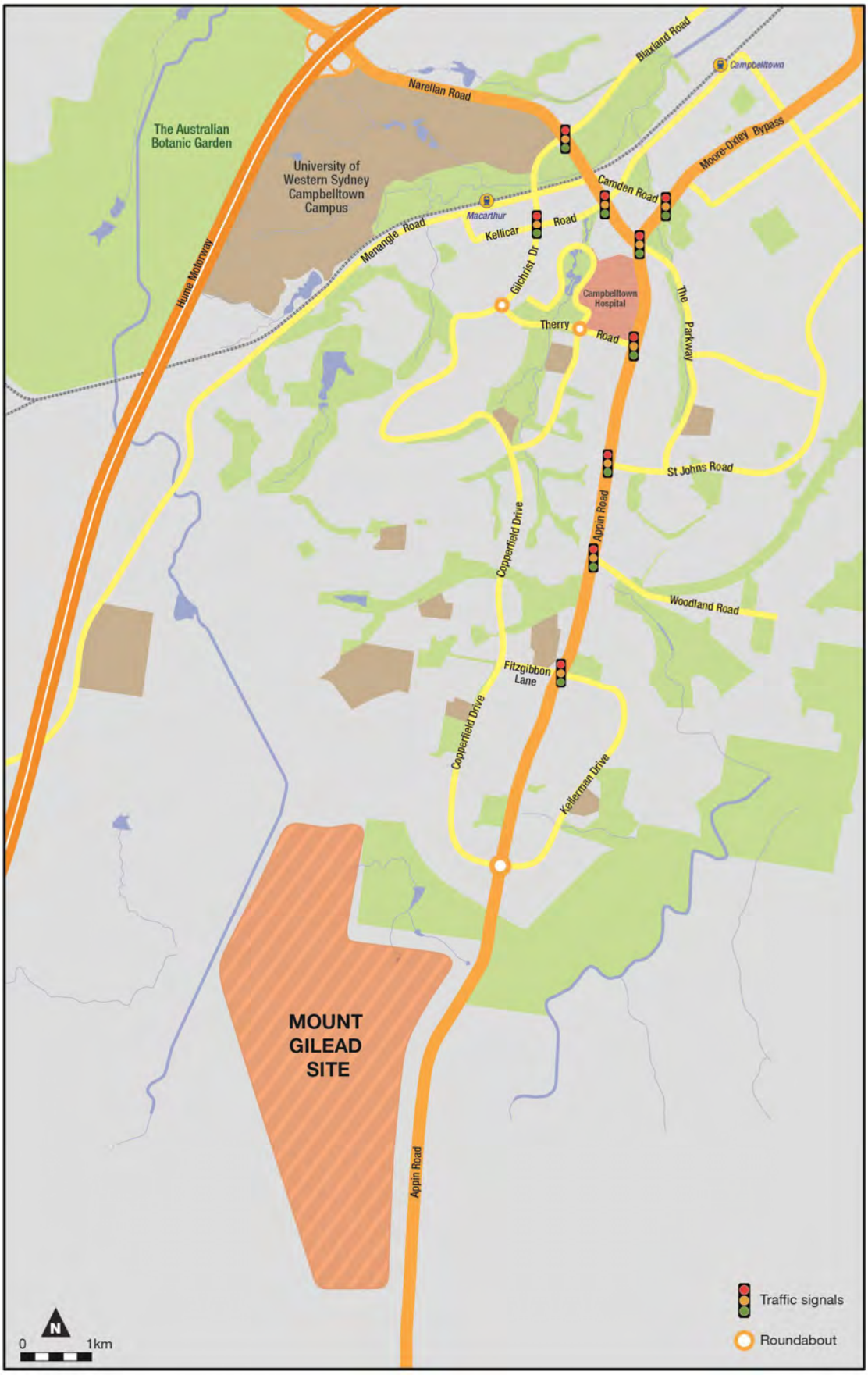


Figure 3.1 Road network in the study area

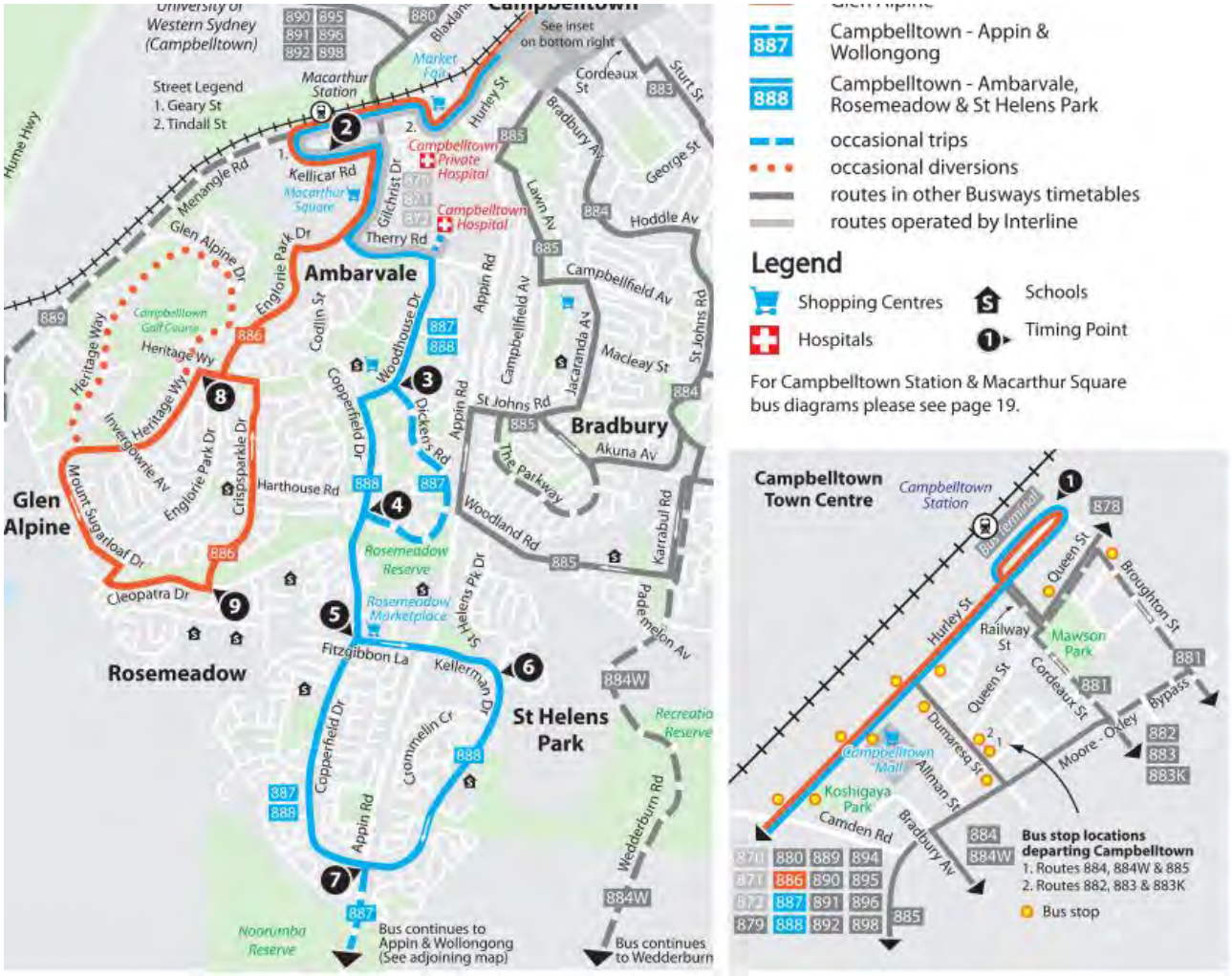
3.2 Public transport

Existing bus services that operate within the study area and in close proximity of the proposed development site are detailed in Table 3.1 and presented in Figure 3.2.

Table 3.1 Local bus services

Route no	Route	Frequency during peak periods	Operated by
887	Campbelltown – Appin & Wollongong	Every 30–60 minutes	Busways
888	Campbelltown – Ambarvale, Rosemeadow and St Helens Park	Every 15 minutes	Busways

Source: Busways



Source: Busways

Figure 3.2 Busways services within the study area

3.3 Pedestrians

There are no formalised pedestrian footpaths on Appin Road between its intersection with Church Street, Appin and Narellan Road, Campbelltown. Pedestrians are required to use gravel edges, grassy verges or the narrow road shoulder, however the volume of pedestrians is expected to be low along Appin Road.

Signalised pedestrian crossings are located at the following intersections within the study area:

- Appin Road, Kellerman Drive and Fitzgibbon Lane
- Appin Road and Woodland Road
- Appin Road and St Johns Road
- Appin Road and Therry Road
- Appin Road, Narellan Road, Oxley Street and The Parkway
- Oxley Street and Camden Road
- Narellan Road and Kellicar Road
- Narellan Road, Gilchrist Drive and Blaxland Road
- Gilchrist Drive and Kellicar Road.

3.4 Cyclists

Existing cycle facilities within the study area are detailed in Table 3.2.

Table 3.2 Cycle facilities and their locations

Cycle facility type	Cycle route location
On-road	Copperfield Drive between Appin Road and Englorie Park Drive
On-road	Appin Road between Woodland Road and Narellan Road
On-road	Narellan Road between Appin Road and Gilchrist Drive
On-road	The Parkway between Appin Road and St Johns Road
On road/off-road	Therry Road between Appin Road and Gilchrist Drive
Off road	Kellerman Drive between Appin Road and Crommelin Crescent
Off road	Kellicar Road between Narellan Road and Gilchrist Drive
Off road	Gilchrist Drive between Kellicar Road and Therry Drive

Source: www.bicycleinfo.nsw.gov.au

3.5 Journey to work (JTW) data

A review has been undertaken for the Campbelltown LGA of the most recent Journey to Work (JTW) data available (2011) from the NSW Bureau of Transport Statistics (BTS), to gain an understanding of the commuting patterns of existing residents. This data has been summarised in Table 3.3.

Table 3.3 2011 Journey to work data for the Campbelltown LGA

Resident trips to work	Mode used to travel to work								Total
	Car driver	Train	Car passenger	Mode not stated	Walk	Bus	Other mode	Ferry/Tram	
	70%	18%	6%	2%	2%	1%	1%	0%	100%

Source: BTS 2013

3.6 Crash data review

The findings from a review of crash data obtained from the RMS for the study area is discussed below. The crash data has been obtained for the following locations from 1 July 2007 to 30 June 2012:

- Appin Road between Appin Road (Church Street) and Narellan Road
- Narellan Road between Appin Road and Gilchrist Drive
- Oxley Street between Narellan Road and Camden Road.

It is noted that data is not available from 1 July 2012 to present. Having said this, it is known that two recent fatalities have occurred on Appin Road (in late 2012) which prompted a review of road safety on Appin Road in early 2013 by the RMS. To the best of our knowledge, this road safety review was still being undertaken. However, the review will include a re-assessment of speed limits and safety improvements along the length of Appin Road.

A review of crash data specifically on Appin Road in close proximity to the proposed development site indicates a total of 17 reported crashes in the five year period.

The crash data is summarised in Table 3.4 whilst full details are provided in Appendix A.

Table 3.4 Summary of the crash data for the period July 2007 to June 2012

Location	Total number of crashes	Crashes			Casualties		
		Fatal	Injury	Non casualty	Killed	Injured	Total
Appin Road between Church Street and Kellerman Drive	17	0 (0.0%)	12 (70.6%)	5 (29.4%)	0	20	20

Source: Roads and Maritime Services

Analysis of the types of crashes indicates:

- there were 17 crashes comprising 12 injury crashes resulting in injuries to 20 people. There were no fatal crashes recorded on this section of Appin Road for the latest validated five-year period
- rear-end crashes were the most common crash type crash type on Appin Road. 8 out of 17 (47.1%) crashes were reported as rear-end type crashes included left-rear and right-rear crash movements
- 5 out of 17 (29.4%) crashes were reported as off road and hit object crash types
- the majority of crashes occurred during fine weather conditions
- fatigue was reported as one of the significant contributing factors of the crashes for this route, accounting for 5 out of 17 (29.4%) crashes.

Figure 3.3 shows the number of crashes by crash type on Appin Road for the period July 2007 to June 2012.

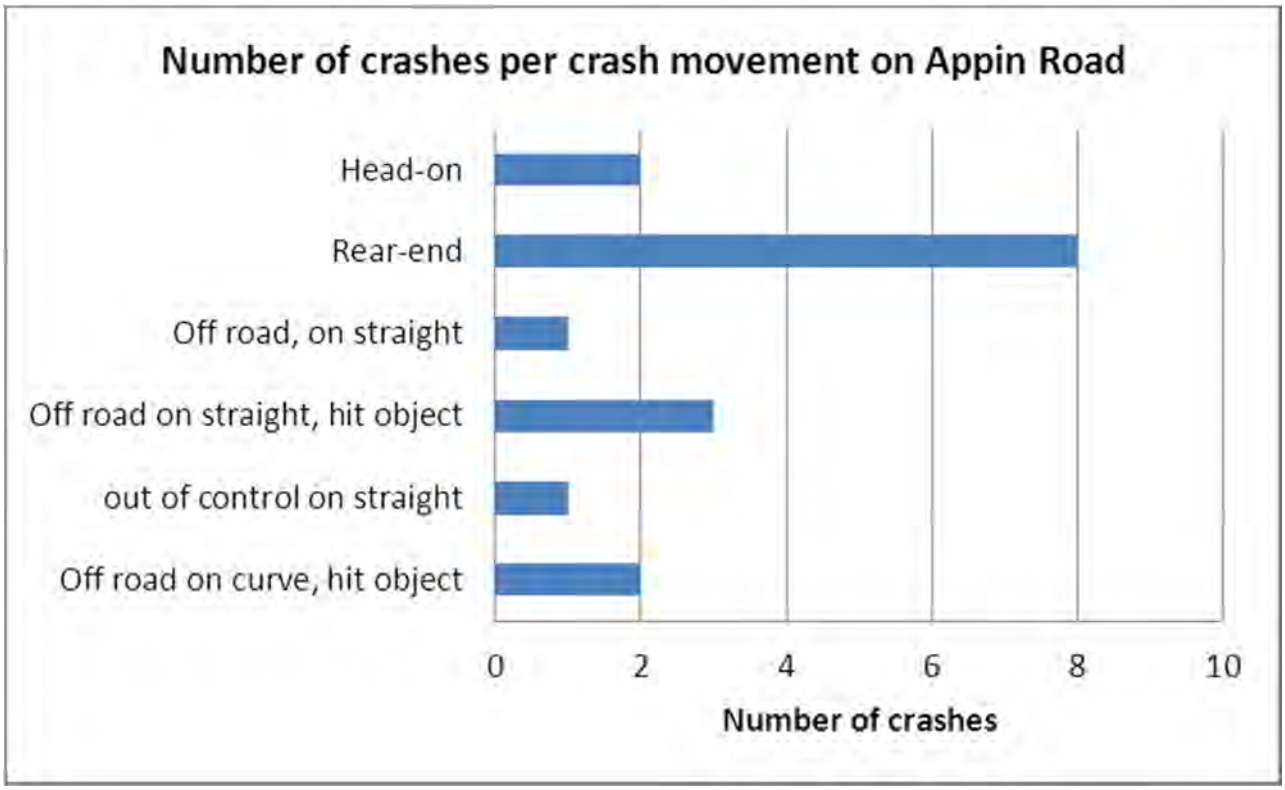


Figure 3.3 Appin Road crash movements

Figure 3.4 details the crash location patterns on the Appin Road in the vicinity of the proposed development site. Based upon the data it is evident that the majority of crashes recorded occur primarily at two locations. Both locations on Appin Road are tree-lined on both sides of the road with the majority of trees being located within the clear zone requirements of an 80 km/h speed zone.

Source: Roads and Maritime Services

Figure 3.4 Crash locations on Appin Road adjacent to the development site

4. Proposed development

The development proposes between 1,500 and 1,700 residential dwellings to be located within the Mount Gilead area, approximately 6 kilometres south of Campbelltown CBD. Mount Gilead is located directly to the south of Noorumba Reserve and the predominantly residential suburb of Rosemeadow. The existing parcel of land is a greenfields site with several water dams.

The site is bounded by:

- Appin Road to the east
- Noorumba Reserve to the north
- the Sydney Water Supply Canal to the west
- the Beulah Biobanking bushland to the south.

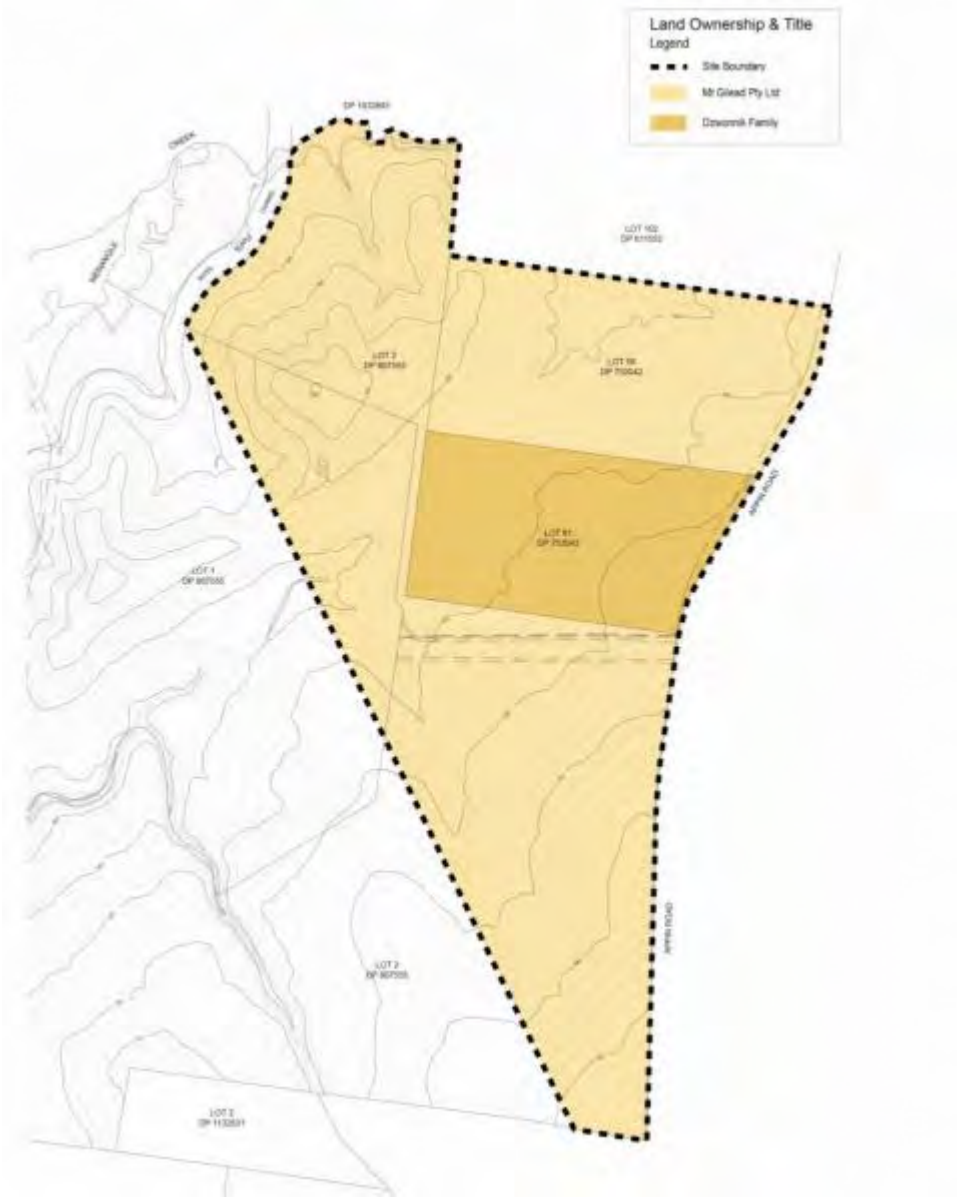
Existing driveway accesses are provided off Appin Road to the development site. Figure 4.1 presents the Mount Gilead development site location.

Source: Cox Richardson

Figure 4.1 Mount Gilead development site in the local context

4.1 Development location

The proposed development is shown in Figure 4.2 and Figure 4.3 in both map and aerial formats. Figure 4.2 shows the two different land owner land parcels. The entire site consists of four lots. Part Lots 1 and 2 in DP 807555 and Lot 59 752042 is owned by Mt Gilead Pty Ltd. Lot 61 in DP 752042 is owned by the Dzwonnik family.



Source: Cox Richardson

Figure 4.2 Development location map showing land ownership

Source: Cox Richardson

Figure 4.3 Development location aerial map entire site

4.2 Development access

Three access roads are proposed to connect the development site with Appin Road. These three intersections would be located at suitable distances from one another (ideally 300 to 400 metres apart). Three roundabout intersections are proposed to connect the development site with Appin Road.

4.2.1 External road network connection

Parsons Brinckerhoff has liaised with both the RMS and TfNSW with respect to development access onto Appin Road. It was agreed that three accesses would be provided from Appin Road to the development. Two of these accesses would be roundabout controlled intersections with the third developed as a roundabout or a T-intersection with restricted movements. Three roundabout intersections have been assessed for this report.

4.2.2 Sight distance requirements on Appin Road

According to the Austroads *Guide to Road Design – Part 4A: Unsignalised and Signalised Intersections,* Approach Sight Distance (ASD) for vehicles at intersections is the minimum level of sight distance which must be available on the minor road approaches to all intersections to ensure that drivers are aware of the presence of an intersection.

Safe Intersection Sight Distance (SISD) is the minimum distance which should be provided on the major road at any intersection.

According to Austroads *Guide to Road Design – Part 3: Geometric Design,* Stopping Sight Distance (SSD) is the distance to alert a driver, travelling at the design speed on wet pavement, to perceive, react and brake to a stop before reaching a hazard on the road ahead.

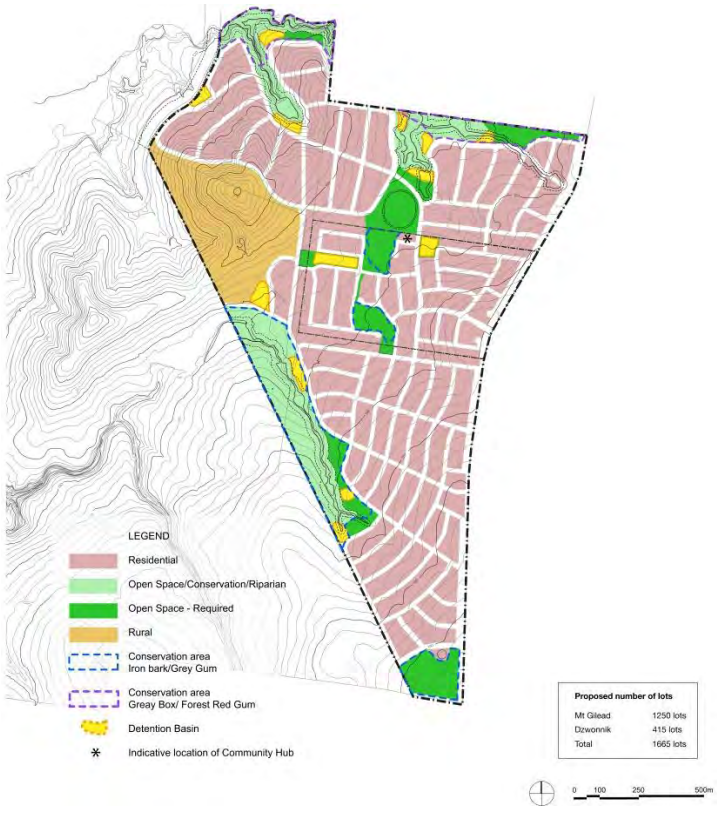
The ASD, SISD and SSD were assessed for all development access options for proposed intersections on Appin Road. Sight distance requirements for vehicles at intersections are provided in Appendix B.

The ASD required for an 80 km/h design speed is 103 m and the SISD is 170 m. This is based on a driver reaction time of 1.5 s (for design speed of less than 90 km/h) and assumes level road grades. The SSD for intersection sight distance with minimum reaction time of 2.0 s is 141 m for a road of level grade.

The location of all three intersections will comply with these minimum sight distance requirements.

4.2.3 Proposed internal road network

The proposed internal road network for the development site is shown in Figure 4.4.

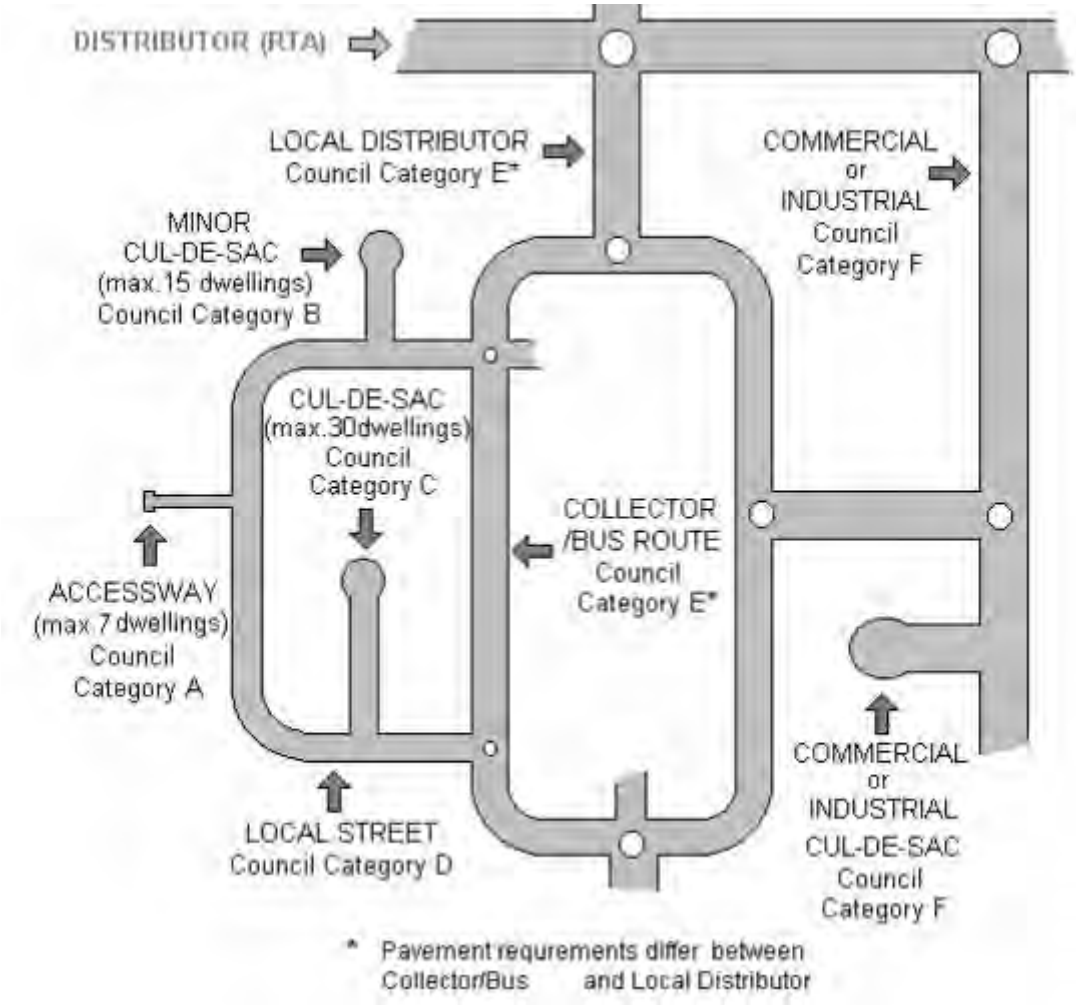


Source: Cox Richardson

Figure 4.4 Proposed internal road network layout of the development site

4.3 Road hierarchy

Campbelltown City Council's road hierarchy is presented in Figure 4.5 and describes the differentiation between a local distributor, local connector and local street. This road hierarchy will be referenced in preparation of the developments internal road network layout.



Source: Campbelltown City Council (Sustainable City) Development Control Plan 2012

Figure 4.5 Campbelltown Council road hierarchy

4.3.1 Road cross sections

Descriptions of the road cross sections and facility for the various road types within the road hierarchy are explained below:

- Local distributor – maximum speed limit of 60 km/h, 18 m road reservation, 11 m carriageway width and provides for foot path/cycle path and bus servicing
- Collector/Bus route – maximum speed limit of 60 km/h, 18 m road reservation, 11 m carriageway width and provides for foot path/cycle path and bus servicing
- Local street – maximum speed limit of 50 km/h, 15 m road reservation, 8 m carriageway width and provides for foot path/cycle path
- Cul-de-sac – maximum speed limit of 40 km/h, 15 m road reservation and 8 m carriageway width.

4.4 Parking provision

Parking provision for residential dwellings will be based on Campbelltown City Council DCP guidelines which allow one to two spaces per dwelling.

4.5 Public transport

Given the size of this proposed residential development, bus servicing similar to that of the suburbs of Rosemeadow and St Helens Park is envisaged. Consultation with the local bus operator Busways has been undertaken, with preliminary discussion notes included in section 9 as part of the stakeholder consultation process.

4.6 Pedestrians

Based on Council's DCP, the minimum requirements for pedestrian paths are as follows:

- at least one side of the road for collector roads
- in accordance with the DCP for local roads
- not required on cul-de-sacs and accessways.

4.7 Cyclists

Cycle lanes, mixed traffic lanes or shared paths are to be considered in the design for the higher level roads within the road hierarchy including the local distributor, collector and local streets.

4.8 Waste collection

Cul-de-sacs and local access ways as per Council's road hierarchy are to be designed to accommodate waste collection vehicles. As a consequence suitable turnaround facilities at the end of cul-de-sacs or hammerhead ends will need to be provided on these lower level roads.

4.9 Emergency vehicles

The internal road network is to be designed to accommodate for the largest design emergency vehicle. This is expected to be a fire truck (semi-trailer of 19 m length). Roads are to be designed not to impede with emergency vehicle thoroughfare.

5. Traffic surveys, intersection data and site observations

This section discusses the intersection traffic count data, traffic signal phasing and cycle times.

5.1 Intersection traffic surveys

Traffic surveys were undertaken for a weekday AM and PM peak period on Tuesday 5 February 2013 at the following key intersections:

- Appin Road/Church Street, Appin (I-01)
- Appin Road/Copperfield Drive/Kellerman Drive, Rosemeadow (I-02)
- Appin Road/Fitzgibbon Lane/Kellerman Drive, Rosemeadow (I-03)
- Appin Road/Woodland Road, St Helens Park (I-04)
- Appin Road/St Johns Road, Bradbury (I-05)
- Appin Road/Therry Road, Ambarvale (I-06)
- Appin Road/Narellan Road/Oxley Street/The Parkway, Campbelltown (I-07)
- Narellan Road/Kellicar Road, Campbelltown (I-08)
- Narellan Road/Gilchrist Drive/Blaxland Road, Campbelltown (I-09)
- Oxley Street/Camden Road, Campbelltown (I-10)
- Therry Road/Central Road/Woodhouse Drive, Ambarvale (I-11)
- Therry Road/Gilchrist Drive, Ambarvale (I-12)
- Gilchrist Drive/Kellicar Road, Ambarvale (I-13).

The AM peak period surveys were conducted from 6.00 am to 10.00 am, and the PM peak period from 3.00 pm to 7.00 pm. Data retrieved from the surveys indicate that the weekday AM peak hour generally occurs between 8.00 am and 9.00 am and the PM peak hour between 4.30 pm and 5.30 pm.

Figures 5.1 and 5.2 show the intersection turning movement volumes in vehicles per hour (vph) during the analysed peak AM and PM periods, respectively. These are regarded as the existing base volumes for the assessment of the existing conditions.

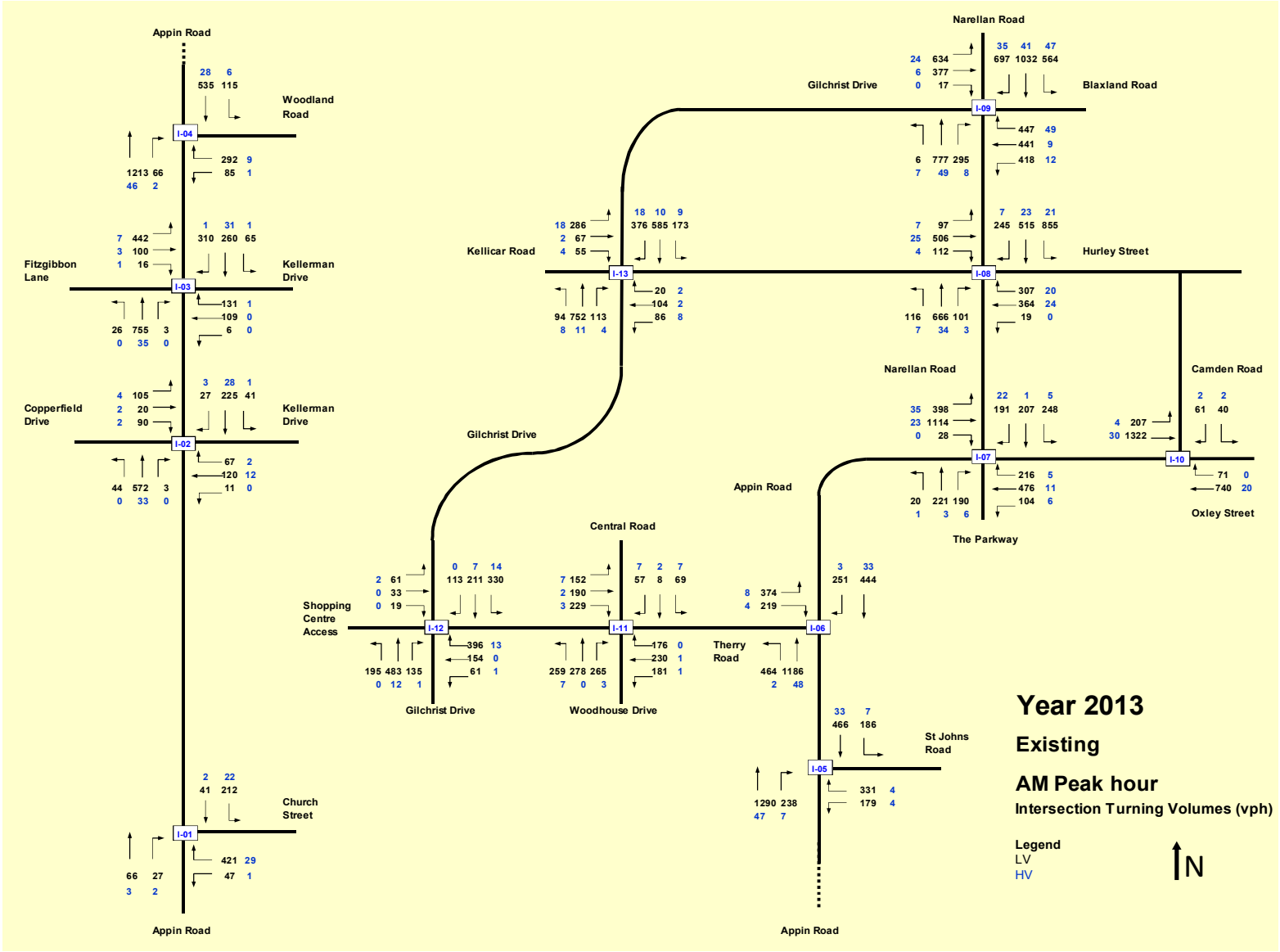


Figure 5.1 Existing AM peak hour intersection turning volumes – Year 2013

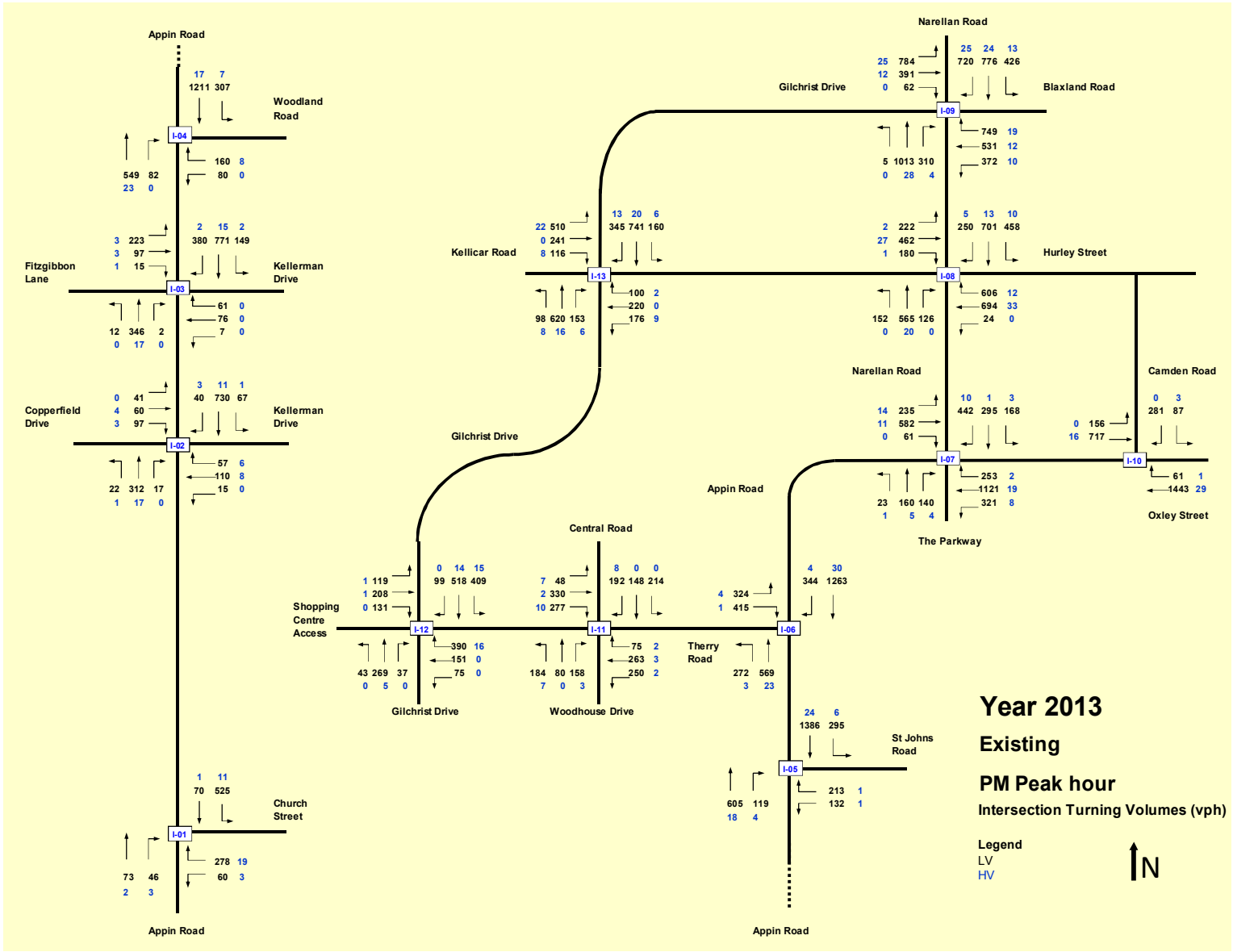


Figure 5.2 Existing PM peak hour intersection turning volumes – Year 2013

5.2 IDM and SCATS intersection data

Intersection data including intersection diagnostic monitor (IDM) and Sydney Coordinated Adaptive Traffic Signal (SCATS) data was obtained from RMS for all signalised intersections within the study area. This was done to determine traffic signal phasing and cycle times for the weekday AM and PM peak periods. The signal phasing and cycle time data was utilised in the SIDRA intersection modelling.

6. Trip generation, distribution and future year traffic growth

This section discusses the development densities, trip generation, trip distribution, future traffic growth and traffic volumes for various future assessment scenarios.

6.1 Dwelling densities assessed

Development densities of 1,500 and 1,700 dwellings have been assessed in the traffic modelling. These dwelling densities proposed are proposed for the ultimate stage of development in 2026. One interim stage of development in 2021 has also been assessed assuming that 50% of 1,700 dwellings (850 dwellings) are built.

6.2 Trip generation

The trip generation for the proposed development is based on the RMS *Guide to Traffic Generating Developments* and is presented in Table 6.1.

Table 6.1 Trip generation rates (peak hourly)

Land use	Yield	Trip generation rate (peak hour)	External trip %	Generated external trips (veh)
Residential dwellings	1,700	0.85 trips per dwelling	95%	1,373
	1,500			1,211

Source: RMS Guide to Traffic Generating Developments (2002)

6.3 Trip distribution

The trip distribution of the proposed development has been assigned based on JTW data provided by TfNSW for the Rosemeadow Travel Zone. The generated traffic volumes were distributed in the following ways:

- distribution of traffic to access points (development intersections with Appin Road)
- distribution by origin and destination (utilising JTW data)
- distribution by trip purpose (directional split) based on the land use type.

6.3.1 Distribution to access points

As stated in section 4, three new intersections along Appin Road are proposed to provide access to the Mount Gilead site.

The number of dwellings accessed by each intersection with 1,500 dwellings is as follows:

- 29% of dwelling trips (430 dwellings) would use the northern access (I-0A)
- 17% of dwelling trips (250 dwellings) would use the central access (I-0B)

- 54% of dwelling trips (820 dwellings) would use the southern access (I-0C).

The number of dwellings accessed by each intersection with 1,700 dwellings is as follows:

- 25% of dwelling trips (430 dwellings) would use the northern access (I-0A)
- 27% of dwelling trips (450 dwellings) would use the central access (I-0B)
- 48% of dwelling trips (820 dwellings) would use the southern access (I-0C).

6.3.2 Distribution by origin-destination

JTW data provided by TfNSW suggests that 95% of all traffic generated by the Mount Gilead development site would have an origin-destination to the north and 5% would have an origin-destination to the south. As such, during the modelled AM peak hour, 95% of outbound trips were assigned to turn left and travel north on Appin Road and 5% were assigned to turn right and travel south. During the modelled PM period, 95% of the inbound trips would be from the north and would turn right into the development site and 5% would travel from the south and would turn left into the development site.

This was basis for the traffic distribution by origin-destination. Figure 6.1 shows the traffic flow distributions at the intersections assessed.

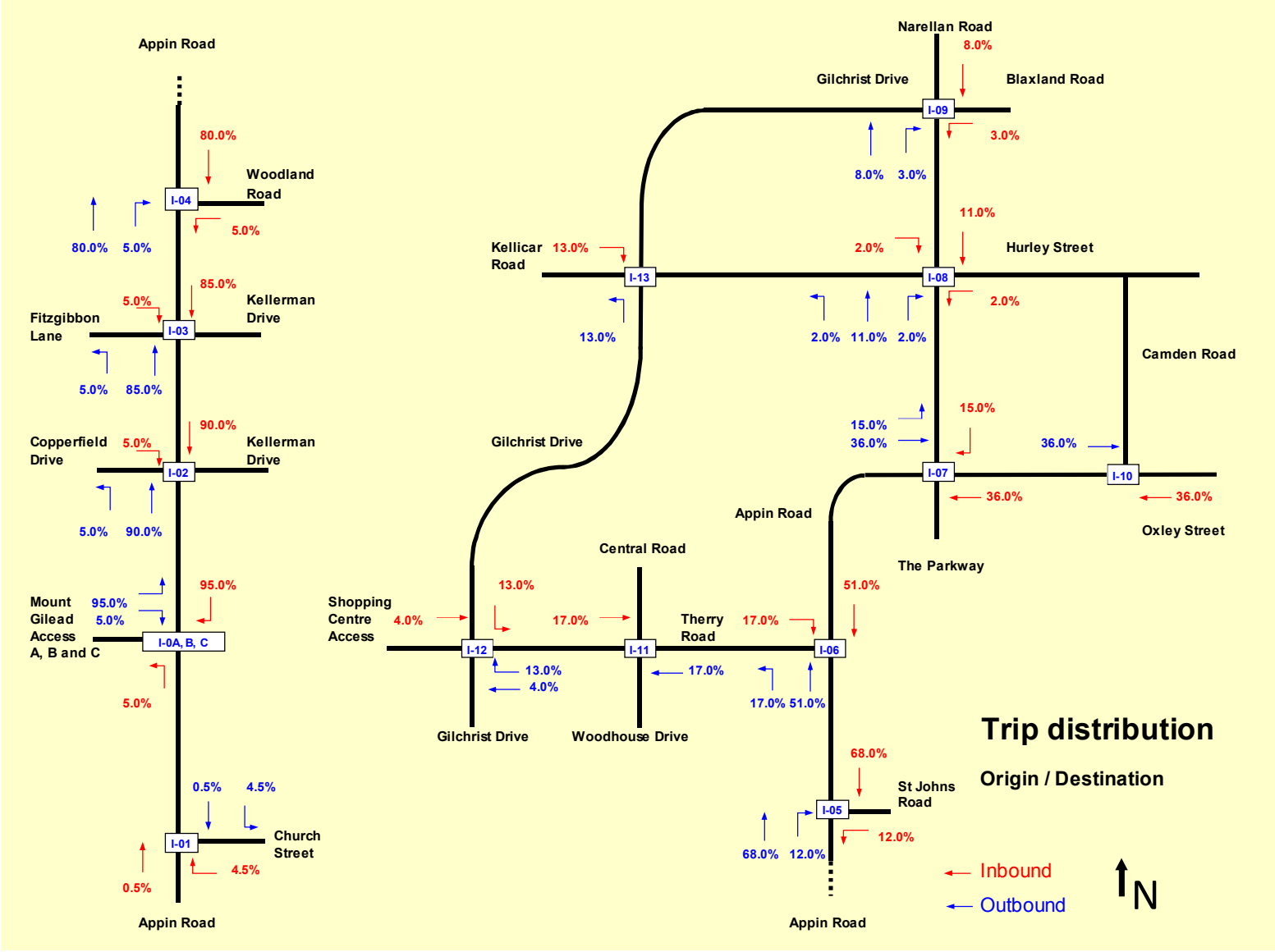


Figure 6.1 Trip distribution during the weekday AM and PM peak

6.3.3 Distribution by directional split

It has been assumed that during the modelled AM peak, 80% of the generated traffic would be outbound from the Mount Gilead development site and 20% would be inbound. During the modelled PM peak, the reverse was applied (i.e. 80% of generated traffic would be inbound and 20% would be outbound).

Table 6.2 summarises the directional split for the residential dwellings within the Mount Gilead development site.

Table 6.2 Directional split

Land use	Trips Inbound/Outbound	
	AM peak	PM peak
Residential dwellings	20% In/80% Out	80% In/20% Out

6.4 Cumulative development

Parsons Brinckerhoff has reviewed future approved large scale developments within the study area within the Campbelltown LGA. This review was undertaken by viewing the Major Project Assessment page of the NSW Department of Planning & Infrastructure (DoP&I) website. This search indicates that no new large scale development is proposed within the study area which is likely to have cumulative traffic impacts on the surrounding road network in addition to the Mount Gilead proposed development.

Having said this, construction has recently started on the Appin Valley residential development. This development proposes 336 lots located on Appin Road in Appin and has been considered as part of this assessment. Traffic generated by this development on Appin Road to and from Campbelltown has been encapsulated into future background traffic growth assumptions as supplied by RMS.

6.5 Regional traffic growth

In order to determine the future traffic growth rates, the historical rates of traffic growth on the surrounding road network were considered. Annual average daily traffic (AADT) data was available for 1996 to 2005 (from RMS count stations) for key roads in the vicinity of the proposed development. Table 6.3 summarises the AADT at several RMS counting stations.

Table 6.3 Historical traffic flows on selected roads in the study area

Station no.	Location	1996	1999	2002	2005	Growth (%)	
						9 year period	3 year period
84.008	Appin Road, south of Woodland Road, Bradbury	18,201	21,757	20,885	21,484	2.00%	0.96%
83.020	Narellan Road, west of Gilchrist Drive, Campbelltown	36,899	46,632	50,387	46,613	2.93%	-2.50%
83.023	Narellan Road, south of Kellicar Road, Campbelltown	15,416	21,794	19,914	19,935	3.26%	0.04%
83.013	Moore-Oxley Bypass, south of Camden Road, Campbelltown	26,648	28,923	27,617	30,561	1.63%	3.55%

Source: RMS Traffic Volume Data for Sydney Region (2005)

These count stations recorded increases and decreases in traffic volumes between 1996 and 2005. More recent AADT was not available. It is difficult to ascertain yearly traffic growth rates based on AADT to present day as they are not found to be conclusive. For this reason, traffic growth rates from the Sydney Strategic Travel Model (STM) EMME/2 Model have been provided from the RMS and are discussed in section 6.6.

6.6 Appin Road yearly traffic growth rates

For the purpose of this study, and in consultation with RMS, traffic growth rates have been obtained by extrapolating changes in traffic volume growth from the Sydney STM EMME/2 Model for Appin Road and the general study area. Linear traffic growth between the 2011, 2016 and 2026 models has been analysed. The following linear traffic growth rates have been applied to this assessment with RMS agreement to estimate future background traffic volumes on the road network within the study area:

- between 2011 and 2016
  - 3.56% yearly growth for northbound traffic and 2.53% yearly growth for southbound traffic in the AM peak
  - 4.42% yearly growth for northbound traffic and 3.62% yearly growth for southbound traffic in the PM peak
- between 2016 and 2026
  - 1.24% yearly growth for northbound traffic and 2.65% yearly growth for southbound traffic in the AM peak
  - 2.19% yearly growth for northbound traffic and 1.23% yearly growth for southbound traffic in the PM peak.

The following linear traffic growth have been estimated and applied to side roads within the study area:

- between 2011 and 2016
  - 2% yearly growth
- between 2016 and 2026
  - 1% yearly growth.

6.7 Future year intersection volumes

Future year intersection volumes are presented in section 6.7.1 to 6.7.4.

6.7.1 Future do-nothing scenario (2021)

Figure 6.2 and Figure 6.3 shows the intersection turning movement volumes in vehicles per hour (vph) for the future year of 2021 without development for AM and PM peak hours, respectively.

6.7.2 Future with development scenario – interim (2021)

Figure 6.4 and Figure 6.5 shows the intersection turning movement volumes in vehicles per hour (vph) for the future year of 2021 with development for AM and PM peak hours with 95% external trip generation, respectively. This assumes that 50% of the development is constructed based on the highest dwelling density (850 dwellings).

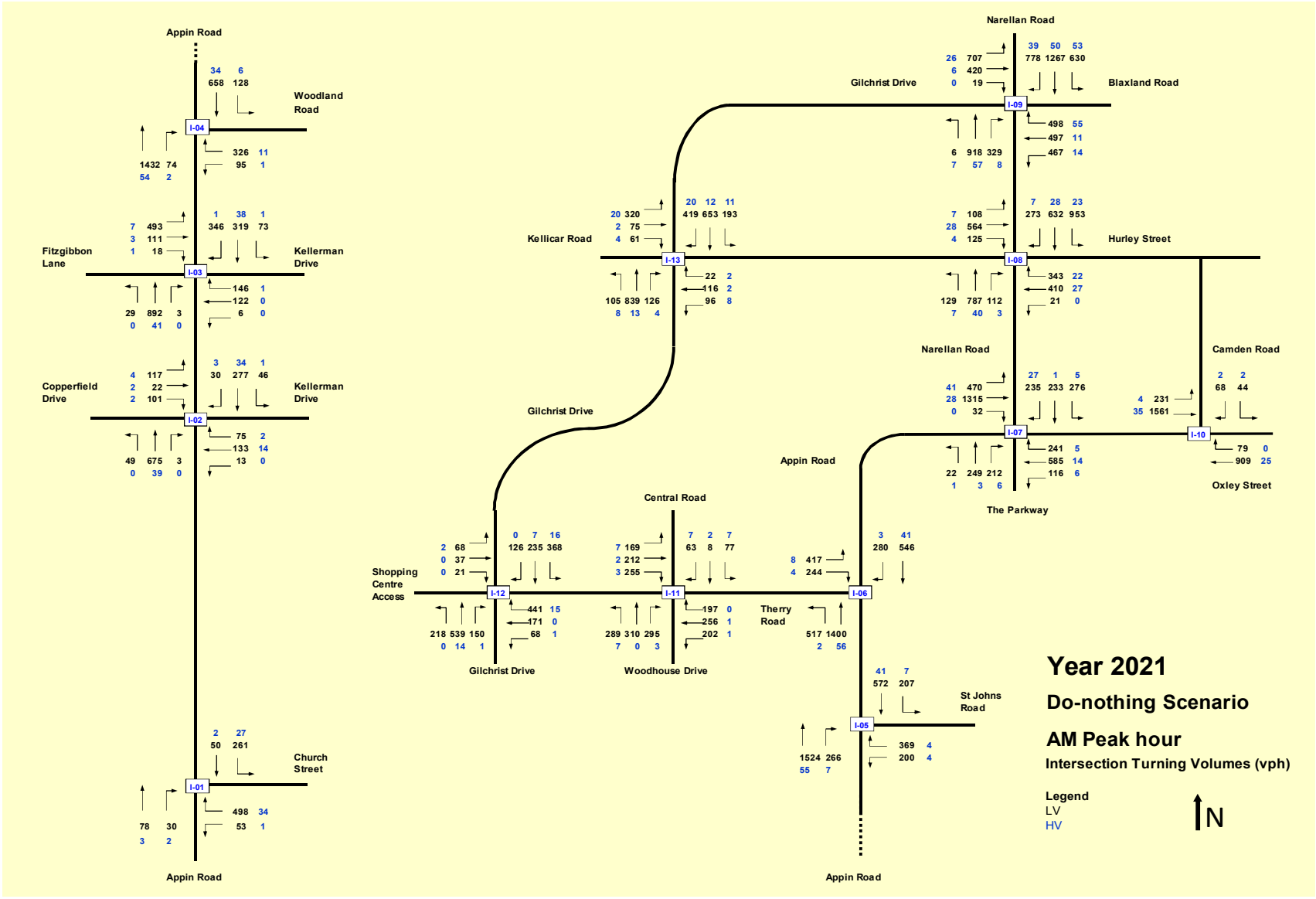


Figure 6.2 Future AM peak hour intersection turning volumes – Year 2021 do-nothing scenario

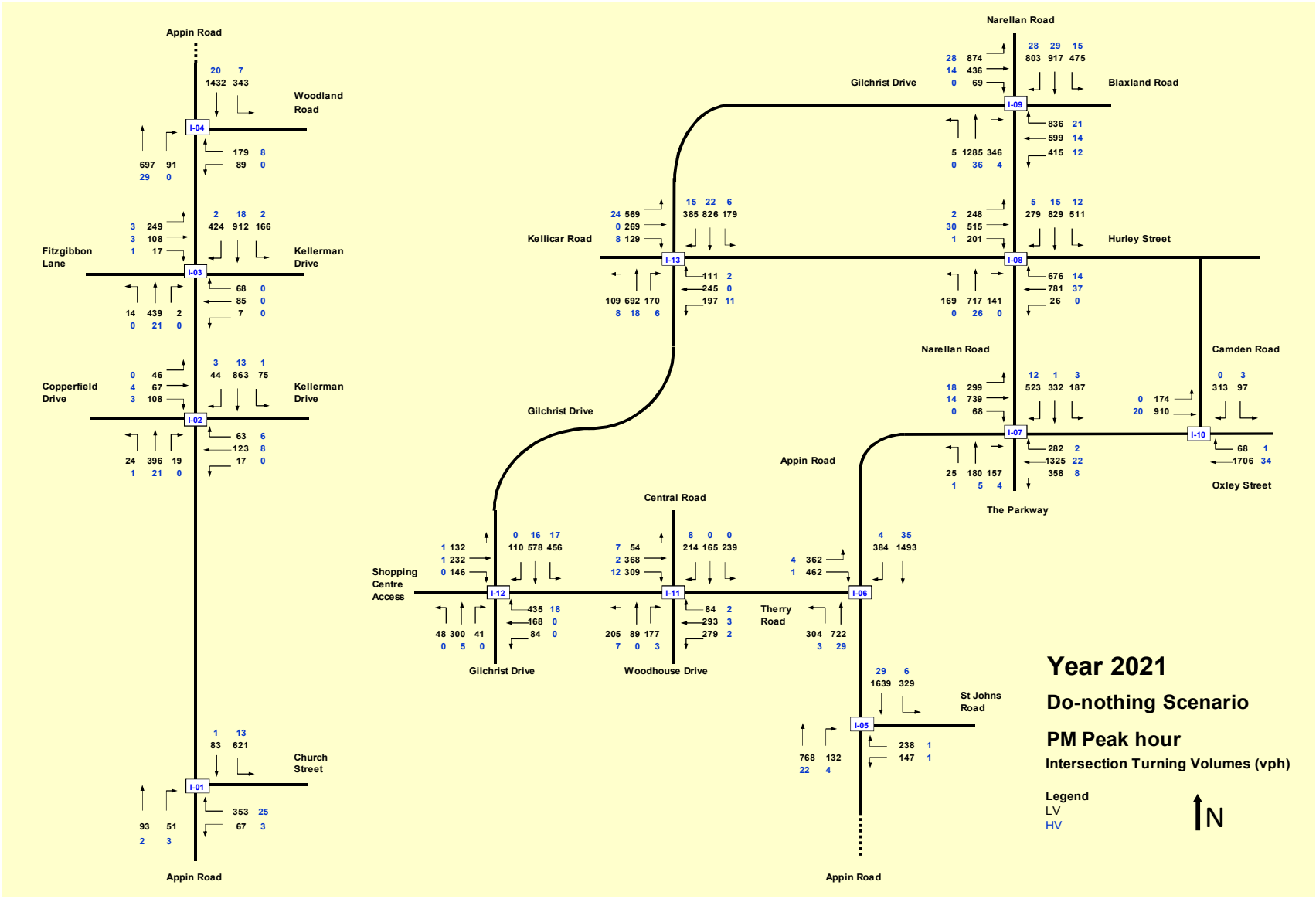


Figure 6.3 Future PM peak hour intersection turning volumes – Year 2021 do-nothing scenario

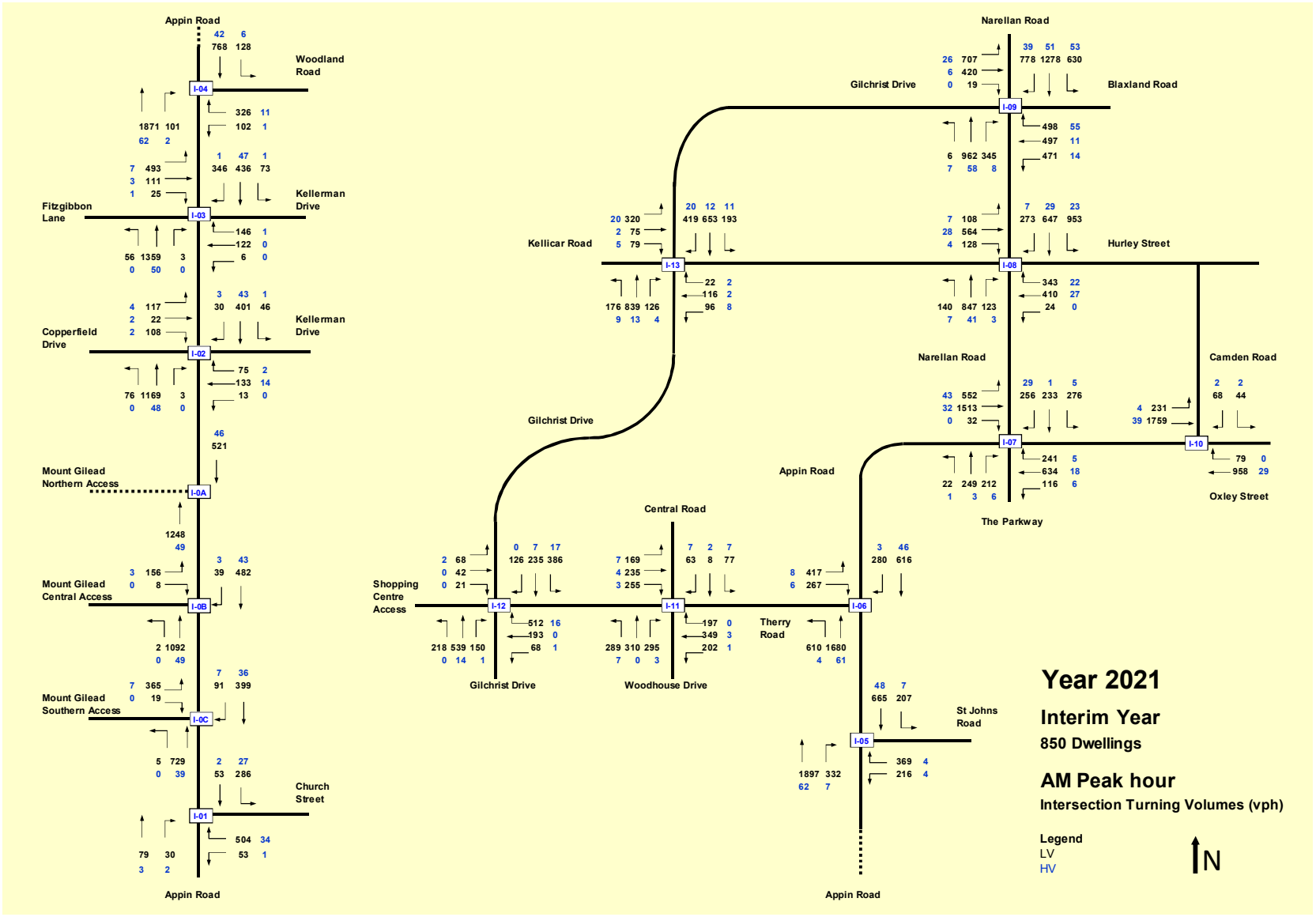


Figure 6.4 Future AM peak hour intersection turning volumes – Year 2021 with interim development (850 dwellings with 95% external trips)

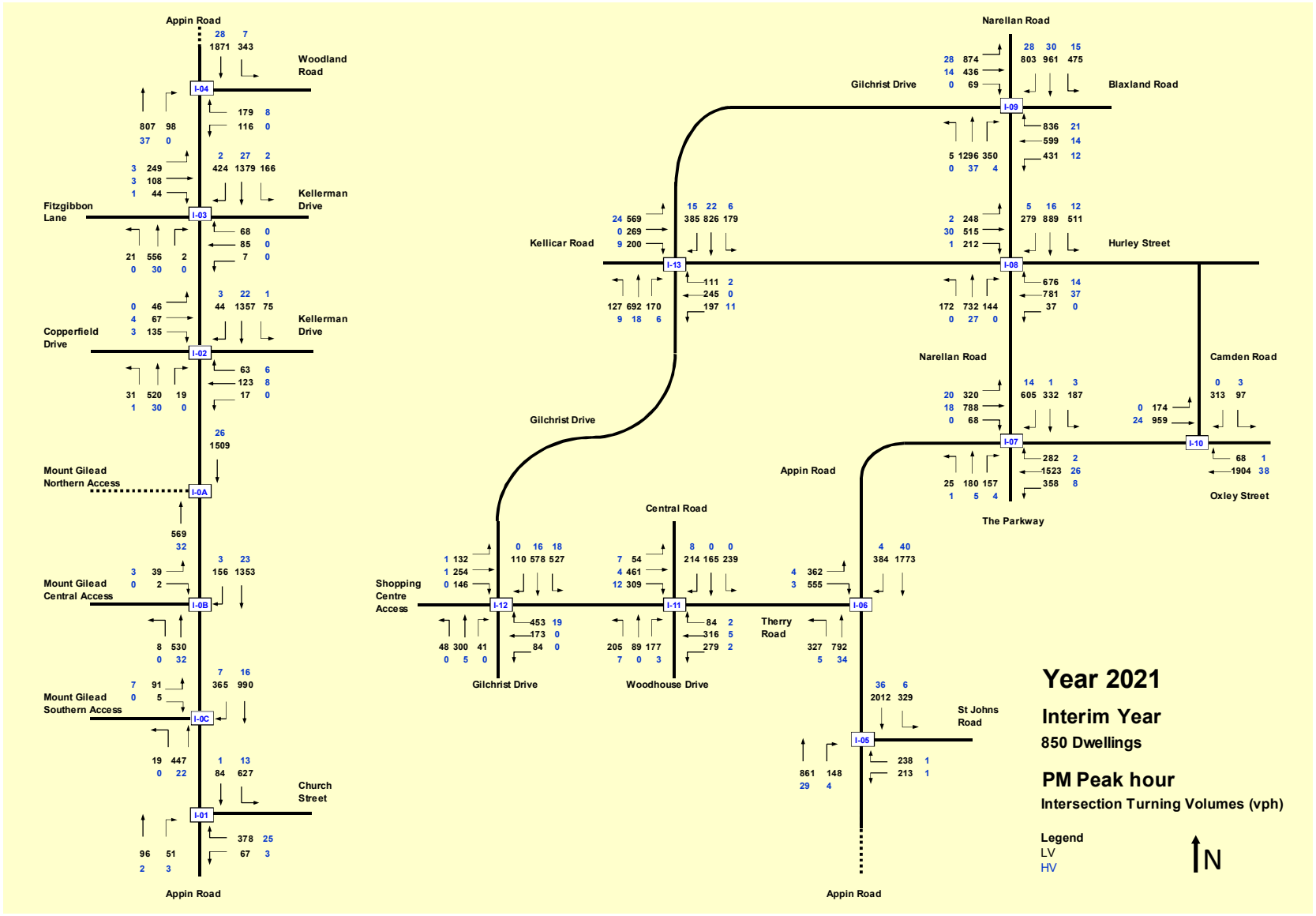


Figure 6.5 Future PM peak hour intersection turning volumes – Year 2021 with interim development (850 dwellings with 95% external trips)

6.7.3 Future do-nothing scenario (2026)

Figure 6.6 and Figure 6.7 shows the intersection turning movement volumes in vehicles per hour (vph) for the future year of 2026 without development for AM and PM peak hours, respectively.

6.7.4 Future with development scenario – ultimate (2026)

Figures 6.8 to 6.11 depict the intersection turning movement volumes in vehicles per hour (vph) for the future year of 2026 with development for AM and PM peak hours, respectively. This assumes that 100% of the development is constructed based on two dwelling densities of 1,500 and 1,700.

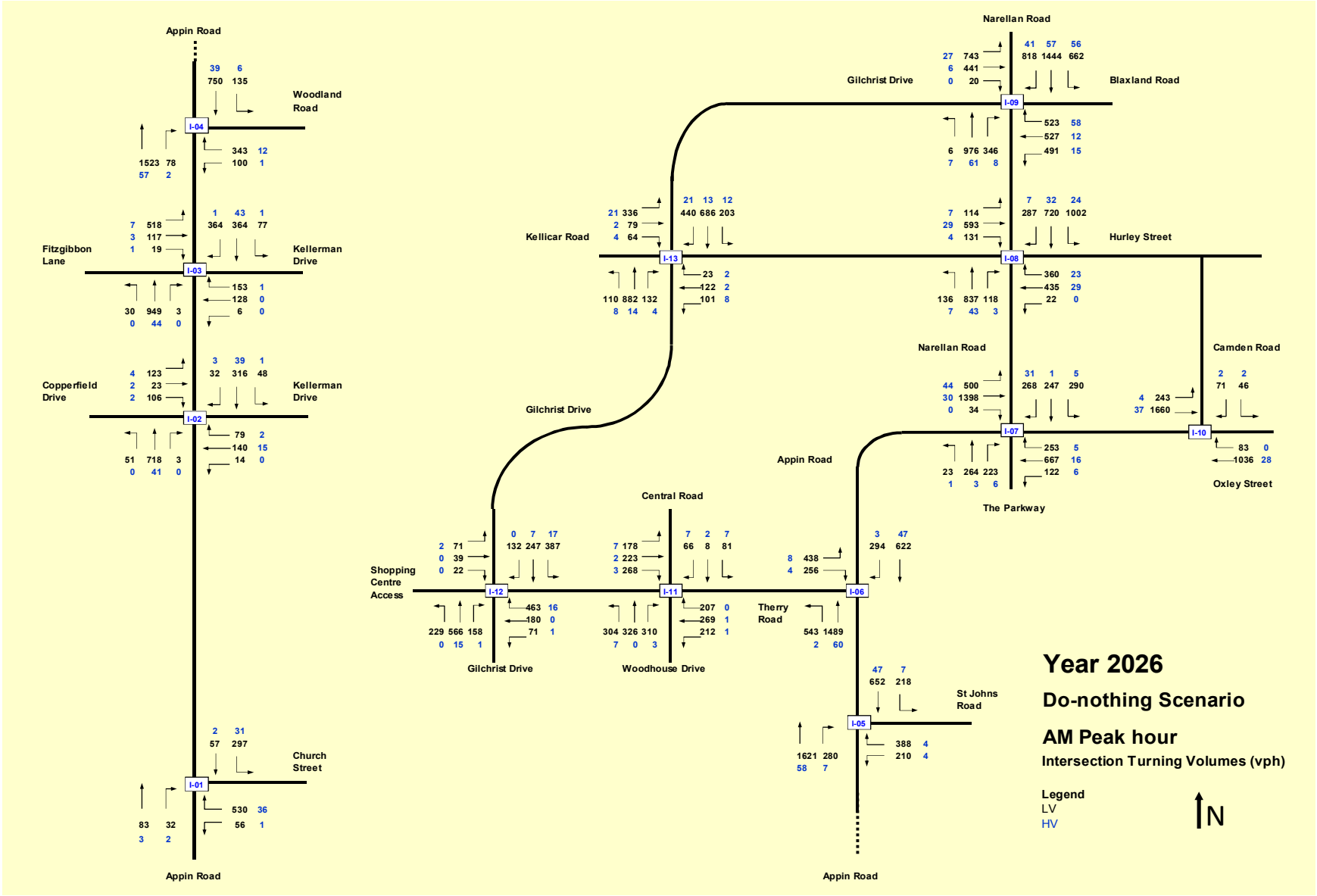


Figure 6.6 Future AM peak hour intersection turning volumes – Year 2026 do-nothing scenario

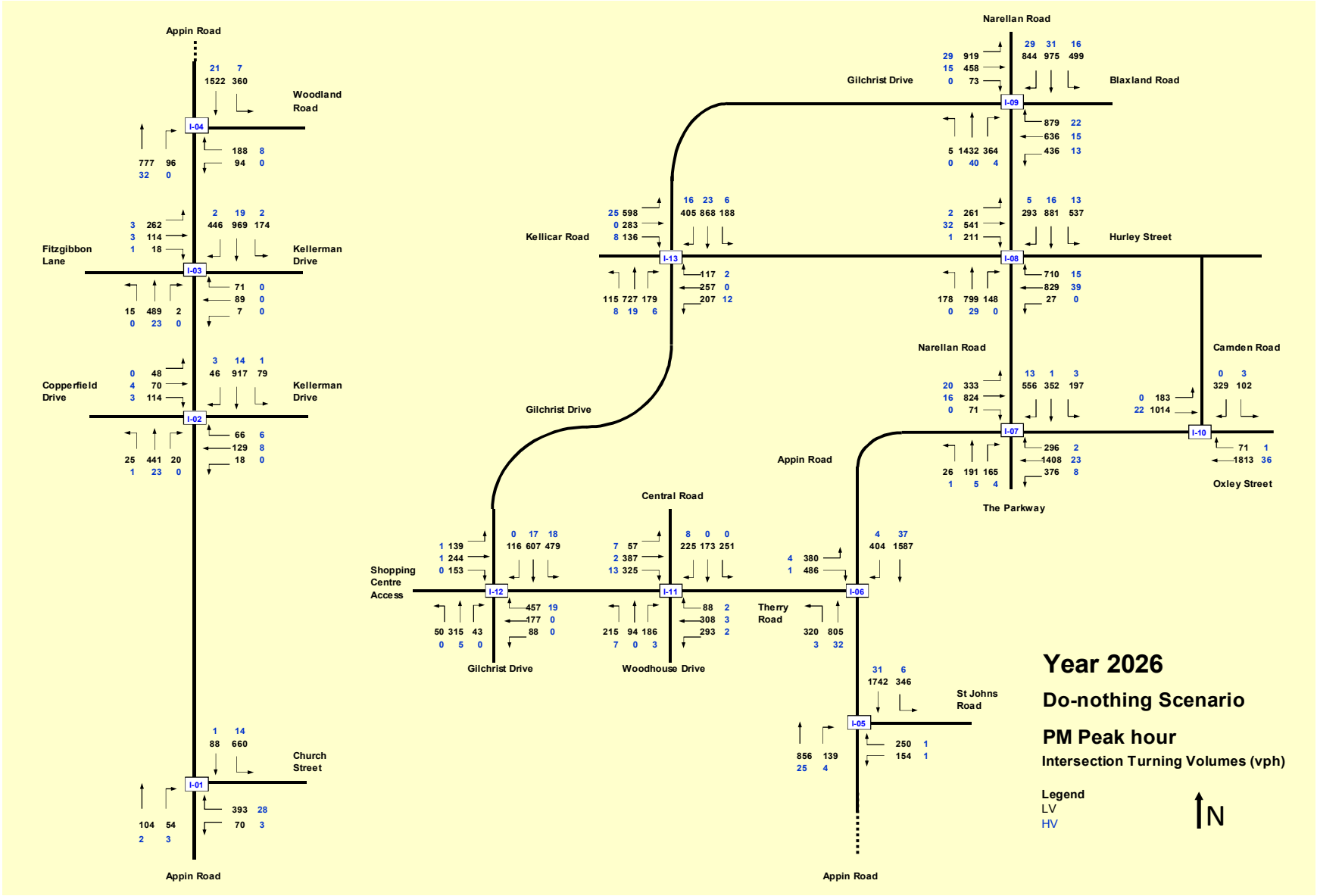


Figure 6.7 Future PM peak hour intersection turning volumes – Year 2026 do-nothing scenario

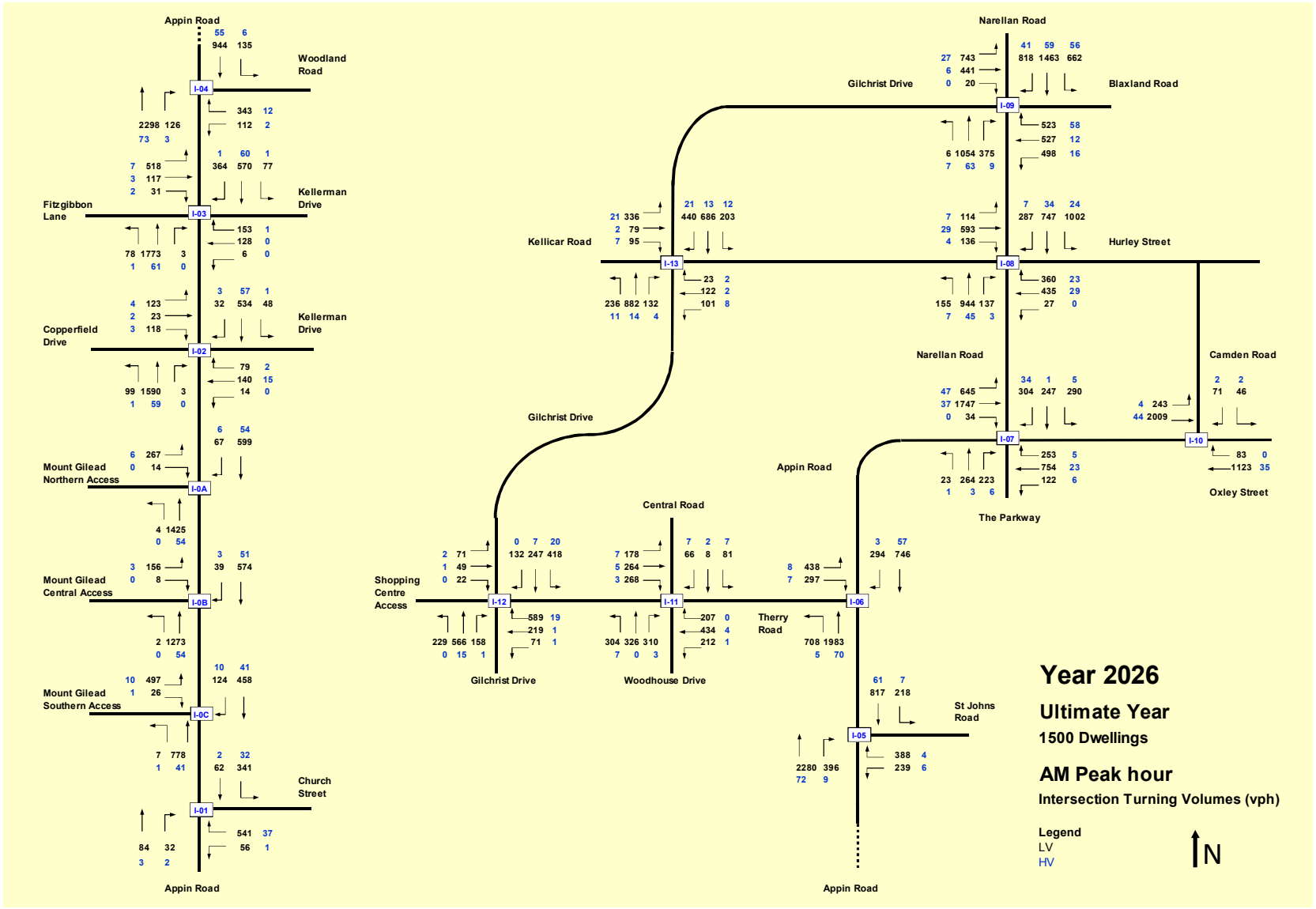


Figure 6.8 Future AM peak hour intersection turning volumes – Year 2026 with ultimate development (1,500 dwellings with 95% external trips)

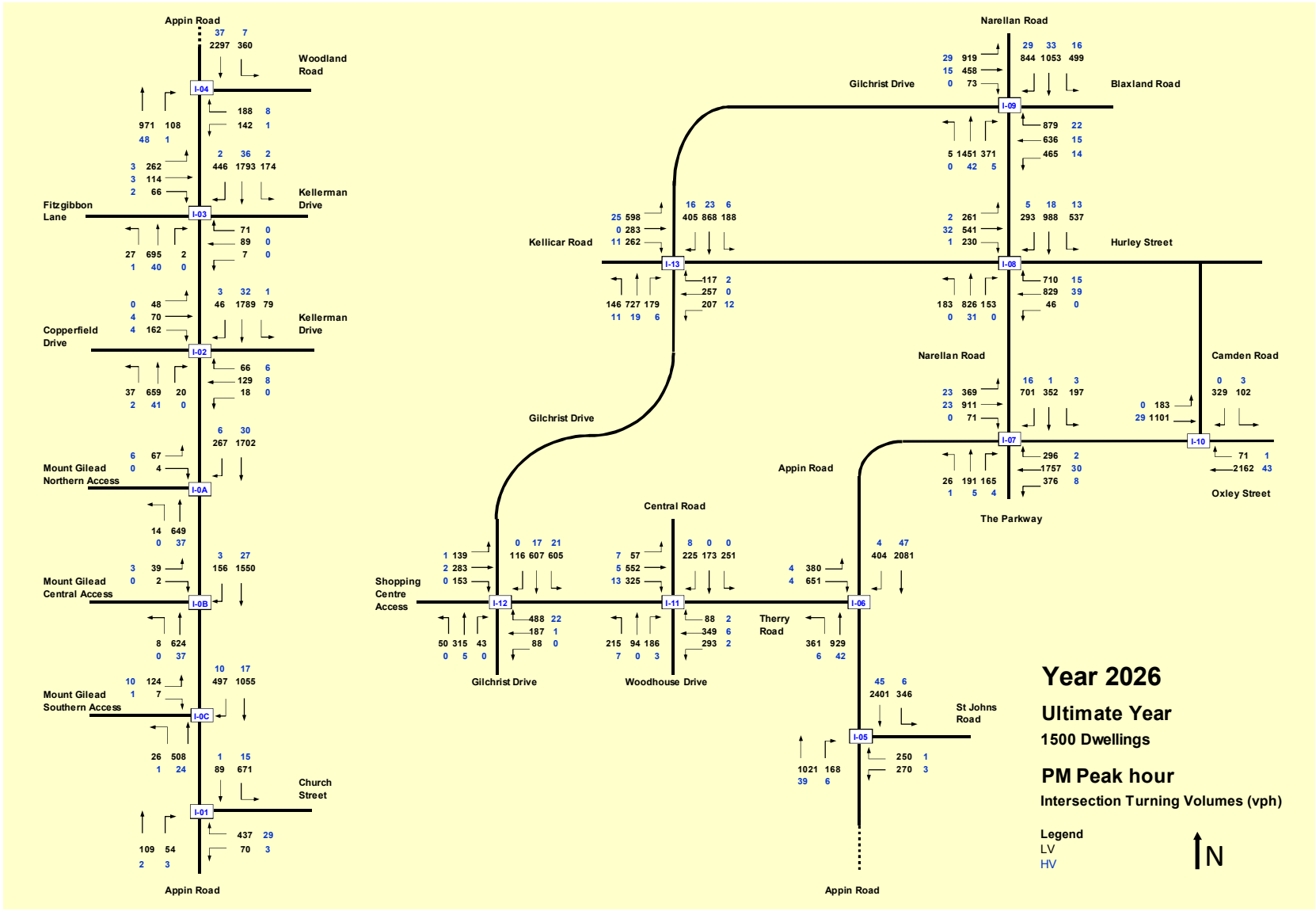


Figure 6.9 Future PM peak hour intersection turning volumes – Year 2026 with ultimate development (1,500 dwellings with 95% external trips)

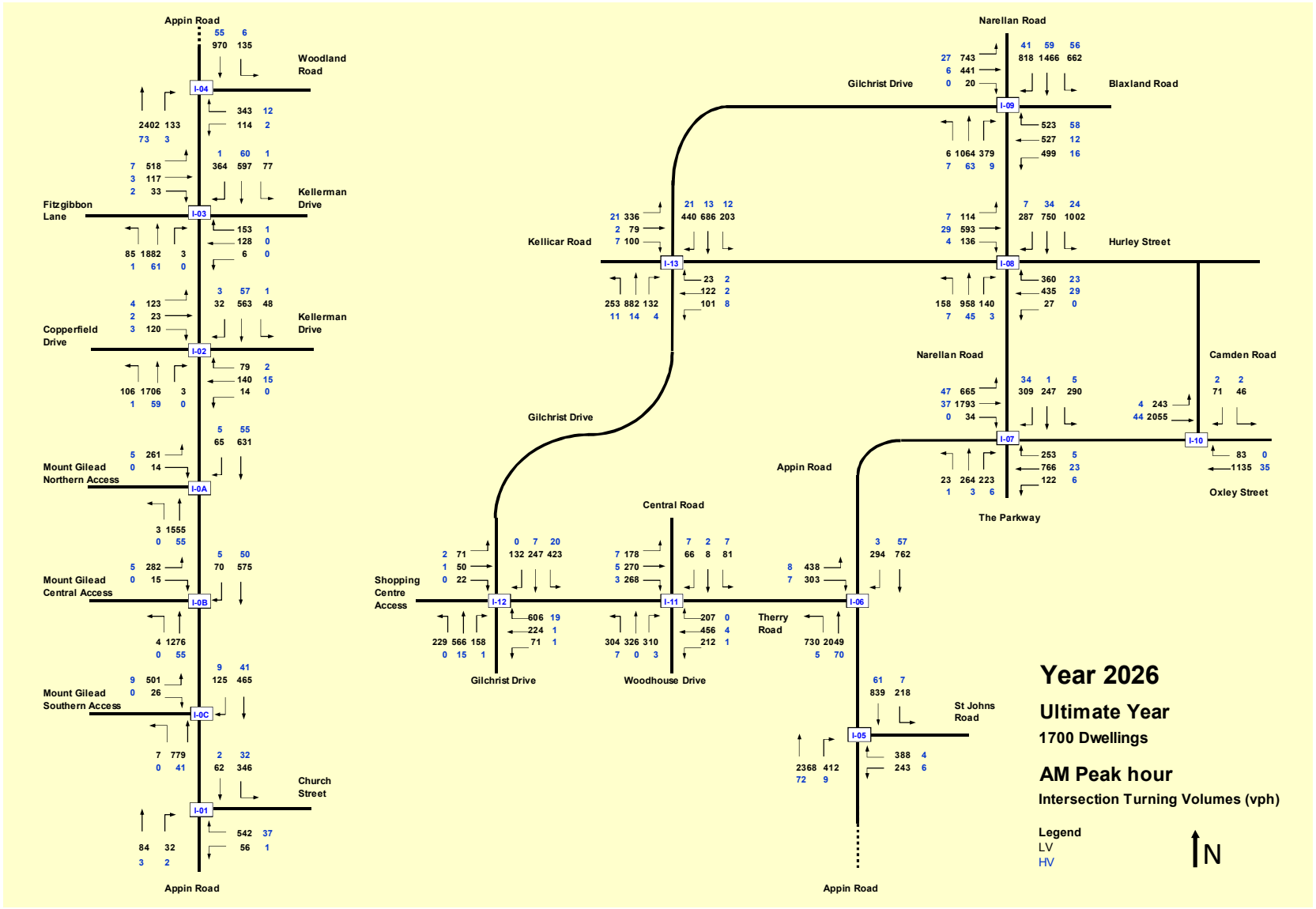


Figure 6.10 Future AM peak hour intersection turning volumes – Year 2026 with ultimate development (1,700 dwellings with 95% external trips)

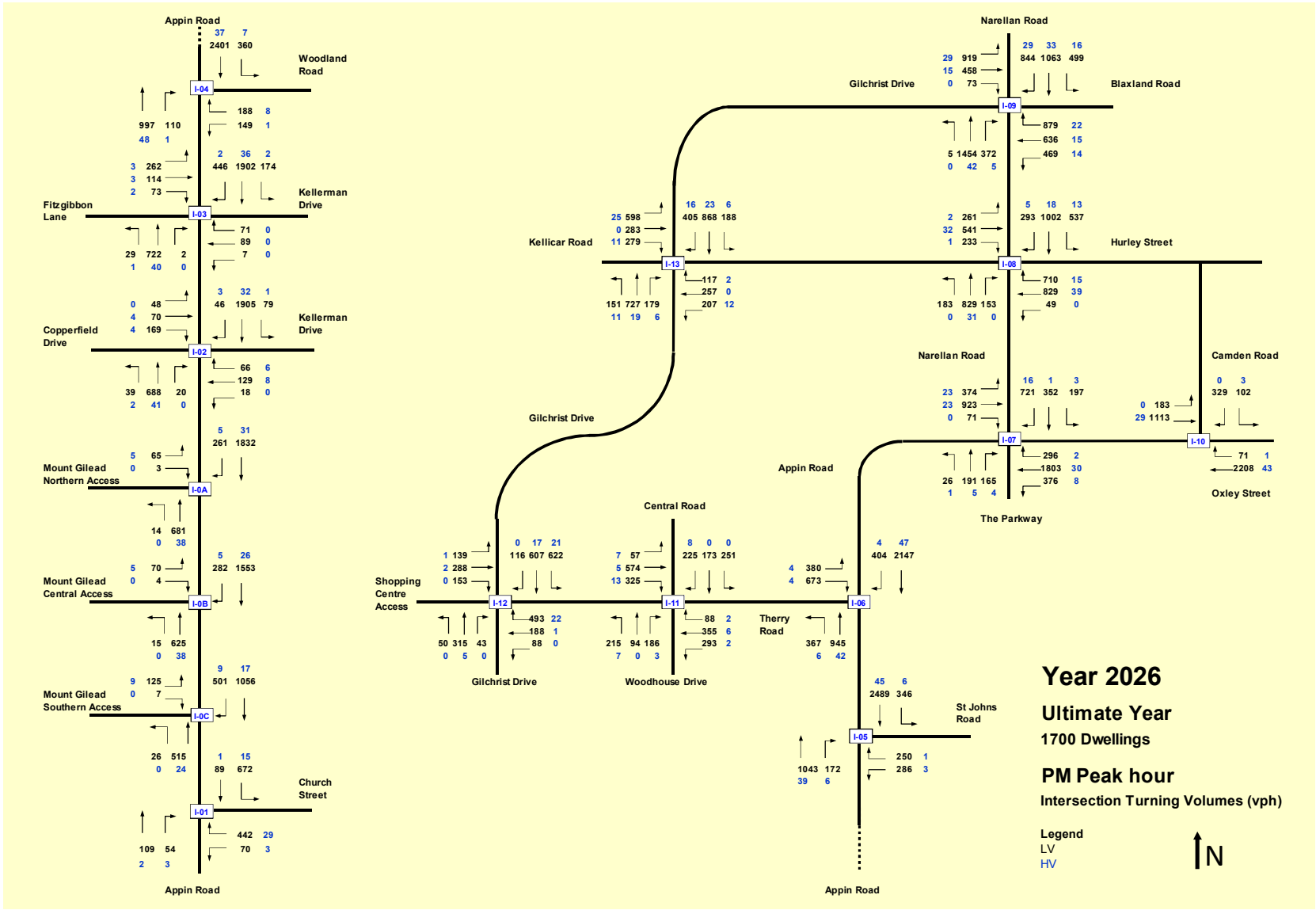
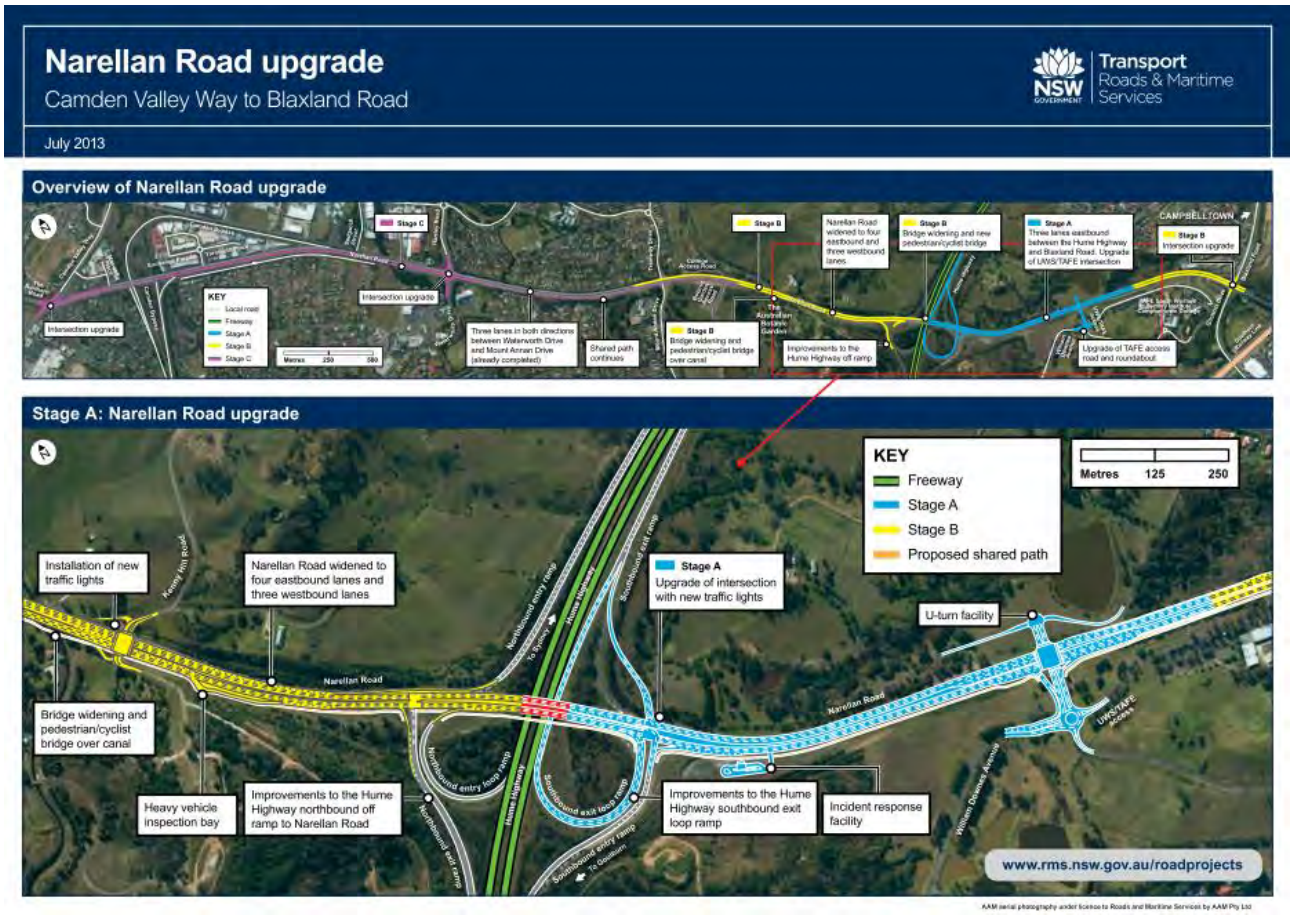


Figure 6.11 Future PM peak hour intersection turning volumes – Year 2026 with ultimate development (1,700 dwellings with 95% external trips)

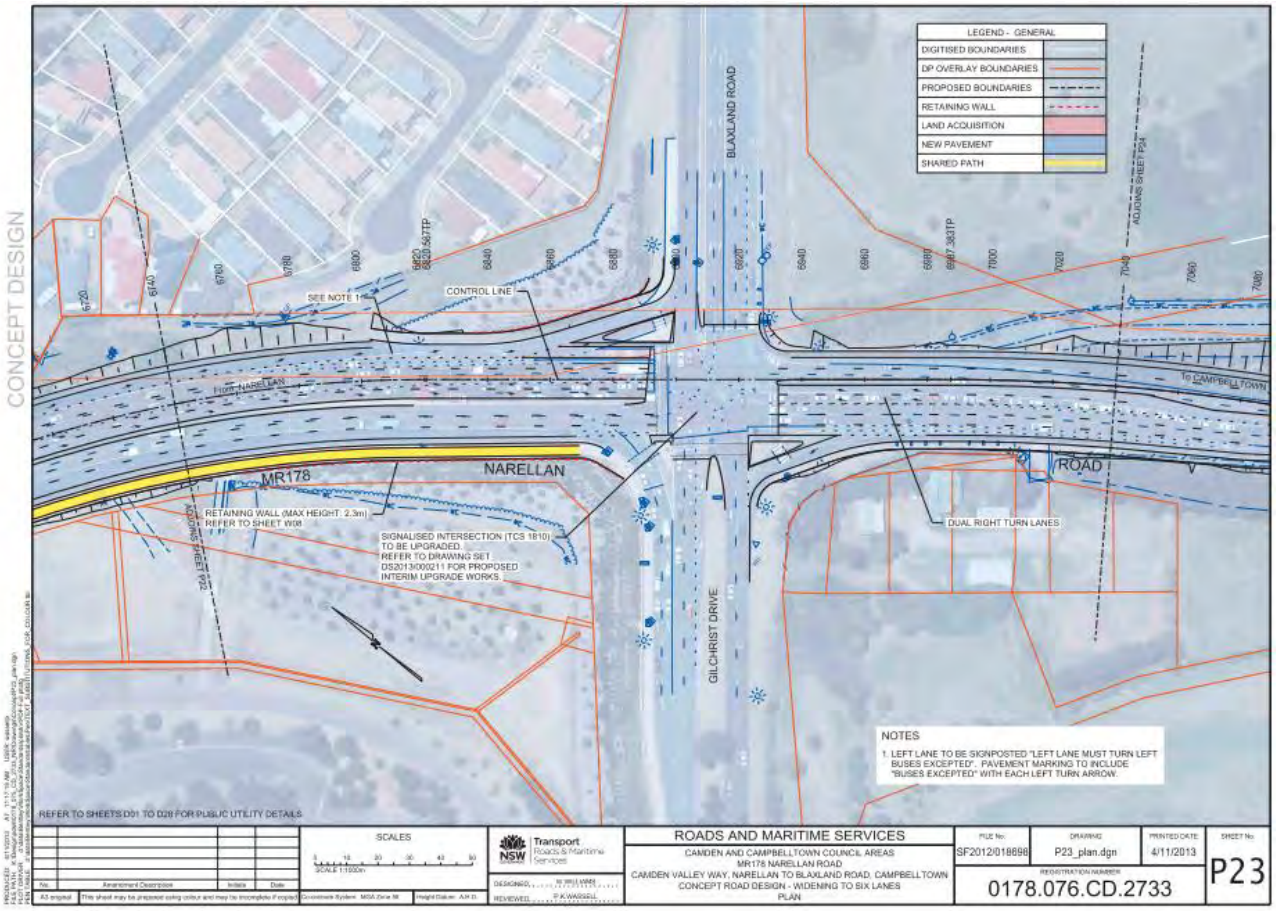
6.8 Future planned road upgrades in the study area

Consultation with both Campbelltown City Council and the RMS indicate that no future road upgrades or widening of Appin Road or any other roads within the study area are envisaged at this stage. Narellan Road between Blaxland Road and Camden Valley Way is proposed to be upgraded by the RMS to six lanes with three lane dual carriageways. This upgrade is shown in Figure 6.12 and Figure 6.13. RMS is currently considering upgrades to the intersection of Narellan Road, Appin Road, Oxley Street and The Parkway as shown in Figure 6.14.



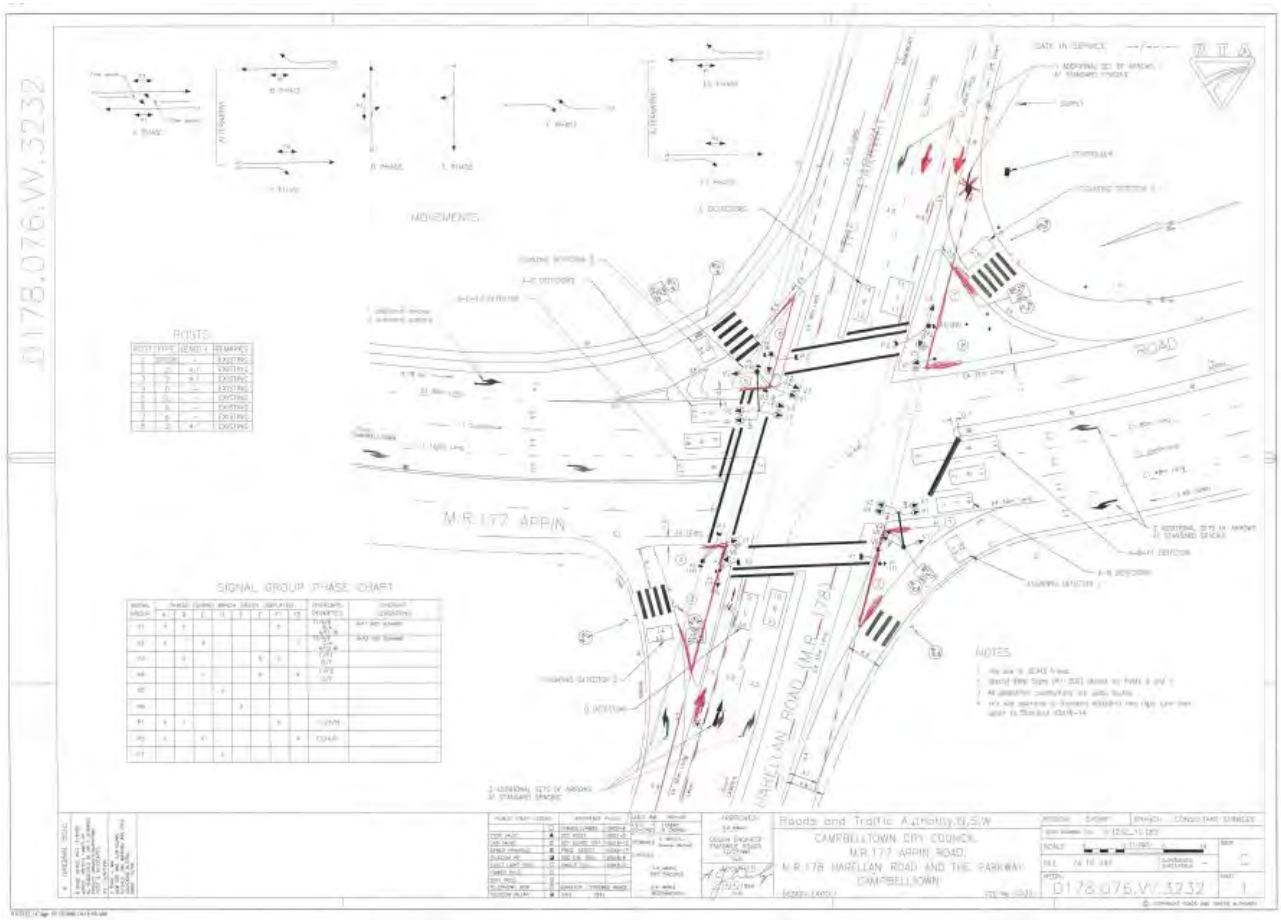
Source: Roads and Maritime Services (2013)

Figure 6.12 Narellan Road upgrade – Camden Valley Way to Blaxland Road



Source: Roads and Maritime Services (2014)

Figure 6.13 Narellan Road and Blaxland Road Intersection Layout including approach and departure lanes



Source: Roads and Maritime Services (2014)

Figure 6.14 Narellan Road, Appin Road, Oxley Street and The Parkway Upgraded Intersection Layout

7. Intersection layouts and intersection performance

This section details the intersection layouts modelled and their performance utilising the SIDRA modelling package. Intersection performance is assessed for several future year scenarios with the various development densities as discussed previously.

7.1 Intersections assessed

Several existing intersections and three proposed intersections have been assessed for future conditions, with and without the proposed development, dependant on the staging of development. Indicative timing for the construction of development access intersections with Appin Road is 2016 for the central and southern accesses and post 2021 for the northern access.

7.1.1 Appin Road and Proposed Development North Access

This is a three-way roundabout with a single and dual circulating lane with splitter islands on each approach. Appin Road would become two lanes in both directions with a divided centre median and the Proposed Development North Access road generally two-lane two-way.

Figure 7.1 Appin Road and Proposed Development North Access indicative location and ultimate intersection layout

7.1.2 Appin Road and Proposed Development Central Access

This is a three-way roundabout with a single and dual circulating lane with splitter islands on each approach. Appin Road North would be four-lane two-way with a divided centre median and Appin Road South would be generally three-lane two-way with a divided centre median. The Proposed Development Central Access is generally a two-lane two-way road.

Figure 7.2 Appin Road and Proposed Development Central Access indicative location and ultimate intersection layout

7.1.3 Appin Road and Proposed Development South Access

This is a three way roundabout with a single and dual circulating lane with splitter islands on each approach. Appin Road South and the Proposed Development South Access are generally two-lane two-way roads. Appin Road North between the South and Central Access would be three-lane two-way with a divided centre median.

Figure 7.3 Appin Road and Proposed Development South Access indicative location and ultimate intersection layout

7.1.4 Appin Road and Appin Road (Church Street)

This is currently a stop sign controlled T-junction with priority to Appin Road (Church Street). Appin Road and Church Street are generally two-lane two-way roads.

Figure 7.4 Appin Road and Appin Road (Church Street) intersection location and layout

7.1.5 Appin Road and Copperfield Drive and Kellerman Drive

This intersection operates as a four-way roundabout with single circulating lane with splitter islands on each approach. Appin Road, Copperfield Drive and Kellerman Drive are all two-lane two-way roads.

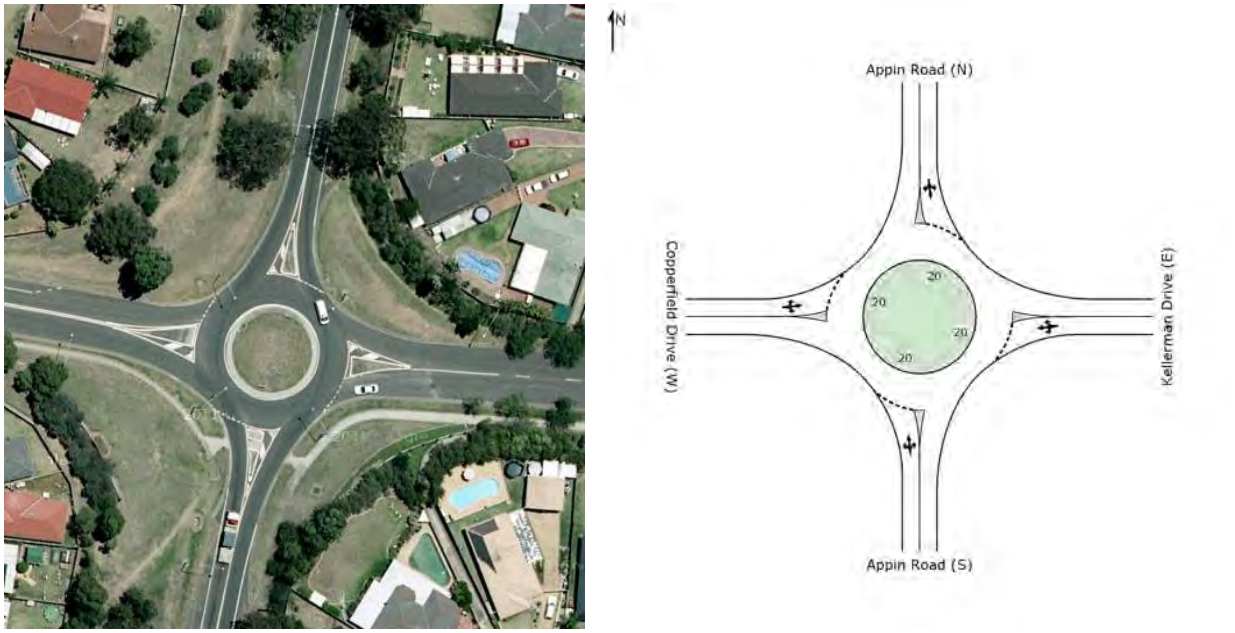


Figure 7.5 Appin Road and Copperfield Drive intersection location and layout

7.1.6 Appin Road and Fitzgibbon Lane and Kellerman Drive

This is a four-way signalised intersection with two lanes on approach and departure and dedicated right turn lanes on Appin Road. Fitzgibbon Lane and Kellerman Drive are generally two-lane two-way roads.

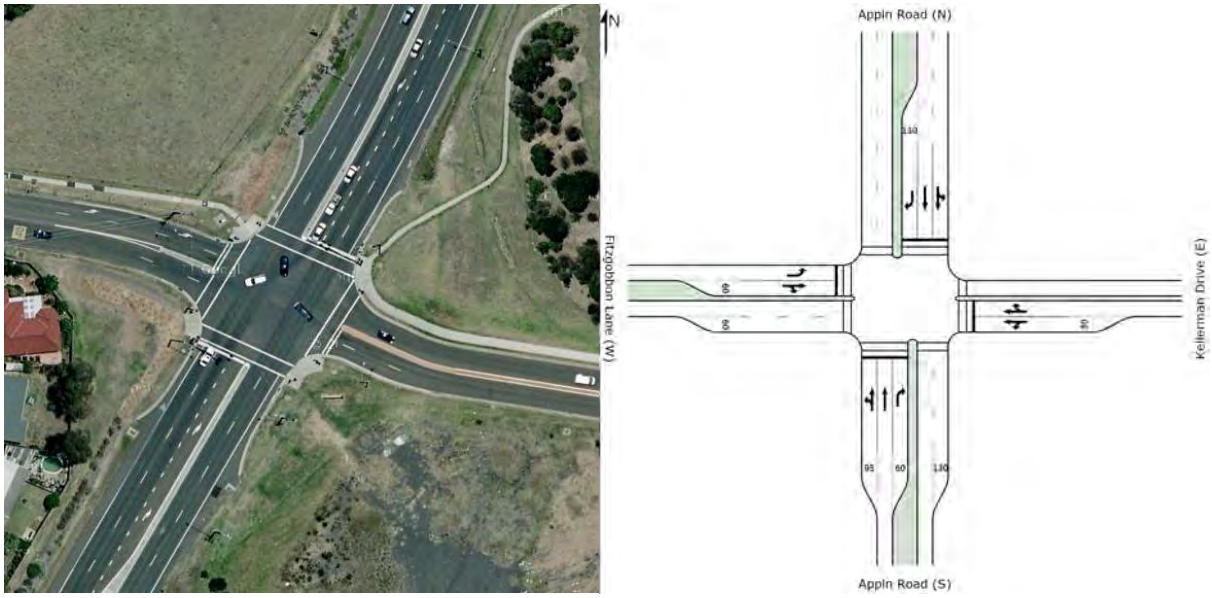


Figure 7.6 Appin Road and Fitzgibbon Lane intersection location and layout

7.1.7 Appin Road and Woodland Road

This T-junction is a signalised intersection with two lanes on approach and departure and dedicated left and right turn lanes on Appin Road. Woodland Road is generally two-lane two-way.

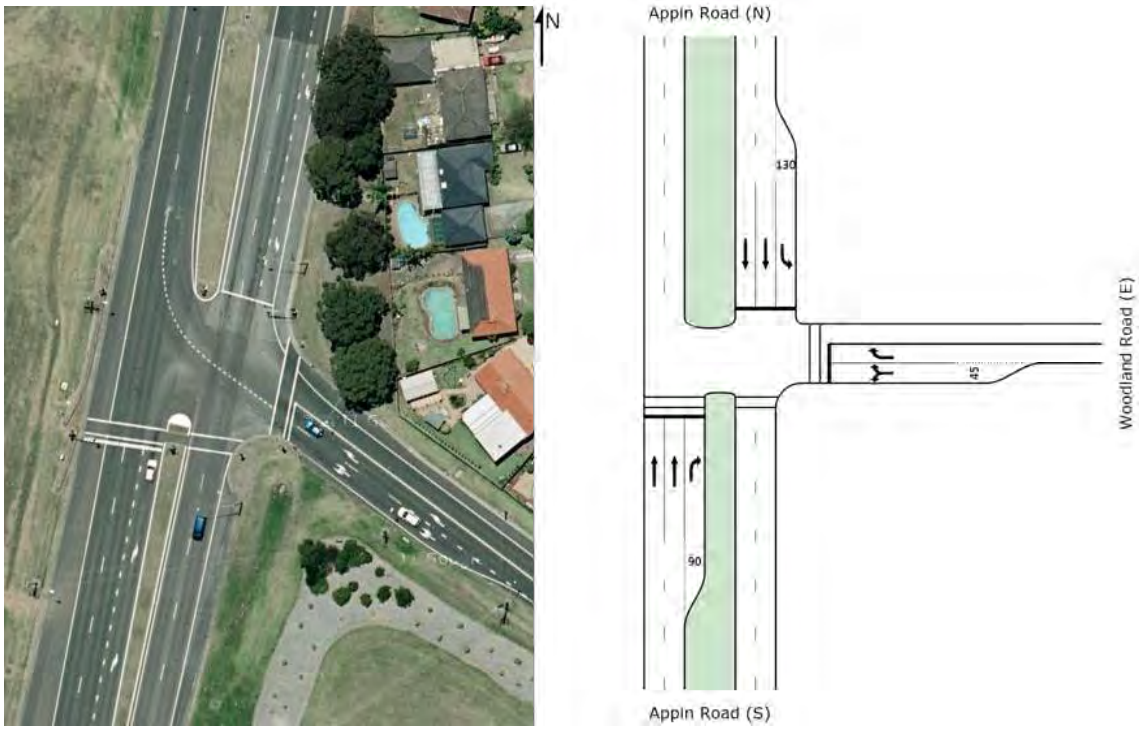


Figure 7.7 Appin Road and Woodland Road intersection location and layout

7.1.8 Appin Road and St Johns Road

This is a signalised T-junction with two lanes on approach and departure and dedicated left and right turn lanes on Appin Road. St Johns Road is generally two-lane two-way divided road at the intersection.

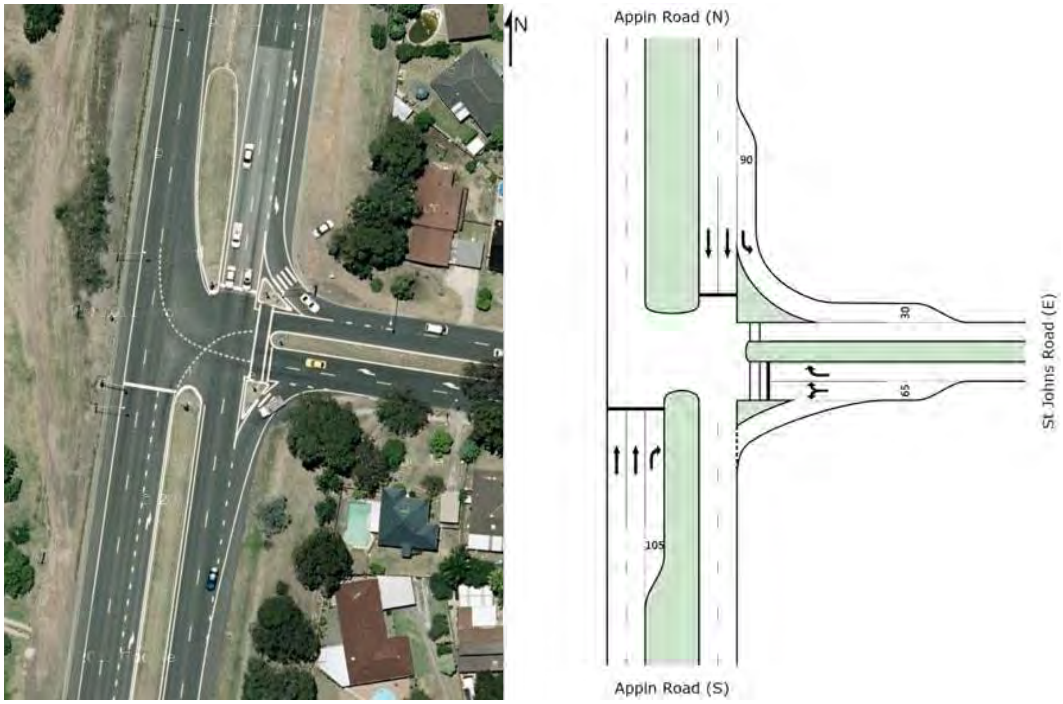


Figure 7.8 Appin Road and St Johns Road intersection location and layout

7.1.9 Appin Road and Therry Road

This is a signalised T-junction with two lanes on approach and departure and dedicated left and right turn lanes on Appin Road. Therry Road is two lanes in either direction with median separation.

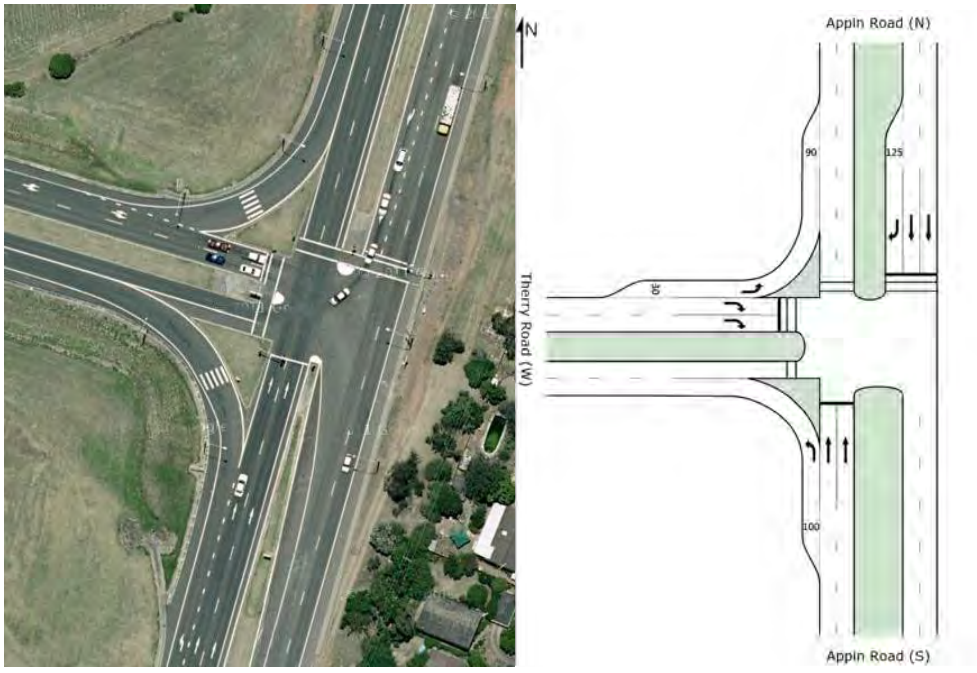


Figure 7.9 Appin Road and Therry Road intersection location and layout

7.1.10 Appin Road and Narellan Road and Oxley Street and The Parkway

This is a four-way major signalised intersection with dedicated right turn lanes on all approaches. Appin Road, Narellan Road and Oxley Street generally all have two lanes in either direction and The Parkway one lane in either direction.

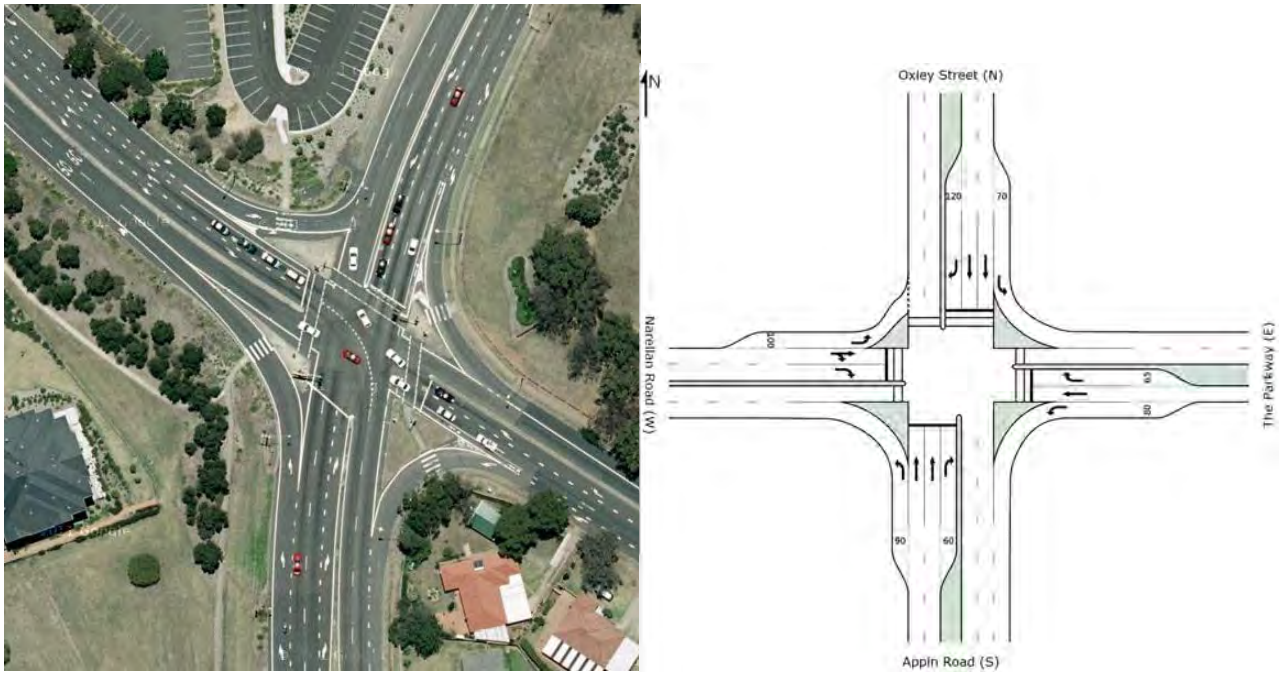


Figure 7.10 Appin Road and Narellan Road and The Parkway intersection location and layout

7.1.11 Narellan Road and Kellicar Road

This is a four-way major signalised intersection with dedicated right turn lanes on all approaches. Both Narellan Road and Kellicar Road are generally two lanes in either direction with divided median.

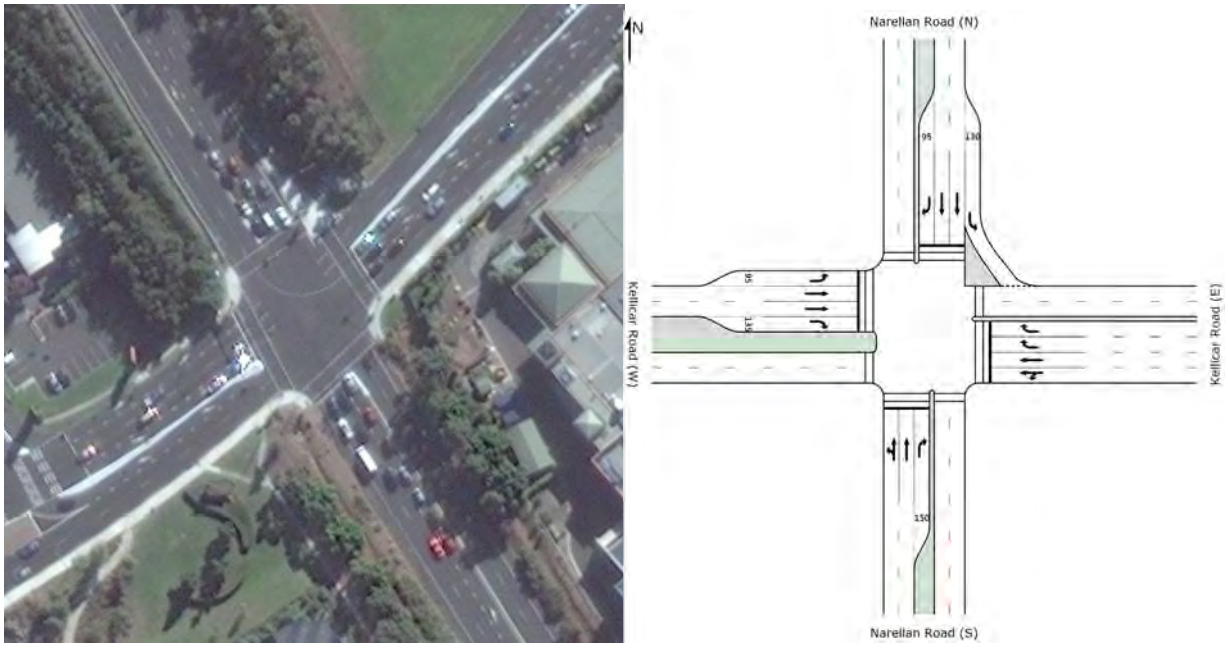


Figure 7.11 Narellan Road and Kellicar Road intersection location and layout

7.1.12 Oxley Street (Moore – Oxley Bypass) and Camden Road

This is a signalised 'seagull' intersection with a dedicated right turn lane and merge lane provided on Oxley Street. Oxley Street is generally two lanes in either direction and Camden Road one lane in either direction.

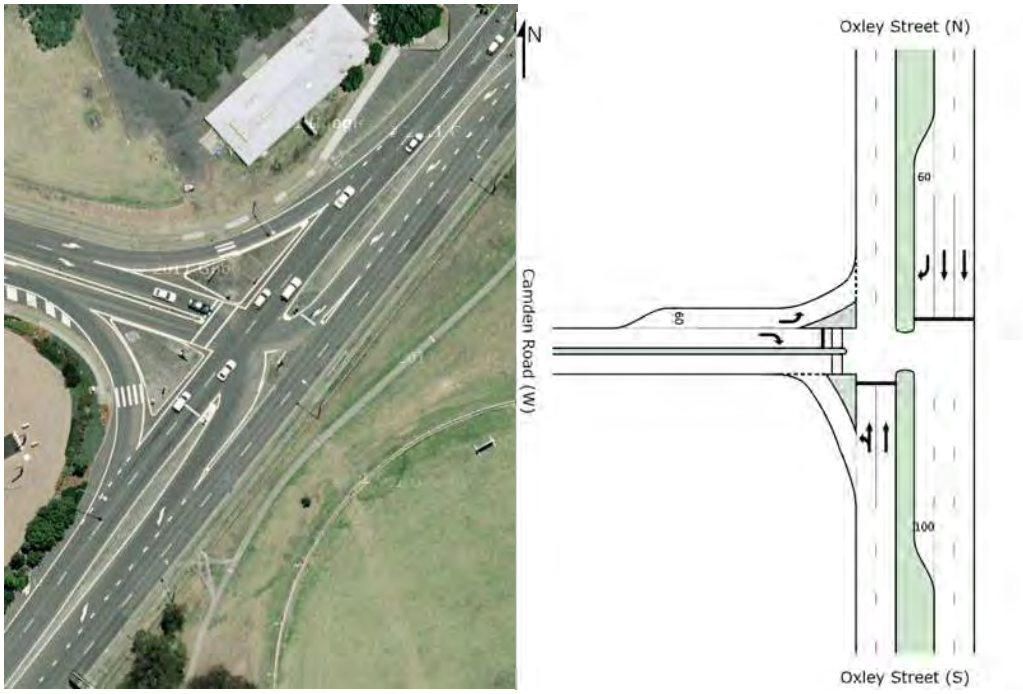


Figure 7.12 Oxley Street and Camden Road intersection location and layout

7.1.13 Narellan Road and Blaxland Road and Gilchrist Drive

This is a four-way major signalised intersection with dedicated single and dual right turn lanes. Narellan Road, Gilchrist Drive and Blaxland Road are generally two lanes in either direction.

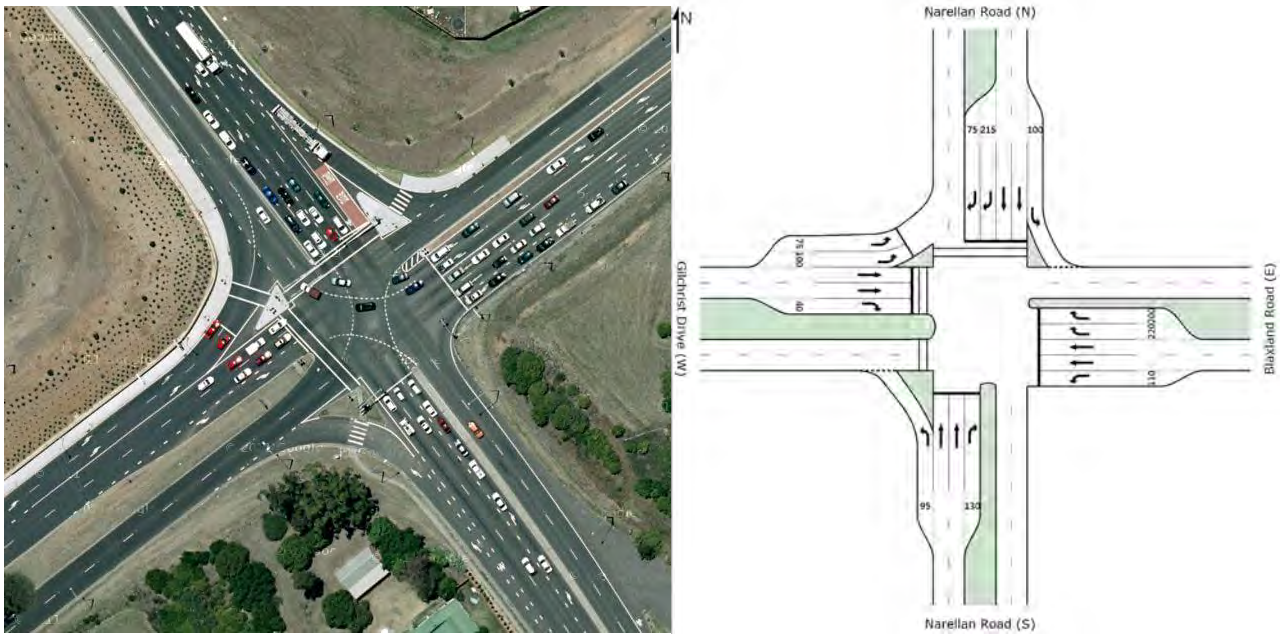


Figure 7.13 Narellan Road and Gilchrist Drive intersection location and layout

7.1.14 Kellicar Road and Gilchrist Drive

This is a four-way signalised intersection with dedicated right turn lanes on all approaches. Gilchrist Drive and Kellicar Road are generally two lanes in either direction.

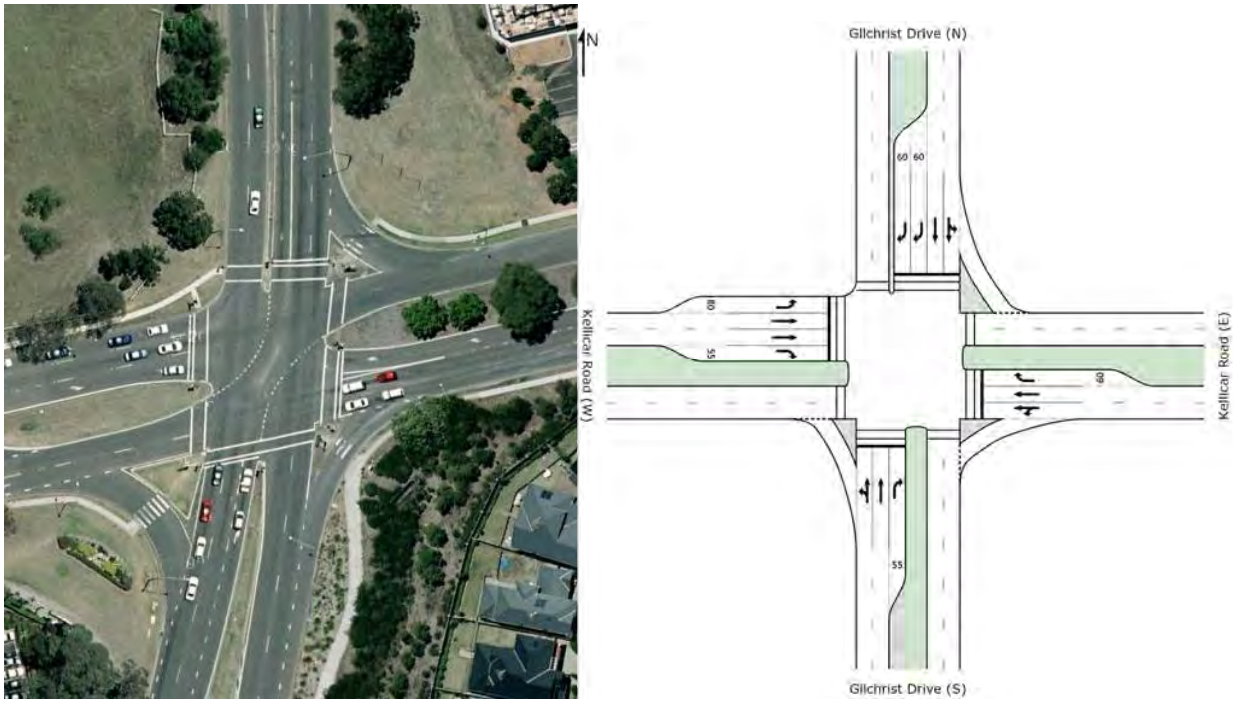


Figure 7.14 Kellicar Road and Gilchrist Drive intersection location and layout

7.1.15 Therry Road and Gilchrist Drive

This is a four-way roundabout with dual circulating lanes and wide central medians on all approaches. Gilchrist Drive to the north-east and Therry Road are generally two lanes in either direction. Gilchrist Drive to the south-west is one lane in either direction.

Figure 7.15 Therry Road and Gilchrist Drive intersection location and layout

7.1.16 Therry Road and Woodhouse Drive

This is a four-way roundabout with dual circulating lanes with splitter islands on all approaches. Therry Road is generally two lanes in either direction and Woodhouse Drive one lane in either direction.

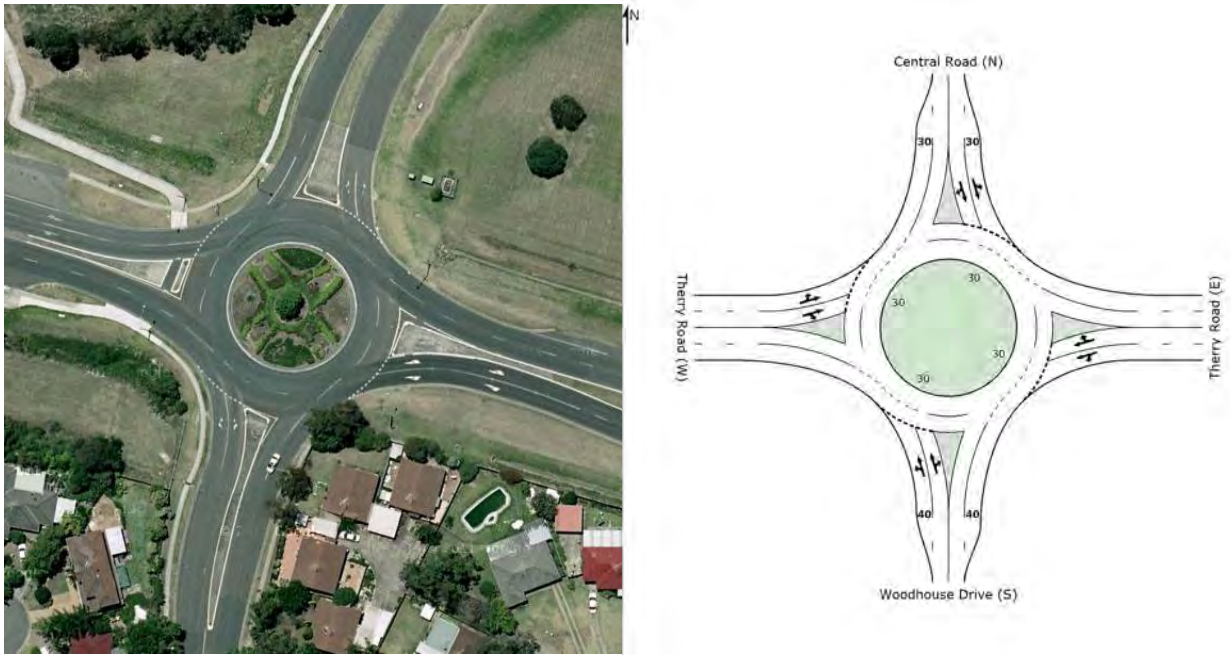


Figure 7.16 Therry Road and Woodhouse Drive intersection location and layout

7.2 Intersection performance parameters

The ability of each of the assessed intersections to cater for existing and future traffic forecasts were investigated using the SIDRA intersection modelling software package. This package provides several useful parameters to determine the level of intersection performance.

7.2.1 Level of service (LoS)

Level of Service (Los) is a basic performance parameter used to describe the operation of an intersection. Levels of service range from A (indicating good intersection operation) to F (indicating over-saturated conditions with long delays and queues). At signalised intersections, the LoS criteria are related to average intersection delay (seconds per vehicle). At priority controlled (give-way and stop controlled) and roundabout intersections, the LoS is based on the modelled delay (seconds per vehicle) for the most delayed movement (refer to Table 7.1).

Table 7.1 Level of service criteria for intersections

Level of service	Average delay (seconds per vehicle)	Traffic signals, roundabout	Give Way and stop signs
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required

Level of service	Average delay (seconds per vehicle)	Traffic signals, roundabout	Give Way and stop signs
E	57 to 70	At capacity. At signals, incidents would cause excessive delays. Roundabouts require other control mode.	At capacity; requires other control mode
F	Greater than 71	Unsatisfactory with excessive queuing	Unsatisfactory with excessive queuing; requires other control mode

Source: RMS Guide to Traffic Generating Developments, 2002

7.2.2 Degree of saturation (DoS)

The Degree of Saturation (DoS) is the ratio of demand flow to capacity, and therefore has no unit. As it approaches 1.0, extensive queues and delays could be expected. For a satisfactory situation, DoS should be less than the nominated practical degree of saturation, usually 0.9. The intersection DoS is based on the movement with the highest value.

7.2.3 Average vehicle delay

This is the difference between interrupted and uninterrupted travel times through the intersection and is measured in seconds per vehicle. At signalised intersections, the average intersection delay is usually reported. At roundabouts and priority controlled intersections, the average delay for the most delayed movement is usually reported.

7.2.4 Queue length

Queue length is measured in metres reflecting the number of vehicles waiting at the stop line and is usually quoted as the 95th percentile back of queue, which is the value below which 95% of all observed queue lengths fall. It reflects the number of vehicles per traffic lane at the start of the green period, when traffic starts moving again after a red signal. The intersection queue length is usually taken from the movement with the longest queue length.

Typically acceptable intersection performance is defined as follows:

- LoS D or better (the worst case scenario of vehicle delay was less than or equal to 56 seconds)
- Degree of saturation (DoS) less than or equal to 0.8 at priority controlled intersection, and 0.90 at a signalised controlled intersection
- 95th percentile worst back of queue length not interfering with adjacent intersections.

7.3 Intersection performance

7.3.1 Existing scenario (2013)

The performance of each of the key intersections was analysed for existing conditions. The assessment of intersection performance was based on the existing surveyed traffic volumes for the AM and PM peak periods shown in Figure 5.1 and Figure 5.2. The results from the analysis for 2013 are summarised in Table 7.2.

Table 7.2 Summary of intersection performance – Existing Year 2013

Site ID	Intersection	Peak period	Degree of Saturation	Average Delay (s)	Level of Service	95th Percentile Queue (m)
I-01	Appin Road and Appin Road (Church Street)	AM	0.29	12	A	2
		PM	0.31	11	A	2
I-02	Appin Road, Copperfield Drive and Kellerman Drive	AM	0.61	18	B	40
		PM	0.73	22	B	62
I-03	Appin Road, Fitzgibbon Lane and Kellerman Drive	AM	0.88	36	C	173
		PM	0.77	29	C	168
I-04	Appin Road and Woodland Road	AM	0.63	15	B	75
		PM	0.63	14	A	108
I-05	Appin Road and St Johns Road	AM	0.62	21	B	97
		PM	0.70	14	A	128
I-06	Appin Road and Therry Road	AM	0.88	25	B	220
		PM	0.68	20	B	102
I-07	Appin Road, Narellan Road, Oxley Street and The Parkway	AM	0.89	45	D	279
		PM	0.75	40	C	223
I-08	Narellan Road and Kellicar Road	AM	0.86	45	D	174
		PM	0.91	60	E	215
I-09	Narellan Road, Gilchrist Drive and Blaxland Road	AM	1.07	82	F	474
		PM	1.14	110	F	551
I-10	Oxley Street and Camden Road	AM	0.60	6	A	69
		PM	0.68	10	A	74
I-11	Therry Road, Central Road and Woodhouse Drive	AM	0.50	16	B	23
		PM	0.37	15	B	16
I-12	Therry Road and Gilchrist Drive	AM	0.46	16	B	21
		PM	0.46	15	B	22
I-13	Gilchrist Drive and Kellicar Road	AM	0.80	36	C	138
		PM	0.82	42	C	194

From Table 7.2, it can be seen that the most of intersections currently operate at a satisfactory level of service (LoS C or better) during both the AM and PM peak hours. Most of the intersections were assessed as operating with spare capacity with movement volumes being less than 90% of the design capacity (DoS < 0.90). Traffic using these intersections could expect to experience delays of less than 45 seconds.

The intersection of Narellan Road and Kellicar Road performs satisfactorily in the AM peak, achieving a Level of Service (LoS) D. However in the PM peak the intersection deteriorates to a LoS E.

The intersection of Narellan Road, Gilchrist Drive and Blaxland Road operates at an unsatisfactory level of service (LoS F) and experiences long delays and queuing for both the AM and PM peak periods. The results indicated that intersection capacity is reached as six movements are operating at a DoS of 1.00 or higher in the PM peak hour.

7.3.2 Future do-nothing scenario (2021)

The intersection performance for a future interim year of partial development (2021) has been assessed to determine the impacts with and without development. The results of the intersection performance without the proposed Mount Gilead development are presented in Table 7.3.

Table 7.3 Summary of intersection performance – Future Year Do-Nothing 2021

Site ID	Intersection	Peak period	Degree of Saturation	Average Delay (s)	Level of Service	95th Percentile Queue (m)
I-01	Appin Road and Appin Road (Church Street)	AM	0.35	13	A	3
		PM	0.37	12	A	3
I-02	Appin Road, Copperfield Drive and Kellerman Drive	AM	0.73	21	B	69
		PM	0.87	37	C	128
I-03	Appin Road, Fitzgibbon Lane and Kellerman Drive	AM	0.99	62	E	440
		PM	0.66	34	C	233
I-04	Appin Road and Woodland Road	AM	0.65	26	B	144
		PM	0.65	16	B	146
I-05	Appin Road and St Johns Road	AM	0.76	24	B	144
		PM	0.76	18	B	213
I-06	Appin Road and Therry Road	AM	0.81	23	B	269
		PM	0.78	26	B	175
I-07	Appin Road, Narellan Road, Oxley Street and The Parkway EXISTING LAYOUT	AM	1.00	56	D	406
		PM	0.93	42	C	231
I-08	Narellan Road and Kellicar Road	AM	0.93	47	D	227
		PM	1.03	86	F	328
I-09	Narellan Road, Gilchrist Drive and Blaxland Road EXISTING LAYOUT	AM	1.13	105	F	485
		PM	1.31	167	F	902
I-10	Oxley Street and Camden Road	AM	0.71	6	A	90
		PM	0.70	11	A	109

Site ID	Intersection	Peak period	Degree of Saturation	Average Delay (s)	Level of Service	95th Percentile Queue (m)
I-11	Therry Road, Central Road and Woodhouse Drive	AM	0.58	19	B	30
		PM	0.43	16	B	21
I-12	Therry Road and Gilchrist Drive	AM	0.55	16	B	28
		PM	0.55	16	B	31
I-13	Gilchrist Drive and Kellicar Road	AM	0.82	38	C	164
		PM	0.93	41	C	205

From Table 7.3, it can be seen that the most of intersections will continue to operate at a satisfactory level of service LoS C or better during both the AM and PM peak hours in 2021. However, it is clear from the above results, additional capacity would be required for a number of intersections in order to accommodate future background traffics growth.

Four intersections would operate at capacity and experience long delays and queuing in either the AM or PM peak or both. The results indicate that the following intersections have insufficient capacity to accommodate the background traffic volumes in 2021:

- The intersection of Appin Road, Fitzgibbon Lane and Kellerman Drive would perform unsatisfactorily at a LoS E in the AM peak.
- The intersection of Appin Road, Narellan Road, Oxley Street and The Parkway would perform satisfactorily, achieving a LoS D or better during both AM and PM peak hours. However, the DoS is projected between 0.93 and 1.00, indicating the intersection will be operating at capacity.
- The intersection of Narellan Road and Kellicar Road will perform unsatisfactorily, achieving a LoS F during the PM peak hour with DoS of 1.03.
- The intersection of Narellan Road, Gilchrist Drive and Blaxland Road will operate at an unsatisfactory level of service (LoS F) for both the AM and PM peak hours. During the PM peak hour a queue of 902 m on the southern approach of Narellan Road can be expected. As a result, the queue would impact on the traffic flow and operational performance at the adjacent intersection of Narellan Road and Kellicar Road.

7.3.3 Future with development scenario – interim (2021)

The impacts of development during interim staging based on 850 dwellings being built with two accesses (central and southern) constructed connecting with Appin Road are detailed in Table 7.4.

Table 7.4 Summary of intersection performance – Future Year with Development 2021 (850 dwellings)

Site ID	Intersection	Peak period	Degree of Saturation	Average Delay (s)	Level of Service	95th Percentile Queue (m)
I-01	Appin Road and Appin Road (Church Street)	AM	0.35	13	A	3
		PM	0.37	12	A	3
I-02	Appin Road, Copperfield Drive and Kellerman Drive	AM	1.20	205	F	1246
		PM	1.33	318	F	1961
I-03	Appin Road, Fitzgibbon Lane and Kellerman Drive	AM	1.34	169	F	1409
		PM	0.80	34	C	347
I-04	Appin Road and Woodland Road	AM	0.79	25	B	183
		PM	0.80	15	B	204
I-05	Appin Road and St Johns Road	AM	0.86	30	C	236
		PM	0.92	25	B	439
I-06	Appin Road and Therry Road	AM	0.92	29	C	435
		PM	0.82	27	B	203
I-07	Appin Road, Narellan Road, Oxley Street and The Parkway EXISTING LAYOUT	AM	1.06	78	F	583
		PM	1.00	54	D	353
I-08	Narellan Road and Kellicar Road	AM	0.96	52	D	259
		PM	1.07	96	F	374
I-09	Narellan Road, Gilchrist Drive and Blaxland Road EXISTING LAYOUT	AM	1.13	118	F	559
		PM	1.26	192	F	890
I-09	Narellan Road, Gilchrist Drive and Blaxland Road RMS UPGRADED LAYOUT	AM	1.19	123	F	783
		PM	1.12	111	F	414
I-10	Oxley Street and Camden Road	AM	0.74	7	A	131
		PM	0.62	14	A	166
I-11	Therry Road, Central Road and Woodhouse Drive	AM	0.61	19	B	33
		PM	0.45	17	B	23
I-12	Therry Road and Gilchrist Drive	AM	0.59	17	B	32
		PM	0.57	17	B	33
I-13	Gilchrist Drive and Kellicar Road	AM	0.86	38	C	180
		PM	0.93	42	C	205
I-0B	Appin Road and Proposed Development Central Access	AM	0.76	31	C	86
		PM	0.47	15	B	35

Site ID	Intersection	Peak period	Degree of Saturation	Average Delay (s)	Level of Service	95th Percentile Queue (m)
I-0C	Appin Road and Proposed Development South Access	AM	0.59	17	B	38
		PM	0.58	14	A	45

Table 7.4 shows that eight out of 13 existing intersections and two proposed intersections to the Mount Gilead site would operate satisfactorily with LoS C or better during both the AM and PM peak hours in 2021. These intersections were assessed as operating with spare capacity with movement volumes being less than 90% of the design capacity (DoS < 0.90). Traffic using these intersections could expect to experience delays of less than 45 seconds.

Five intersections would operate at capacity and experience long delays and queuing in either the AM or PM peak or both. Analysis of the performance at these intersections indicates:

- The intersection of Appin Road, Copperfield Drive and Kellerman Drive would operate at an unsatisfactory level of service (LoS F) for both the AM and PM peak hours. During both the AM and PM peak hours, significant delays and queues would be expected on Appin Road.
- The intersection of Appin Road, Fitzgibbon Lane and Kellerman Drive would perform unsatisfactorily, with a LoS F during the AM peak with a DoS of 1.34 indicating the intersection would operate beyond capacity during the AM peak hour. During the PM peak, this intersection operates at good levels of service (LoS C).
- The intersection of Appin Road, Narellan Road, Oxley Street and The Parkway would perform unsatisfactorily, achieving a LoS F and LoS D respectively in the AM and PM peak hours.
- The intersection of Narellan Road and Kellicar Road would perform unsatisfactorily (LoS F) during the PM peak with DoS 1.07.
- The intersection of Narellan Road, Gilchrist Drive and Blaxland Road would operate at an unsatisfactory level of service (LoS F) for both the AM and PM peak hours. Due to the extensive delays and queues anticipated at this intersection, impacts on the traffic flow at the adjacent intersections would be evident.

Traffic generated by the development of **850 dwellings** is expected to increase total intersection traffic volumes when compared to the 2021 base traffic volumes by:

- 670 vehicles, which equates to 40.9% (of total intersection traffic) in the 2021 AM peak and 35.2% in the 2021 PM peak for the Appin Road, Copperfield Drive and Kellerman Drive intersection
- 636 vehicles, which equates to 24.0% (of total intersection traffic) in the 2021 AM peak and 25.0% in the 2021 PM peak for the Appin Road, Fitzgibbon Lane and Kellerman Drive intersection
- 599 vehicles, which equates to 21.2% (of total intersection traffic) in the 2021 AM peak and 20.7% in the 2021 PM peak for the Appin Road and Woodland Road intersection
- 562 vehicles, which equates to 17.3% (of total intersection traffic) in the 2021 AM peak and 14.5% in the 2021 PM peak for the Appin Road and St Johns Road intersection
- 480 vehicles, which equates to 13.6% (of total intersection traffic) in the 2021 AM peak and 12.6% in the 2021 PM peak for the Appin Road and Therry Road intersection
- 362 vehicles, which equates to 8.8% (of total intersection traffic) in the 2021 AM peak and 7.9% in the 2021 PM peak for the Appin Road, Narellan Road, Oxley Street and The Parkway intersection
- 105 vehicles, which equates to 2.3% (of total intersection traffic) in the 2021 AM peak and 2.3% in the 2021 PM peak for the Narellan Road and Kellicar Road intersection
- 77 vehicles, which equates to 1.1% (of total intersection traffic) in the 2021 AM peak and 1.1% in the 2021 PM peak for the Narellan Road, Gilchrist Drive and Blaxland Road intersection.

7.3.4 Future do-nothing scenario (2026)

Intersection performance for the ultimate year of development (2026) has been assessed to determine the impacts with and without development. The results are presented in Table 7.5.

Table 7.5 Summary of intersection performance – Future Year Do-Nothing 2026

Site ID	Intersection	Peak period	Degree of Saturation	Average Delay (s)	Level of Service	95th Percentile queue (m)
I-01	Appin Road and Appin Road (Church Street)	AM	0.37	14	A	4
		PM	0.39	12	A	4
I-02	Appin Road, Copperfield Drive and Kellerman Drive	AM	0.79	24	B	88
		PM	0.93	53	D	196
I-03	Appin Road, Fitzgibbon Lane and Kellerman Drive	AM	1.09	88	F	620
		PM	0.71	35	C	259
I-04	Appin Road and Woodland Road	AM	0.69	26	B	166
		PM	0.69	16	B	167
I-05	Appin Road and St Johns Road	AM	0.77	30	C	213
		PM	0.81	18	B	251
I-06	Appin Road and Therry Road	AM	0.86	25	B	321
		PM	0.83	28	B	207
I-07	Appin Road, Narellan Road, Oxley Street and The Parkway EXISTING LAYOUT	AM	1.04	77	F	533
		PM	0.97	50	D	295
I-07	Appin Road, Narellan Road, Oxley Street and The Parkway RMS UPGRADED LAYOUT	AM	1.00	58	E	489
		PM	0.82	41	C	265
I-08	Narellan Road and Kellicar Road	AM	1.00	51	D	252
		PM	1.08	112	F	419
I-09	Narellan Road, Gilchrist Drive and Blaxland Road EXISTING LAYOUT	AM	1.32	169	F	1232
		PM	1.52	202	F	1148
I-09	Narellan Road, Gilchrist Drive and Blaxland Road RMS UPGRADED LAYOUT	AM	1.30	163	F	1129
		PM	1.20	127	F	476
I-10	Oxley Street and Camden Road	AM	0.76	6	A	105
		PM	0.75	11	A	129
I-11	Therry Road, Central Road and Woodhouse Drive	AM	0.62	20	B	35
		PM	0.46	17	B	25
I-12	Therry Road and Gilchrist Drive	AM	0.58	17	B	31
		PM	0.60	18	B	36
I-13	Gilchrist Drive and Kellicar Road	AM	0.86	40	C	184
		PM	1.00	49	D	266

From the results in Table 7.5, it can be seen that six intersections would operate at capacity and experience long delays and queuing in either the AM or PM peak or both. Analysis of intersection performance indicates:

- The intersection of Appin Road, Copperfield Drive and Kellerman Drive would perform satisfactorily, achieving a LoS D in the PM peak. However, the DoS of 0.93 indicates that this intersection would operate at or near capacity.
- The intersection of Appin Road, Fitzgibbon Lane and Kellerman Drive would operate at a unsatisfactory LoS F in the AM peak. Having said this, the DoS over 1.00 indicates that this intersection is operating at capacity.
- The result for the intersection of Appin Road, Narellan Road, Oxley Street and The Parkway suggests an unsatisfactory LoS F in the AM peak and satisfactory LoS D in the PM peak under the existing layout. With the proposed RMS upgraded layout, this intersection would perform at a LoS E in the AM peak and LoS C in the PM peak.
- The intersection of Narellan Road and Kellicar Road would operate at a satisfactory LoS D in the AM peak with DoS greater of 0.99 indicating that this intersection is performing at capacity. During the PM peak, the intersection would perform unsatisfactorily at a LoS F, with a Degree of Saturation (DoS) of greater than 1.00.
- The intersection of Narellan Road, Gilchrist Drive and Blaxland Road would operate at an unsatisfactory level of service (LoS F) for both the AM and PM peak hours.
- The intersection of Gilchrist Drive and Kellicar Road would operate at a satisfactory LoS D in the PM peak. However with the DoS being 1.00 it indicates that this intersection is at capacity.

7.3.5 Future with development scenario – ultimate (2026)

The impacts of ultimate development with overall dwelling numbers of 1,500 and 1,700 dwellings with three accesses (north, central and south) constructed connecting with Appin Road are detailed in Table 7.6.

Table 7.6 Summary of intersection performance – Future Year with Development 2026 – 95% external

Site ID	Intersection	No of dwellings	Peak period	Degree of Saturation	Average Delay (s)	Level of Service	95th Percentile queue (m)
I-01	Appin Road and Appin Road (Church Street)	1,500	AM	0.38	14	A	4
			PM	0.40	13	A	4
		1,700	AM	0.38	14	A	4
			PM	0.40	13	A	4
I-02	Appin Road, Copperfield Drive and Kellerman Drive	1,500	AM	1.64	593	F	3434
			PM	1.79	726	F	4226
		1,700	AM	1.75	691	F	3995
			PM	1.91	834	F	4808
I-03	Appin Road, Fitzgibbon Lane and Kellerman Drive	1,500	AM	1.83	346	F	2820
			PM	0.98	48	D	757
		1,700	AM	1.86	401	F	3234
			PM	1.03	61	E	969
I-04	Appin Road and Woodland Road	1,500	AM	0.92	31	C	314
			PM	0.96	26	B	558
		1,700	AM	0.95	37	C	438
			PM	0.99	32	C	678
I-05	Appin Road and St Johns Road	1,500	AM	0.95	33	C	269
			PM	1.08	79	F	1047
		1,700	AM	0.99	41	C	366
			PM	1.13	99	F	1193
I-06	Appin Road and Therry Road	1,500	AM	1.03	53	D	787
			PM	0.90	31	C	265
		1,700	AM	1.04	56	D	836
			PM	0.90	31	C	265
I-07	Appin Road, Narellan Road, Oxley Street and The Parkway EXISTING LAYOUT	1,500	AM	1.14	118	F	927
			PM	1.37	91	F	734
		1,700	AM	1.16	126	F	972
			PM	1.37	101	F	779

Site ID	Intersection	No of dwellings	Peak period	Degree of Saturation	Average Delay (s)	Level of Service	95th Percentile queue (m)
I-07	Appin Road, Narellan Road, Oxley Street and The Parkway RMS UPGRADED LAYOUT	1,500	AM	1.07	80	F	748
			PM	1.11	54	D	379
		1,700	AM	1.12	84	F	755
			PM	1.12	55	D	434
I-08	Narellan Road and Kellicar Road	1,500	AM	1.00	55	D	335
			PM	1.12	126	F	502
		1,700	AM	1.00	56	D	352
			PM	1.13	129	F	507
I-09	Narellan Road, Gilchrist Drive and Blaxland Road EXISTING LAYOUT	1,500	AM	1.23	162	F	823
			PM	1.38	242	F	1146
		1,700	AM	1.21	165	F	866
			PM	1.38	244	F	1153
I-09	Narellan Road, Gilchrist Drive and Blaxland Road RMS UPGRADED LAYOUT	1,500	AM	1.31	166	F	1168
			PM	1.20	137	F	513
		1,700	AM	1.31	167	F	1173
			PM	1.18	137	F	518
I-10	Oxley Street and Camden Road	1,500	AM	0.83	7	A	188
			PM	0.68	13	A	196
		1,700	AM	0.84	7	A	196
			PM	0.69	13	A	200
I-11	Therry Road, Central Road and Woodhouse Drive	1,500	AM	0.68	21	B	42
			PM	0.51	18	B	29
		1,700	AM	0.68	22	B	42
			PM	0.51	18	B	29
I-12	Therry Road and Gilchrist Drive	1,500	AM	0.68	20	B	44
			PM	0.64	18	B	42
		1,700	AM	0.69	21	B	45
			PM	0.65	18	B	43
I-13	Gilchrist Drive and Kellicar Road	1,500	AM	0.89	40	C	210
			PM	1.00	49	D	266
		1,700	AM	0.89	40	C	217
			PM	1.00	50	D	266

Site ID	Intersection	No of dwellings	Peak period	Degree of Saturation	Average Delay (s)	Level of Service	95th Percentile queue (m)
I-0A	Appin Road and Proposed Development North Access	1,500	AM	0.56	20	B	30
			PM	0.62	14	A	53
		1,700	AM	0.56	21	B	35
			PM	0.66	14	B	61
I-0B	Appin Road and Proposed Development Central Access	1,500	AM	0.79	34	C	106
			PM	0.53	16	B	44
		1,700	AM	0.83	34	C	118
			PM	0.57	16	B	52
I-0C	Appin Road and Proposed Development South Access	1,500	AM	0.71	20	B	69
			PM	0.65	15	B	53
		1,700	AM	0.71	20	B	70
			PM	0.66	15	B	53

Analysis of the intersection performance indicates that the following intersections have capacity to accommodate the future traffic volumes generated by the Mount Gilead development in 2026:

- Appin Road and Church Street (I-01)
- Appin Road and Woodland Road (I-04)
- Appin Road and Therry Road (I-06)
- Oxley Street and Camden Road (I-10)
- Therry Road, Central Road and Woodhouse Drive (I-11)
- Therry Road and Gilchrist Drive, Ambarvale (I-12)
- Gilchrist Drive and Kellicar Road, Ambarvale (I-13).

The following intersections would experience capacity constraints from traffic generated by the Mount Gilead development in 2026:

- Appin Road, Copperfield Drive and Kellerman Drive, Rosemeadow (I-02)
- Appin Road and St Johns Road, Bradbury (I-05)
- Appin Road, Narellan Road, Oxley Street and The Parkway, Campbelltown (I-07).

The following intersections would experience capacity constraints from background traffic growth alone in 2026:

- Appin Road, Fitzgibbon Lane and Kellerman Drive, Rosemeadow (I-03)
- Narellan Road and Kellicar Road, Campbelltown (I-08)
- Narellan Road, Gilchrist Drive and Blaxland Road, Campbelltown (I-09).

The impacts of ultimate development with overall dwelling numbers of 1,500 and 1,700 dwellings are discussed further below.

Six intersections would operate at capacity and experience long delays and queuing in either the AM or PM peak or both. Analysis of intersection performance indicates:

- The intersection of Appin Road, Copperfield Drive and Kellerman Drive would operate at an unsatisfactory level of service (LoS F) for both the AM and PM peak hours.
- The intersection of Appin Road, Fitzgibbon Lane and Kellerman Drive would operate at unsatisfactory level of service (LoS F) with DoS over 1.00 in the AM peak. In the PM peak it would operate at LoS D with 1,500 dwellings and LoS E with 1,700 dwellings.
- The intersection of Appin Road and St Johns Road would perform at or near capacity with DoS at or above 1.00 in the PM peak.
- The intersection of Appin Road, Narellan Road, Oxley Street and The Parkway would operate at an unsatisfactory level of service (LoS F) during both the AM and PM peaks with the existing layout. With the proposed RMS upgraded layout the intersection operates at a LoS F in the AM peak and LoS D in the PM peak. The DoS in both the AM and PM peaks is greater than 1.00 for both layouts.
- The intersection of Narellan Road and Kellicar Road would perform unsatisfactorily at a LoS D to LoS F during the AM and PM peaks with DoS greater than 1.00.
- The intersection of Narellan Road, Gilchrist Drive and Blaxland Road would operate at an unsatisfactory level of service (LoS F) for both the AM and PM peak hours with both the existing and proposed RMS upgraded layouts.

Based upon the above results, it is apparent that additional capacity will be required for a number of intersections in order for both the traffic generated by the proposed development traffic and that of background traffic growth to be accommodated.

With 95% external traffic generation

Traffic generated by the development of **1,500 dwellings** is expected to increase total intersection traffic volumes when compared to the 2026 base traffic volumes by:

- 1,137 vehicles, which equates to 62.7% (of total intersection traffic) in the 2026 AM peak and 55.8% in the 2026 PM peak for the Appin Road, Copperfield Drive and Kellerman Drive intersection
- 1,126 vehicles, which equates to 38.8% (of total intersection traffic) in the 2026 AM peak and 41.6% in the 2026 PM peak for the Appin Road, Fitzgibbon Lane and Kellerman Drive intersection
- 1,063 vehicles, which equates to 34.9% (of total intersection traffic) in the 2026 AM peak and 34.2% in the 2026 PM peak for the Appin Road and Woodland Road intersection
- 1,001 vehicles, which equates to 28.6% (of total intersection traffic) in the 2026 AM peak and 28.2% in the 2026 PM peak for the Appin Road and St Johns Road intersection
- 850 vehicles, which equates to 22.6% (of total intersection traffic) in the 2026 AM peak and 20.9% in the 2026 PM peak for the Appin Road and Therry Road intersection
- 637 vehicles, which equates to 14.4% (of total intersection traffic) in the 2026 AM peak and 13% in the 2026 PM peak for the Appin Road, Narellan Road, Oxley Street and The Parkway intersection
- 186 vehicles, which equates to 3.7% (of total intersection traffic) in the 2026 AM peak and 3.3% in the 2026 PM peak for the Narellan Road and Kellicar Road intersection
- 139 vehicles, which equates to 1.9% (of total intersection traffic) in the 2026 AM peak and 1.8% in the 2026 PM peak for the Narellan Road, Gilchrist Drive and Blaxland Road intersection.

Traffic generated by the development of **1,700 dwellings** is expected to increase total intersection traffic volumes when compared to the 2026 base traffic volumes by:

- 1,342 vehicles, which equates to 76.1% (of total intersection traffic) in the 2026 AM peak and 65.9% in the 2026 PM peak for the Appin Road, Copperfield Drive and Kellerman Drive intersection
- 1,271 vehicles, which equates to 44.9% (of total intersection traffic) in the 2026 AM peak and 46.9% in the 2026 PM peak for the Appin Road, Fitzgibbon Lane and Kellerman Drive intersection
- 1,202 vehicles, which equates to 39.5% (of total intersection traffic) in the 2026 AM peak and 38.7% in the 2026 PM peak for the Appin Road and Woodland Road intersection
- 1,131 vehicles, which equates to 32.4% (of total intersection traffic) in the 2026 AM peak and 31.8% in the 2026 PM peak for the Appin Road and St Johns Road intersection
- 960 vehicles, which equates to 25.5% (of total intersection traffic) in the 2026 AM peak and 23.6% in the 2026 PM peak for the Appin Road and Therry Road intersection
- 720 vehicles, which equates to 16.2% (of total intersection traffic) in the 2026 AM peak and 14.7% in the 2026 PM peak for the Appin Road, Narellan Road, Oxley Street and The Parkway intersection
- 209 vehicles, which equates to 4.2% (of total intersection traffic) in the 2026 AM peak and 3.8% in the 2026 PM peak for the Narellan Road and Kellicar Road intersection
- 157 vehicles, which equates to 2.1% (of total intersection traffic) in the 2026 AM peak and 2.0% in the 2026 PM peak for the Narellan Road, Gilchrist Drive and Blaxland Road intersection.

7.4 Mid-block capacity assessment

A mid-block capacity assessment has been completed on Appin Road. The mid-block capacity has been based on the RMS Guide to Traffic Generating Developments and Austroads Guide to Traffic Management Part 3: Traffic Studies and Analysis guidelines. Both these guidelines state that a mid-block lane capacity of 1,400 vehicles per lane per hour can be achieved under normal urban interrupted flow conditions.

Section 5.2.1 of the Austroads Guide to Traffic Management Part 3: Traffic Studies and Analysis states that mid-block traffic volumes may increase to 1,200 to 1,400 vehicles per lane per hour on any approach road when the following conditions exist or can be implemented:

- adequate flaring at major upstream intersections
- uninterrupted flow from a wider carriageway upstream of an intersection approach and flowing at capacity
- control or absence of crossing or entering traffic at minor intersections by major road priority controls
- control or absence of parking
- control or absence of right turns by banning turning at difficult intersections
- high volume flows of traffic from upstream intersections during more than one phase of a signal cycle
- good co-ordination of traffic signals along the route.

The RMS has endorsed the use of 1,400 vehicles per lane per hour for this study.

Mid-block capacities and Levels of Service based on the number of lanes in one direction are shown in Table 7.7.

Table 7.7 Urban road peak hour flows per direction

Level of Service	One lane (veh/hr)	Two lane (veh/hr)
A	200	900
B	380	1,400
C	600	1,800
D	900	2,200
E	1,400	2,800

Source: RMS Guide to Traffic Generating Developments, 2002

The Appin Road mid-block capacity assessment is shown in Table 7.8 (for 95% external trip generation) for several dwelling densities utilising the existing road and proposed road upgrades.

Table 7.8 Mid-block capacity assessment on Appin Road – 95% external trip generation

Scenario	Road section – Appin Road between	Peak hour	No. of lanes in each direction	Available capacity (veh/hr)	Existing layout				Proposed layout							
					Peak hour volume (veh/hr)		V/C		No. of lanes in each direction		Available capacity (veh/hr)		Peak hour volume (veh/hr)		V/C	
					NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
Year 2021 – Do Nothing	Church Street and Copperfield Drive	AM	1	1400	766	427	0.55	0.31	1	1	1400	1400	766	427	0.55	0.31
		PM	1	1400	461	1004	0.33	0.72	1	1	1400	1400	461	1004	0.33	0.72
	Copperfield Drive and Fitzgibbon Lane	AM	1	1400	965	391	0.69	0.28	1	1	1400	1400	965	391	0.69	0.28
		PM	1	1400	476	999	0.34	0.71	1	1	1400	1400	476	999	0.34	0.71
	Fitzgibbon Lane and Woodland Road	AM	2	2800	1562	778	0.56	0.28	2	2	2800	2800	1562	778	0.56	0.28
		PM	2	2800	817	1524	0.29	0.54	2	2	2800	2800	817	1524	0.29	0.54
	Woodland Road and St Johns Road	AM	2	2800	1852	826	0.66	0.30	2	2	2800	2800	1852	826	0.66	0.30
		PM	2	2800	926	1802	0.33	0.64	2	2	2800	2800	926	1802	0.33	0.64
	St Johns Road and Therry Road	AM	2	2800	1975	827	0.71	0.30	2	2	2800	2800	1975	827	0.71	0.30
		PM	2	2800	1058	2003	0.38	0.72	2	2	2800	2800	1058	2003	0.38	0.72
Year 2021 – 850 dwellings	Southern Access and Central Access	AM	1	1400	1143	533	0.82	0.38	1	2	1400	2800	1143	533	0.82	0.19
		PM	1	1400	570	1378	0.41	0.98	1	2	1400	2800	570	1378	0.41	0.49
	Central Access and Copperfield Drive	AM	1	1400	1269	567	0.91	0.41	2	2	2800	2800	1269	567	0.45	0.20
		PM	1	1400	594	1535	0.42	1.10	2	2	2800	2800	594	1535	0.21	0.55
	Copperfield Drive and Fitzgibbon Lane	AM	1	1400	1441	524	1.03	0.37	2	2	2800	2800	1441	524	0.51	0.19
		PM	1	1400	602	1502	0.43	1.07	2	2	2800	2800	602	1502	0.22	0.54
	Fitzgibbon Lane and Woodland Road	AM	2	2800	2009	904	0.72	0.32	2	2	2800	2800	2009	904	0.72	0.32
		PM	2	2800	935	2000	0.33	0.71	2	2	2800	2800	935	2000	0.33	0.71
	Woodland Road and St Johns Road	AM	2	2800	2232	944	0.80	0.34	2	2	2800	2800	2232	944	0.80	0.34
		PM	2	2800	1026	2249	0.37	0.80	2	2	2800	2800	1026	2249	0.37	0.80
	St Johns Road and Therry Road	AM	2	2800	2355	927	0.84	0.33	2	2	2800	2800	2355	927	0.84	0.33
		PM	2	2800	1158	2383	0.41	0.85	2	2	2800	2800	1158	2383	0.41	0.85
Year 2026 – Do Nothing	Church Street and Copperfield Drive	AM	1	1400	813	477	0.58	0.34	1	1	1400	1400	813	477	0.58	0.34
		PM	1	1400	510	1066	0.36	0.76	1	1	1400	1400	510	1066	0.36	0.76
	Copperfield Drive and Fitzgibbon Lane	AM	1	1400	1026	439	0.73	0.31	1	1	1400	1400	1026	439	0.73	0.31
		PM	1	1400	529	1060	0.38	0.76	1	1	1400	1400	529	1060	0.38	0.76
	Fitzgibbon Lane and Woodland Road	AM	2	2800	1660	850	0.59	0.30	2	2	2800	2800	1660	850	0.59	0.30
		PM	2	2800	905	1612	0.32	0.58	2	2	2800	2800	905	1612	0.32	0.58
	Woodland Road and St Johns Road	AM	2	2800	1966	930	0.70	0.33	2	2	2800	2800	1966	930	0.70	0.33
		PM	2	2800	1024	1910	0.37	0.68	2	2	2800	2800	1024	1910	0.37	0.68
	St Johns Road and Therry Road	AM	2	2800	2094	924	0.75	0.33	2	2	2800	2800	2094	924	0.75	0.33
		PM	2	2800	1160	2125	0.41	0.76	2	2	2800	2800	1160	2125	0.41	0.76

Scenario	Road section – Appin Road between	Peak hour	No. of lanes in each direction	Available capacity (veh/hr)	Existing layout				Proposed layout							
					Peak hour volume (veh/hr)		V/C		No. of lanes in each direction		Available capacity (veh/hr)		Peak hour volume (veh/hr)		V/C	
					NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
Year 2026 – 1500 dwellings	Southern Access and Central Access	AM	1	1400	1248	617	0.89	0.44	1	2	1400	2800	1248	617	0.89	0.22
		PM	1	1400	655	1496	0.47	1.07	1	2	1400	2800	655	1496	0.47	0.53
	Central Access and Northern Access	AM	1	1400	1475	668	1.05	0.48	2	2	1400	2800	1475	668	0.53	0.24
		PM	1	1400	701	1728	0.50	1.23	2	2	1400	2800	701	1728	0.25	0.62
	Northern Access and Copperfield Drive	AM	1	1400	1752	728	1.25	0.52	2	2	2800	2800	1752	728	0.63	0.26
		PM	1	1400	759	2006	0.54	1.43	2	2	2800	2800	759	2006	0.27	0.72
	Copperfield Drive and Fitzgibbon Lane	AM	1	1400	1916	675	1.37	0.48	2	2	2800	2800	1916	675	0.68	0.24
		PM	1	1400	765	1950	0.55	1.39	2	2	2800	2800	765	1950	0.27	0.70
	Fitzgibbon Lane and Woodland Road	AM	2	2800	2500	1073	0.89	0.38	2	2	2800	2800	2500	1073	0.89	0.38
		PM	2	2800	1128	2453	0.40	0.88	2	2	2800	2800	1128	2453	0.40	0.88
	Woodland Road and St Johns Road	AM	2	2800	2757	1140	0.98	0.41	2	2	2800	2800	2757	1140	0.98	0.41
		PM	2	2800	1234	2701	0.44	0.96	2	2	2800	2800	1234	2701	0.44	0.96
	St Johns Road and Therry Road	AM	2	2800	2766	1103	0.99	0.39	2	2	2800	2800	2766	1103	0.99	0.39
		PM	2	2800	1338	2798	0.48	1.00	2	2	2800	2800	1338	2798	0.48	1.00
Year 2026 – 1700 dwellings	Southern Access and Central Access	AM	1	1400	1303	633	0.93	0.45	1	2	1400	2800	1303	633	0.93	0.23
		PM	1	1400	671	1551	0.48	1.11	1	2	1400	2800	671	1551	0.48	0.55
	Central Access and Northern Access	AM	1	1400	1561	689	1.12	0.49	2	2	2800	2800	1561	689	0.56	0.25
		PM	1	1400	722	1814	0.52	1.30	2	2	2800	2800	722	1814	0.26	0.65
	Northern Access and Copperfield Drive	AM	1	1400	1875	757	1.34	0.54	2	2	2800	2800	1875	757	0.67	0.27
		PM	1	1400	790	2129	0.56	1.52	2	2	2800	2800	790	2129	0.28	0.76
	Copperfield Drive and Fitzgibbon Lane	AM	1	1400	2032	704	1.45	0.50	2	2	2800	2800	2032	704	0.73	0.25
		PM	1	1400	794	2066	0.57	1.48	2	2	2800	2800	794	2066	0.28	0.74
	Fitzgibbon Lane and Woodland Road	AM	2	2800	2611	1100	0.93	0.39	2	2	2800	2800	2611	1100	0.93	0.39
		PM	2	2800	1156	2562	0.41	0.92	2	2	2800	2800	1156	2562	0.41	0.92
	Woodland Road and St Johns Road	AM	2	2800	2861	1166	1.02	0.42	2	2	2800	2800	2861	1166	1.02	0.42
		PM	2	2800	1260	2805	0.45	1.00	2	2	2800	2800	1260	2805	0.45	1.00
	St Johns Road and Therry Road	AM	2	2800	2854	1125	1.02	0.40	2	2	2800	2800	2854	1125	1.02	0.40
		PM	2	2800	1360	2886	0.49	1.03	2	2	2800	2800	1360	2886	0.49	1.03

A summary of Table 7.8 indicates that:

In 2021 with 850 dwellings

- Appin Road between the Southern Access and Central Access would need to be upgraded to two lanes in the southbound direction
- Appin Road between the Central Access and Copperfield Drive would need to be upgraded to two lanes in both directions
- Appin Road between Copperfield Drive and Fitzgibbon Lane would need to be upgraded to two lanes in both directions.

In 2026 with 1,500 dwellings

- The v/c ratio on Appin Road between Woodland Road and Therry Road approaches 1.00.

In 2026 with 1,700 dwellings

- The v/c ratio on Appin Road between Woodland Road and Therry Road reaches 1.00.

8. Mitigation measures

This traffic assessment indicates that several mitigation measures will need to be implemented to enable a number of intersections to continue operating within capacity. Measures for public transport, pedestrian and cycle facility are also required. The suggested strategies and necessary infrastructure upgrades, required as a result of the development are discussed in sections 8.1 and 8.2.

8.1 Suggested strategies

The following strategies are proposed to increase public and active transport mode shares within the development in the aim of reducing the number of vehicle trips made to the external road network.

8.1.1 Bus services

It is proposed that a bus service be provided to, from and within the Mount Gilead development utilising the key collector internal roads to loop around the site with two access intersections provided on Appin Road. Currently, there are two existing bus services (route no's 887 and 888) which are operated by Busways that service the neighbouring residential area of Rosemeadow to the north. Preliminary discussions with Busways have been undertaken as part of the stakeholder consultation process.

The implementation of a bus service through the development would assist in reducing the extent of traffic generated by the proposed development. Desirably, the route would operate on the key collector roads with the aim being that all residences be located within a five minute walk or 400 m walking distance to the nearest bus stop.

8.1.2 Walking and cycle network

The internal road network will be designed to accommodate and promote active transport. Footpaths, shared paths or even on-road cycle facilities will be incorporated into the design with links to the external road via Appin Road or via local road links to the neighbouring suburb of Rosemeadow. Some of the following measures would further assist in encouraging residents to utilise such facilities:

- provision and promotion of walking and cycling maps
- implementing signage for walkers and cyclists on the network
- cycle training including the use of the Campbelltown City Council's Bicycle Education and Road Safety Centre which provides education for cycling and pedestrian safety.

8.1.3 Car share schemes

Dedicated car share parking spaces could be implemented at suitable accessible locations within the development. This will reduce car dependency per dwelling with the aim of reducing vehicle trip lengths and travel times. Residents could join the car sharing scheme and reserve vehicles online or by telephone. A car sharing scheme addresses parking problems, reduces traffic generation, provides a low cost alternative to residents who would only use a car occasionally or work from home.

8.1.4 Residential travel plan

A residential travel plan is a package of measures designed to reduce car use from the development by supporting alternative forms of transport and therefore reduce car trips or the need to travel in the first place.

Residential travel plans could be implemented to help deliver accessible, sustainable communities and offer clear benefits including:

- reduced traffic generation
- wider range of travel choice
- improved lifestyle by providing active transport options/initiatives
- creates vibrant and active local community.

8.2 Intersection upgrades required due to development traffic

The following intersection upgrades are required in the future to accommodate Mount Gilead development traffic.

8.2.1 Year 2021 upgraded intersection layout and performance

Appin Road, Copperfield Drive and Kellerman Drive

This intersection would require the following upgrades:

- two lane circulating roundabout for Appin Road through movements
- two full length lanes on Appin Road approach and departure to the roundabout.

This indicative intersection upgrade layout is described in Figure 8.1.

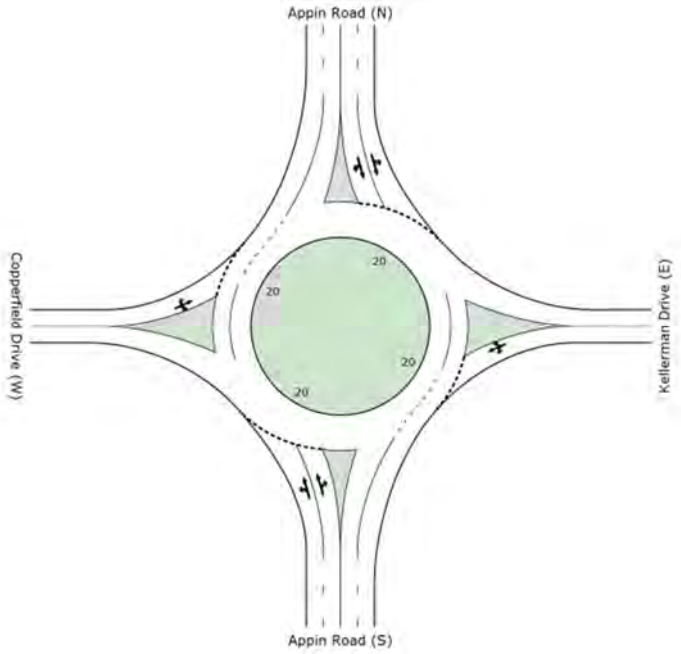


Figure 8.1 Appin Road, Copperfield Drive and Kellerman Drive upgraded intersection layout

Implementation of this intersection layout will improve the intersection performance to acceptable levels of service, vehicle delay and queue lengths as show in Table 8.1.

Table 8.1 Summary of intersection performance in 2021 – with upgraded layout

Site ID	Intersection	No of dwellings	Peak period	Degree of Saturation	Average Delay (s)	Level of Service	95th Percentile queue (m)
I-02	Appin Road, Copperfield Drive and Kellerman Drive	850	AM	0.56	20	B	35
			PM	0.63	22	B	42

Appin Road, Fitzgibbon Lane and Kellerman Drive

- one additional right turn lane from Appin Road onto Fitzgibbon Lane
- shared through and left turn kerbside slip lane on Appin Road in the northbound direction.

An indicative intersection upgrade layout incorporating these capacity improvements is described in Figure 8.2.

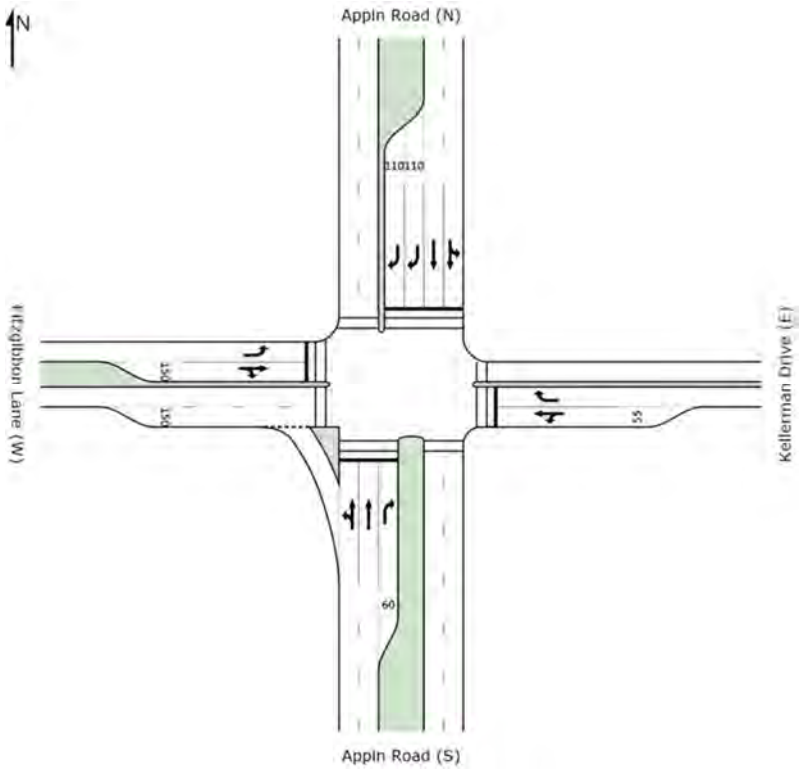


Figure 8.2 Appin Road, Fitzgibbon Lane and Kellerman Drive upgraded intersection layout

The implementation of this intersection layout will improve the intersection performance to acceptable levels of service, vehicle delay and queue lengths as show in Table 8.2.

Table 8.2 Summary of intersection performance in 2021 – with upgraded layout

Site ID	Intersection	No of dwellings	Peak period	Degree of Saturation	Average Delay (s)	Level of Service	95th Percentile queue (m)
I-03	Appin Road, Fitzgibbon Lane and Kellerman Drive	850	AM	0.91	54	D	381
			PM	0.67	29	C	249

8.2.2 Year 2026 upgraded intersection layout and performance

Appin Road, Copperfield Drive and Kellerman Drive

This intersection would require the following upgrades in addition to the year 2021 upgrades for the 1,500 and 1,700 dwelling scenarios.

- one additional short lane on the Kellerman Drive approach
- one additional short departure lane on Copperfield Drive.

This indicative intersection upgrade layout is shown in Figure 8.3.

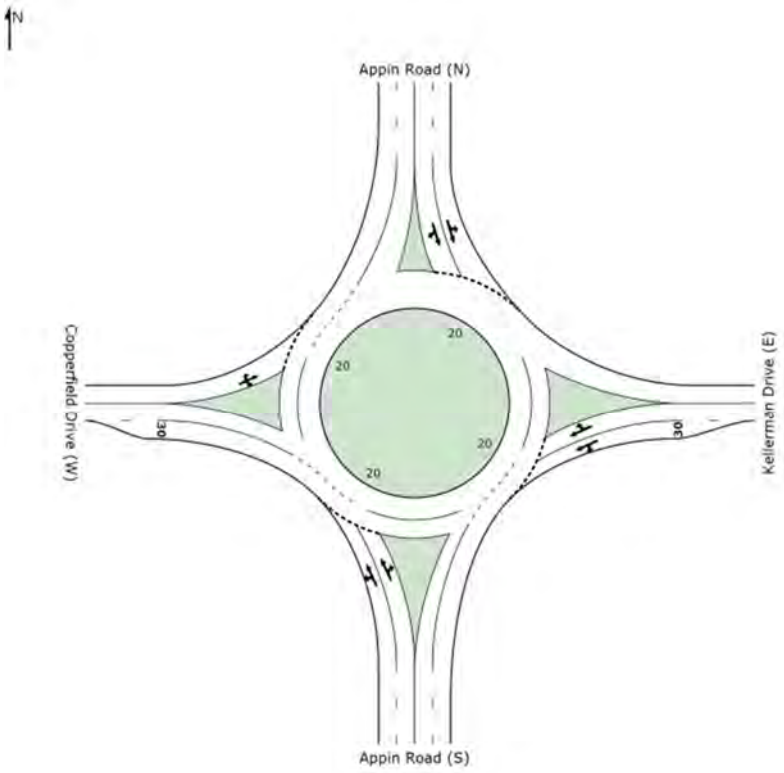


Figure 8.3 Appin Road, Copperfield Drive and Kellerman Drive upgraded intersection layout

The implementation of the above upgraded intersection layout will improve the intersection performance to acceptable levels of service, vehicle delay and queue lengths not impacting on adjacent intersections as shown in Table 8.3.

Table 8.3 Summary of intersection performance in 2026 – with upgraded layout

Site ID	Intersection	No of dwellings	Peak period	Degree of Saturation	Average Delay (s)	Level of Service	95th Percentile queue (m)
I-02	Appin Road, Copperfield Drive and Kellerman Drive	1,500	AM	0.79	32	C	72
			PM	0.84	28	B	109
		1,700	AM	0.91	51	D	93
			PM	0.89	37	C	148

Appin Road, Fitzgibbon Lane and Kellerman Drive

- One short shared left and through lane of 130 m on approach and one short 100 m lane on departure of the intersection on Appin Road in the northbound direction.

This indicative intersection upgrade layout is described in Figure 8.4.

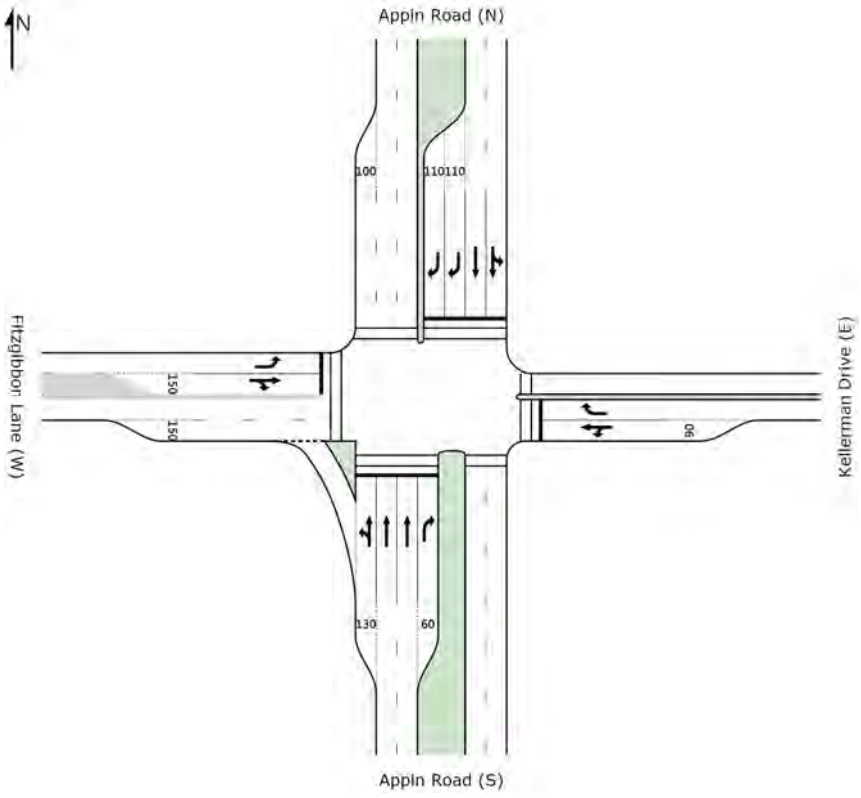


Figure 8.4 Appin Road, Fitzgibbon Lane and Kellerman Drive upgraded intersection layout

The implementation of the above upgraded intersection layout as described above will improve the intersection performance to acceptable levels of service, vehicle delay and queue lengths not impacting on adjacent intersections as shown in Table 8.4.

Table 8.4 Summary of intersection performance in 2026 – with upgraded layout

Site ID	Intersection	No of dwellings	Peak period	Degree of Saturation	Average Delay (s)	Level of Service	95th Percentile queue (m)
I-03	Appin Road, Fitzgibbon Lane and Kellerman Drive	1,500	AM	0.97	51	D	429
			PM	0.88	32	C	427
		1,700	AM	1.00	55	D	497
			PM	0.92	38	C	540

Appin Road and St Johns Road

Upgrade layout 1

- additional short dedicated right turn lane on St Johns Road of 65 m length
- dedicated left turn slip lane on St Johns Road of 65 m length.

This intersection upgrade layout is shown in Figure 8.5 for indicative purposes.

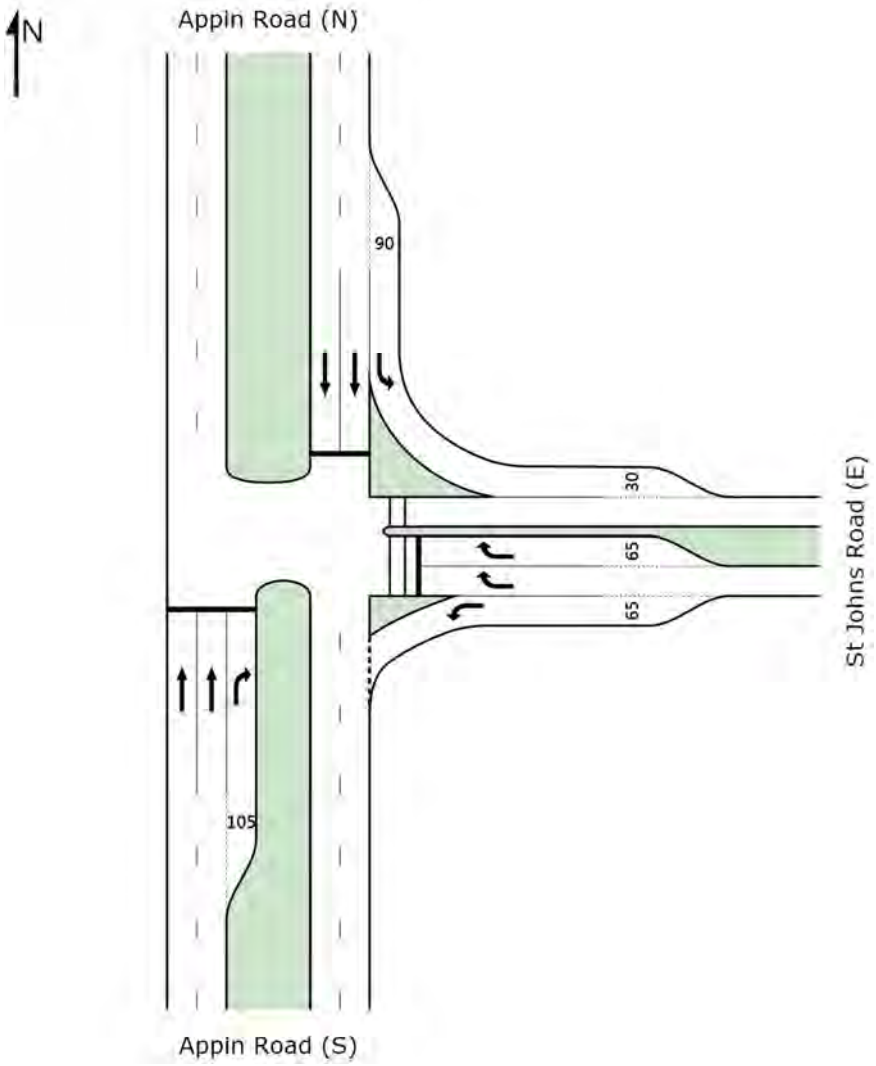


Figure 8.5 Appin Road and St Johns Road upgraded intersection layout 1

Upgrade layout 2

- one additional short approach lane (90 m length) and departure lane (90 m length) on Appin Road in the southbound travel direction
- additional short dedicated right turn lane on St Johns Road of 65 m length
- dedicated left turn slip lane on St Johns Road of 65 m length.

This intersection upgrade layout is indicatively described in Figure 8.6.

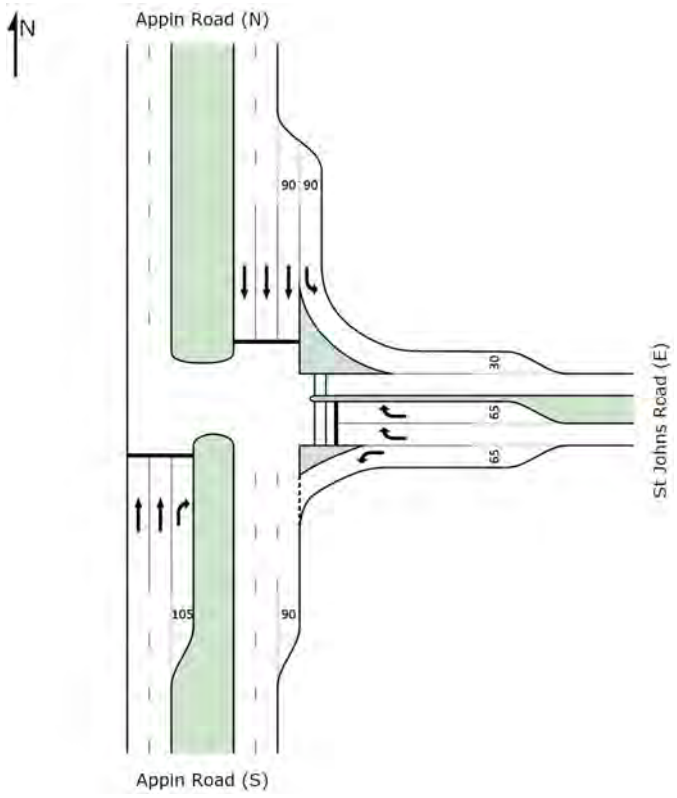


Figure 8.6 Appin Road and St Johns Road upgraded intersection layout 2

The above upgraded intersection layout will improve the intersection performance to acceptable levels of service, vehicle delay and queue lengths not impacting on adjacent intersections as shown in Table 8.5.

Table 8.5 Summary of intersection performance in 2026 – with upgraded layout

Site ID	Intersection	No of dwellings	Peak period	Degree of Saturation	Average Delay (s)	Level of Service	95th Percentile queue (m)
I-05	Appin Road and St Johns Road	1,500 (Layout 1)	AM	0.90	27	B	243
			PM	1.00	39	C	799
		1,700 (Layout 1)	AM	0.93	28	B	259
			PM	1.03	54	D	953
		1,500 (Layout 2)	AM	0.86	26	B	195
			PM	0.85	15	B	255
		1,700 (Layout 2)	AM	0.89	26	B	205
			PM	0.96	25	B	519

8.3 Mid-block road upgrades required due to development traffic

The following mid-block road upgrades are required in the future to accommodate Mount Gilead development traffic.

8.3.1 Year 2021 upgrades

Appin Road between the Southern Access and Central Access:

- be upgraded to two lanes in the southbound direction

Appin Road between the Central Access and Copperfield Drive:

- be upgraded to two lanes in both directions

Appin Road between Copperfield Drive and Fitzgibbon Lane:

- be upgraded to two lanes in both directions.

9. Stakeholder consultation

9.1 Campbelltown City Council (CCC)

Parsons Brinckerhoff has consulted with Jeff Lawrence from Campbelltown City Council in December 2012/ January 2013 regarding the scope requirements for this study. The project team, through the project manager, has been in constant liaison with Council regarding the proposed Mount Gilead development.

The project team met with representatives from Council on Thursday 4 July 2013 to discuss the proposed project and the draft traffic study report.

9.2 Transport for NSW (TfNSW)

The project team met with representatives from TfNSW (and RMS) on Thursday 29 August 2013 to discuss the proposed project and the draft traffic study report.

A second meeting was held with TfNSW (and RMS) on Wednesday 18 September 2013 to discuss the draft traffic study traffic modelling assumptions, traffic modelling datasets and proposed development intersection layouts.

A third meeting was held with TfNSW (and RMS) on Tuesday 19 November 2013 to discuss the final traffic study reporting, infrastructure upgrade requirements and the Voluntary Planning Agreement (VPA) process.

A fourth meeting was held with TfNSW (and RMS) on Thursday 27 March 2014 to discuss the finalisation of traffic modelling and reporting, infrastructure upgrades and the Voluntary Planning Agreement (VPA) process.

A fifth meeting was held with TfNSW (and RMS) on Monday 14 April 2014 to discuss the finalisation of traffic modelling and reporting, infrastructure upgrades and the Voluntary Planning Agreement (VPA) process.

9.3 Roads and Maritime Services (RMS)

The project team met with representatives from RMS on Tuesday 23 April 2013 to discuss the proposed project and to confirm and agree to the design and traffic assessment requirements for the study.

A second meeting was held with RMS on Tuesday 25 June 2013 to discuss the study findings, proposed development intersection layouts and the performance of intersections along Appin Road into the future.

A third meeting was held with RMS (and TfNSW) on Thursday 29 August 2013 to discuss the proposed project and the draft traffic study report.

A fourth meeting was held with RMS (and TfNSW) on Wednesday 18 September 2013 to discuss the draft traffic study traffic modelling assumptions, traffic modelling datasets and proposed development intersection layouts.

A fifth meeting was held with RMS (and TfNSW) on Tuesday 19 November 2013 to discuss the final traffic study reporting, infrastructure upgrade requirements and the Voluntary Planning Agreement (VPA) process.

A sixth meeting was held with RMS (and TfNSW) on Thursday 27 March 2014 to discuss the finalisation of traffic modelling and reporting, infrastructure upgrades and the Voluntary Planning Agreement (VPA) process.

A seventh meeting was held with RMS (and TfNSW) on Monday 14 April 2014 to discuss the finalisation of traffic modelling and reporting, infrastructure upgrades and the Voluntary Planning Agreement (VPA) process.

9.4 Wollondilly Shire Council (WCC)

A phone message was left with David Smith from Wollondilly Shire Council on Tuesday 18 June 2013. The primary purpose of this message was to inform Council of the proposed residential development at Mount Gilead.

9.5 Busways

Parsons Brinckerhoff consulted with Andrew Glass and Dave Davies from Busways on Monday 17 June 2013 and discussed the requirements for the provision of a bus service within the Mount Gilead development.

Further discussion was held on Tuesday 25 June 2013.

10. Conclusion

This traffic, transport and access study confirms that the proposed Mount Gilead Rezoning residential development will further contribute traffic to intersections along Appin Road into the future. Several of the intersections are currently operating at or near capacity in 2013 and will further deteriorate purely on the basis of background traffic growth into 2021 and 2026.

Several intersections are expected to operate near, at or over capacity due to the addition of Mount Gilead development traffic including the intersections of:

- Appin Road, Kellerman Drive and Copperfield Drive
- Appin Road and St Johns Road
- Appin Road, Oxley Street, Narellan Road and The Parkway.

Intersection upgrades are proposed at these intersections in both 2021 and 2026 to ameliorate the impacts and to improve intersection performance to acceptable Levels of Service. The indicative timing of staged intersection upgrades is as follows:

Year 2021

Appin Road, Copperfield Drive and Kellerman Drive

- two lane circulating roundabout for Appin Road through movements
- two full length lanes on Appin Road approach and departure to the roundabout.

Appin Road, Fitzgibbon Lane and Kellerman Drive

- one additional right turn lane from Appin Road onto Fitzgibbon Lane
- shared through and left turn kerbside slip lane on Appin Road in the northbound direction.

Year 2026

Appin Road, Copperfield Drive and Kellerman Drive

- one additional short lane on the Kellerman Drive approach
- one additional short departure lane on Copperfield Drive.

Appin Road, Fitzgibbon Lane and Kellerman Drive

- One short shared left and through lane of 130 m on approach and one short 100 m lane on departure of the intersection on Appin Road in the northbound direction.

Appin Road and St Johns Road

Upgrade layout 1

- additional short dedicated right turn lane on St Johns Road of 65 m length
- dedicated left turn slip lane on St Johns Road of 65 m length.

Upgrade layout 2

- one additional short approach lane (90 m length) and departure lane (90 m length) on Appin Road in the southbound travel direction
- additional short dedicated right turn lane on St Johns Road of 65 m length
- dedicated left turn slip lane on St Johns Road of 65 m length.

The mid-block capacity analyses suggests that Appin Road will need to be upgraded to two lanes in both directions between the Southern Access of the development site to the Appin Road, Kellerman Drive and Fitzgibbon Lane intersection. Depending on the number of development dwellings proposed, the section of Appin Road between Woodland Road and Therry Road would operate near, at or above mid-block capacity. Proposed intersection upgrades including intersection flaring in the form of additional short approach and departure lanes would assist in increasing lane capacities.

The indicative timing of road capacity upgrades is as follows:

Year 2021

Appin Road between the Southern Access and Central Access:

- be upgraded to two lanes in the southbound direction

Appin Road between the Central Access and Copperfield Drive:

- be upgraded to two lanes in both directions

Appin Road between Copperfield Drive and Fitzgibbon Lane:

- be upgraded to two lanes in both directions.

Several strategies have been suggested to further reduce trip generation from the development including the promotion of public and active transport.

Appendix A

RMS crash data

PARSONS BRINCKERHOFF

Detailed Crash Report

NOTES: 5273 - Appin Rd - Narellan Rd to Church St inc 10m at intersections - July07 to June12

Crash No.	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																					S F
Southern Region																					
Wollondilly LGA																					
Appin																					
Appin Rd																					
693291	06/12/2009	Sun	19:40	100 m	N	BRIAN RD	2WY	STR	Fine	Dry	80	2	CAR	M36	N in APPIN RD	Unk	Proceeding in lane	N	0	0	
E41230289							RUM:	32	Right rear				CAR	M38	N in APPIN RD	Unk	Turning right				
621578	07/12/2007	Fri	15:45	1 km	N	BRIAN RD	2WY	CRV	Raining	Wet	80	2	CAR	M33	S in APPIN RD	Unk	Incorrect side	I	0	2	
E108074897							RUM:	20	Head on				TRK	M49	N in APPIN RD	60	Proceeding in lane				
689566	09/10/2009	Fri	06:00	1.03 km	N	BRIAN RD	2WY	CRV	Fine	Dry	80	2	CAR	M19	S in APPIN RD	80	Incorrect side	I	0	2	
E39356142							RUM:	20	Head on				TRK	F39	N in APPIN RD	80	Proceeding in lane				
782660	20/01/2012	Fri	15:05	50 m	S	BRIAN RD	2WY	STR	Fine	Dry	80	1	CAR	M19	S in APPIN RD	80	Proceeding in lane	I	0	1	F
E47365774							RUM:	71	Off rd left => obj				Tree/bush								
624720	26/05/2008	Mon	04:50	200 m	S	BRIAN RD	2WY	STR	Fine	Dry	80	1	CAR	M44	N in APPIN RD	80	Proceeding in lane	N	0	0	
E35689085							RUM:	66	Object on road				Other non fixed object								
778583	02/01/2012	Mon	12:15	500 m	S	BRIAN RD	2WY	STR	Fine	Dry	80	3	CAR	F20	S in APPIN RD	60	Proceeding in lane	I	0	1	
E218980893							RUM:	30	Rear end				CAR	F21	S in APPIN RD	70	Proceeding in lane				
													CAR	F33	S in APPIN RD	50	Proceeding in lane				
667464	17/05/2009	Sun	11:15		at	CHURCH ST	TJN	STR	Fine	Dry	50	1	CAR	F44	S in CHURCH ST	50	Proceeding in lane	N	0	0	
E37269223							RUM:	71	Off rd left => obj				Signpost								
772332	23/10/2011	Sun	20:15	1 km	N	CHURCH ST	2WY	STR	Fine	Dry	100	1	CAR	F35	S in APPIN RD	100	Proceeding in lane	N	0	0	
E46325662							RUM:	73	Off rd rght => obj				Tree/bush								
773882	28/10/2011	Fri	16:05	3.35 km	N	CHURCH ST	2WY	CRV	Fine	Dry	100	1	M/C	M26	S in APPIN RD	95	Proceeding in lane	I	0	1	S
E46922839							RUM:	80	Off left/right bend												
702328	06/03/2010	Sat	22:50	6.46 km	S	COPPERFIELD DR	2WY	STR	Fine	Dry	80	2	CAR	M26	N in APPIN RD	80	Proceeding in lane	I	0	4	
E40109411							RUM:	32	Right rear				CAR	M57	N in APPIN RD	0	Wait turn right				
652371	05/01/2009	Mon	18:34	500 m	N	INGHAM ENT	2WY	STR	Fine	Dry	80	2	CAR	M17	S in APPIN RD	75	Proceeding in lane	I	0	1	
E36081334							RUM:	31	Left rear				CAR	F50	S in APPIN RD	20	Turning left				
797317	23/05/2012	Wed	15:50		at	INGHAMS CHICKE ENT	2WY	STR	Fine	Dry	80	3	TRK	M55	N in APPIN RD	80	Proceeding in lane	N	0	0	
E413694691							RUM:	30	Rear end				UTE	M28	N in APPIN RD	0	Stationary				
													CAR	M59	N in APPIN RD	60	Proceeding in lane				
672601	19/06/2009	Fri	17:00	130 m	N	KENNEDY ST	2WY	STR	Overcast	Dry	50	2	CAR	M54	N in APPIN RD	10	Turning right	N	0	0	
E37850821							RUM:	21	Right through				CAR	F43	S in APPIN RD	40	Proceeding in lane				

Detailed Crash Report

Transport Centre for Road Safety

Crash No.	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																					S F
736579	28/12/2010	Tue	06:20		at	KING ST	XJN	STR	Fine	Dry	50	1	CAR	M23	S in APPIN RD	50	Proceeding in lane	I	0	1	F
E42907423							RUM:	73	Off rd rght => obj				Utility pole								
623608	06/05/2008	Tue	17:25	50 m	S	KING ST	2WY	STR	Fine	Dry	60	1	TRK	M65	S in APPIN RD	60	Proceeding in lane	N	0	0	F
E140591594							RUM:	71	Off rd left => obj				Fence								
681417	21/08/2009	Fri	17:35		at	LYSAGHT RD	TJN	STR	Fine	Dry	100	3	SEM	U U	W in LYSAGHT RD	20	Proceeding in lane	N	0	0	
E335695791							RUM:	10	Cross traffic				CAR	M22	N in APPIN RD	Unk	Proceeding in lane				
													WAG	F21	N in APPIN RD	20	Proceeding in lane				
655652	10/02/2009	Tue	17:25		at	MACQUARIEDALE RD	TJN	STR	Unk	Wet	50	2	M/C	M51	S in APPIN RD	40	Proceeding in lane	I	0	1	
E37233953							RUM:	32	Right rear				CAR	F46	S in APPIN RD	0	Wait turn right				
728991	05/10/2010	Tue	07:30		at	MACQUARIEDALE RD	TJN	STR	Fine	Dry	50	2	CAR	M71	S in APPIN RD	Unk	Proceeding in lane	I	0	1	F
E42330634							RUM:	32	Right rear				CAR	M20	S in APPIN RD	0	Wait turn right				
756541	07/06/2011	Tue	13:09		at	MACQUARIEDALE RD	TJN	STR	Fine	Dry	50	2	CAR	M49	E in MACQUARIEDALE RD	Unk	Turning left	I	0	1	
E44564527							RUM:	16	Left near				CAR	F32	N in APPIN RD	50	Proceeding in lane				
684785	30/09/2009	Wed	10:10	30 m	S	MACQUARIEDALE RD	2WY	STR	Fine	Dry	50	2	WAG	F43	S in APPIN RD	Unk	Proceeding in lane	I	0	1	
E38725205							RUM:	0	Ped nearside				PED	M U	APPIN RD		Walk across carriageway				
673822	05/07/2009	Sun	16:20	200 m	N	MARKET ST	2WY	STR	Fine	Dry	50	4	VAN	M18	S in APPIN RD	30	Proceeding in lane	N	0	0	
E37936818							RUM:	30	Rear end				CAR	M26	S in APPIN RD	0	Stationary				
													WAG	M61	S in APPIN RD	0	Stationary				
													CAR	F U	S in APPIN RD	0	Stationary				
698207	26/01/2010	Tue	18:15	20 m	S	MARKET ST	2WY	STR	Fine	Dry	50	3	CAR	F17	N in APPIN RD	Unk	Proceeding in lane	N	0	0	
E39708327							RUM:	30	Rear end				CAR	F19	N in APPIN RD	0	Stationary				
													CAR	M U	N in APPIN RD	0	Stationary				
779692	28/12/2011	Wed	21:55		at	NUMBER 185 HN	2WY	STR	Fine	Dry	80	1	CAR	F28	S in APPIN RD	70	Proceeding in lane	N	0	0	
E89960201							RUM:	67	Struck animal				Straying stock								
779694	28/12/2011	Wed	21:55		at	NUMBER 185 HN	2WY	STR	Fine	Dry	80	1	CAR	M19	N in APPIN RD	80	Proceeding in lane	N	0	0	
E89960201							RUM:	67	Struck animal				Straying stock								
653687	19/01/2009	Mon	18:00		at	NUMBER 48 HN	2WY	STR	Fine	Dry	50	2	CAR	M28	S in APPIN RD	20	Proceeding in lane	N	0	0	
E36206106							RUM:	31	Left rear				CAR	F69	S in APPIN RD	15	Turning left				
773650	09/11/2011	Wed	04:45		at	RIXON RD	RDB	STR	Fog or mist	Wet	60	1	CAR	M32	N in APPIN RD	60	Proceeding in lane	N	0	0	F
E46406366							RUM:	72	Off road to right												

Crash No.	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																					S F
709712	13/05/2010	Thu	20:25	500 m	N	RIXON RD	2WY	CRV	Overcast	Dry	60	2	SEM	M U	S in APPIN RD	20	Proceeding in lane	I	0	1	S F
E41817508							RUM:	81	Off left/rt bnd=>obj				4WD	F35	S in APPIN RD	15	Proceeding in lane				
													Tree/bush								
													Falling object								
615387	10/03/2008	Mon	16:02	150 m	S	RIXON RD	2WY	STR	Fine	Dry	60	2	4WD	F33	N in APPIN RD	60	Proceeding in lane	N	0	0	
E33114613							RUM:	32	Right rear				TRK	U U	N in APPIN RD	0	Wait turn right				
708218	28/04/2010	Wed	10:20	5 m	N	WILTON RD	TJN	STR	Fine	Dry	50	2	SEM	M40	S in APPIN RD	45	Proceeding in lane	I	0	1	
E40961319							RUM:	30	Rear end				CAR	M78	S in APPIN RD	30	Proceeding in lane				
Sydney Region																					
Campbelltown City LGA																					
Ambarvale																					
Appin Rd																					
628805	28/06/2008	Sat	23:10		at	THERRY RD	TJN	STR	Fine	Dry	80	2	TRK	M22	E in THERRY RD	5	Turning right	N	0	0	
E33966125							RUM:	13	Right near				CAR	M24	N in APPIN RD	80	Proceeding in lane				
679832	13/08/2009	Thu	20:30		at	THERRY RD	TJN	STR	Fine	Dry	70	2	OMV	M27	S in APPIN RD	30	Turning right	N	0	0	
E38240048							RUM:	21	Right through				CAR	F19	N in APPIN RD	10	Proceeding in lane				
689781	07/11/2009	Sat	23:40		at	THERRY RD	TJN	STR	Fine	Dry	80	2	CAR	F18	N in APPIN RD	80	Veering right	N	0	0	
E39233603							RUM:	34	Lane change right				CAR	M17	N in APPIN RD	80	Proceeding in lane				
645808	15/11/2008	Sat	08:25	10 m	S	THERRY RD	TJN	STR	Raining	Wet	80	3	4WD	M52	N in APPIN RD	Unk	Proceeding in lane	N	0	0	
E35772331							RUM:	30	Rear end				CAR	M56	N in APPIN RD	0	Stationary				
													VAN	M40	N in APPIN RD	0	Stationary				
759494	11/07/2011	Mon	08:30	10 m	S	THERRY RD	TJN	STR	Fine	Dry	80	2	CAR	F18	N in APPIN RD	25	Proceeding in lane	N	0	0	
E87019501							RUM:	30	Rear end				CAR	F42	N in APPIN RD	0	Stationary				
761027	20/07/2011	Wed	12:30	10 m	N	WOODLAND RD	TJN	STR	Raining	Wet	80	1	CAR	M69	W in APPIN RD	10	Turning right	N	0	0	
E45153648							RUM:	81	Off left/rt bnd=>obj				Other fixed object								
682923	19/08/2009	Wed	15:20	300 m	S	WOODLAND RD	DIV	STR	Fine	Dry	70	2	M/C	M28	S in APPIN RD	80	Proceeding in lane	I	0	1	S
E38289248							RUM:	33	Lane sideswipe				4WD	F39	S in APPIN RD	75	Proceeding in lane				
Appin																					
Appin Rd																					
692001	21/11/2009	Sat	06:55	4.6 km	N	APPIN TN	2WY	CRV	Fine	Dry	80	1	CAR	F20	S in APPIN RD	Unk	Proceeding in lane	I	0	1	S
E39389319							RUM:	81	Off left/rt bnd=>obj				Embankment								

Crash No.	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																					S F
605120	09/01/2008	Wed	21:35	2 km	N	BRIAN RD	2WY	STR	Fine	Dry	80	1	CAR	F21	S in APPIN RD	80	Proceeding in lane	N	0	0	
E32619966							RUM:	67	Struck animal				Small animal								
619625	28/12/2007	Fri	23:15	1.46 km	S	COPPERFIELD DR	2WY	CRV	Fine	Dry	80	1	CAR	M34	S in APPIN RD	80	Proceeding in lane	I	0	1	S F
E34842986							RUM:	81	Off left/rt bnd=>obj				Tree/bush								
667639	07/05/2009	Thu	12:00	2 km	S	COPPERFIELD DR	2WY	STR	Fine	Dry	80	2	CAR	F21	S in APPIN RD	80	Proceeding in lane	I	0	2	
E39803386							RUM:	32	Right rear				WAG	M56	S in APPIN RD	5	Turning right				
631318	05/07/2008	Sat	18:00	3 km	S	COPPERFIELD DR	2WY	STR	Fine	Dry	80	2	WAG	M31	N in APPIN RD	60	Proceeding in lane	I	0	1	
E33999109							RUM:	30	Rear end				CAR	F46	N in APPIN RD	60	Proceeding in lane				
670109	04/06/2009	Thu	01:00	2 km	S	KELLERMAN DR	2WY	STR	Fog or mist	Dry	80	2	TRK	F26	N in APPIN RD	80	Incorrect side	I	0	2	F
E539542690							RUM:	20	Head on				WAG	M42	S in APPIN RD	80	Proceeding in lane				
719869	01/08/2010	Sun	15:00	3.74 km	S	KELLERMAN DR	2WY	STR	Fine	Dry	80	1	TRK	M61	N in APPIN RD	Unk	Proceeding in lane	N	0	0	
E42509753							RUM:	71	Off rd left => obj				Tree/bush								
770863	06/10/2011	Thu	23:50	6 km	S	ROSEMEADOW TN	2WY	STR	Raining	Wet	80	1	4WD	M59	N in APPIN RD	70	Proceeding in lane	I	0	1	
E46222149							RUM:	71	Off rd left => obj				Tree/bush								
Bradbury																					
Appin Rd																					
637115	30/08/2008	Sat	11:50	150 m	S	NARELLAN RD	DIV	STR	Fine	Dry	60	2	4WD	M38	S in APPIN RD	40	Veering left	I	0	1	
E34661814							RUM:	35	Lane change left				M/C	M40	S in APPIN RD	40	Proceeding in lane				
700719	24/02/2010	Wed	05:50		at	ST JOHNS RD	TJN	STR	Fine	Dry	80	2	LOR	M27	W in ST JOHNS RD	10	Turning right	N	0	0	
E40540243							RUM:	13	Right near				CAR	M21	S in APPIN RD	75	Proceeding in lane				
714634	19/06/2010	Sat	23:30		at	ST JOHNS RD	TJN	STR	Fine	Dry	80	2	CAR	F17	N in APPIN RD	10	Turning right	N	0	0	
E41357946							RUM:	21	Right through				CAR	F23	S in APPIN RD	80	Proceeding in lane				
758171	05/06/2011	Sun	16:41		at	ST JOHNS RD	TJN	STR	Fine	Dry	80	1	M/C	M50	N in APPIN RD	80	Proceeding in lane	I	0	1	
E44572033							RUM:	74	On road-out of cont.												
766923	07/09/2011	Wed	16:33	150 m	N	ST JOHNS RD	DIV	STR	Fine	Dry	80	1	4WD	M27	S in APPIN RD	80	Proceeding in lane	N	0	0	
E150228997							RUM:	71	Off rd left => obj				Fence								
773301	28/10/2011	Fri	15:25	50 m	S	ST JOHNS RD	OTH	CRV	Fine	Dry	50	2	CAR	M18	S in APPIN RD	10	Proceeding in lane	I	0	1	
E46145712							RUM:	30	Rear end				CAR	F29	S in APPIN RD	0	Stationary				
736177	11/12/2010	Sat	08:20		at	THE PARKWAY MS	XJN	STR	Fine	Dry	60	2	CAR	F35	S in APPIN RD	45	Proceeding in lane	I	0	1	
E43676641							RUM:	10	Cross traffic				TRK	M51	W in THE PARKWAY MS	15	Proceeding in lane				
798105	25/05/2012	Fri	08:50	5 m	N	WOODLAND RD	TJN	STR	Raining	Wet	80	2	CAR	F18	N in APPIN RD	60	Proceeding in lane	N	0	0	
E286344292							RUM:	30	Rear end				TRK	M68	N in APPIN RD	20	Proceeding in lane				

Crash No.	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																					S F
719633	26/07/2010	Mon	17:50	15 m	N	WOODLAND RD	DIV	STR	Fine	Dry	80	4	CAR	M19	S in APPIN RD	75 Proceeding in lane		I	0	1	
E43349582							RUM:	30	Rear end				CAR	F35	S in APPIN RD	0 Stationary					
													CAR	M22	S in APPIN RD	0 Stationary					
													CAR	M52	S in APPIN RD	0 Stationary					
664115	24/04/2009	Fri	17:00	100 m	N	WOODLAND RD	DIV	STR	Overcast	Dry	80	2	CAR	F22	S in APPIN RD	Unk Proceeding in lane		I	0	2	
E36808709							RUM:	30	Rear end				CCH	F30	S in APPIN RD	0 Stationary					
747034	21/03/2011	Mon	15:30	100 m	N	WOODLAND RD	DIV	STR	Overcast	Wet	80	3	CAR	F26	S in APPIN RD	50 Proceeding in lane		I	0	2	
E43695514							RUM:	30	Rear end				CAR	F22	S in APPIN RD	0 Stationary					
													4WD	F28	S in APPIN RD	0 Stationary					
633746	12/08/2008	Tue	16:40	200 m	N	WOODLAND RD	DIV	STR	Fine	Dry	80	3	CAR	F26	S in APPIN RD	70 Proceeding in lane		I	0	1	
E36465285							RUM:	30	Rear end				CAR	F29	S in APPIN RD	0 Stationary					
													CAR	M50	S in APPIN RD	0 Stationary					
Moore-Oxley Bypa																					
591388	28/09/2007	Fri	22:30		at	NARELLAN RD	XJN	STR	Fine	Dry	60	2	CAR	M27	E in NARELLAN RD	50 Proceeding in lane		N	0	0	
E31266852							RUM:	10	Cross traffic				CAR	M51	S in MOORE-OXLEY BYPA	10 Proceeding in lane					
657361	24/02/2009	Tue	17:20		at	NARELLAN RD	XJN	STR	Fine	Dry	60	2	CAR	F20	S in MOORE-OXLEY BYPA	15 Veering left		N	0	0	
E36867477							RUM:	35	Lane change left				CAR	F27	S in MOORE-OXLEY BYPA	60 Proceeding in lane					
715762	24/06/2010	Thu	12:05		at	NARELLAN RD	XJN	STR	Fine	Dry	60	2	TRK	M46	N in MOORE-OXLEY BYPA	20 Turning right		I	0	1	S
E43698581							RUM:	21	Right through				CAR	M21	S in MOORE-OXLEY BYPA	75 Proceeding in lane					
759303	03/07/2011	Sun	09:50		at	NARELLAN RD	XJN	STR	Fine	Dry	60	2	CAR	F35	S in MOORE-OXLEY BYPA	Unk Proceeding in lane		N	0	0	
E45183340							RUM:	10	Cross traffic				4WD	M37	E in NARELLAN RD	Unk Proceeding in lane					
St Johns Rd																					
633591	06/08/2008	Wed	18:10	10 m	E	APPIN RD	TJN	STR	Fine	Dry	60	1	M/C	M27	E in ST JOHNS RD	30 Proceeding in lane		I	0	1	
E34311244							RUM:	74	On road-out of cont.												
Campbelltown																					
Appin Rd																					
636483	31/08/2008	Sun	01:10	5 km	S	COPPERFIELD DR	2WY	STR	Raining	Wet	80	2	CAR	M41	S in APPIN RD	80 Proceeding in lane		N	0	0	
E34931005							RUM:	30	Rear end				WAG	M18	S in APPIN RD	60 Proceeding in lane					
648668	29/11/2008	Sat	20:20		at	NARELLAN RD	XJN	CRV	Raining	Wet	60	3	CAR	M40	S in APPIN RD	Unk Turning right		N	0	0	
E35554054							RUM:	13	Right near				CAR	M23	E in NARELLAN RD	Unk Proceeding in lane					
													CAR	M40	W in NARELLAN RD	0 Wait turn right					
683610	17/09/2009	Thu	17:19		at	NARELLAN RD	XJN	CRV	Overcast	Dry	60	2	CAR	M19	N in APPIN RD	50 Turning right		I	0	2	
E38493059							RUM:	21	Right through				CAR	F30	S in APPIN RD	60 Proceeding in lane					

Crash No.	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors S	Factors F
597415	10/11/2007	Sat	14:41	10 m S	NARELLAN RD	XJN	STR	Fine	Dry	60	3	CAR	F36	N in APPIN RD	50	Proceeding in lane	I	0	1		
E32152562						RUM:	30	Rear end				CAR	F U	N in APPIN RD	50	Proceeding in lane					
												CAR	M33	N in APPIN RD	50	Proceeding in lane					
637795	06/09/2008	Sat	11:50	80 m S	NARELLAN RD	DIV	CRV	Raining	Wet	60	3	CAR	F19	N in APPIN RD	60	Proceeding in lane	N	0	0	S	
E35120519						RUM:	30	Rear end				CAR	F19	N in APPIN RD	0	Stationary					
												CAR	F17	N in APPIN RD	0	Stationary					
704308	04/03/2010	Thu	08:05	100 m S	NARELLAN RD	DIV	STR	Fine	Dry	50	2	CAR	F21	N in APPIN RD	55	Proceeding in lane	N	0	0	S	
E39967275						RUM:	30	Rear end				UTE	M43	N in APPIN RD	0	Stationary					
773478	03/11/2011	Thu	06:40	200 m S	NARELLAN RD	DIV	STR	Raining	Wet	80	2	TRK	M20	N in APPIN RD	45	Proceeding in lane	I	0	1		
E46285345						RUM:	0	Ped nearside				PED	M43	E in APPIN RD		Walk across carriageway					
682012	17/07/2009	Fri	19:30	325 m S	NARELLAN RD	DIV	STR	Fine	Dry	80	2	CAR	F20	W in APPIN RD	10	Forward from drive	I	0	2		
E38278358						RUM:	47	Emerging from drive				M/C	M U	S in APPIN RD	80	Proceeding in lane					
731203	15/10/2010	Fri	15:48	at	ST JOHNS RD	TJN	CRV	Overcast	Dry	80	1	CAR	M18	W in ST JOHNS RD	40	Turning right	N	0	0	S	
E42085724						RUM:	81	Off left/rt bnd=>obj				Signpost									
645895	18/11/2008	Tue	15:43	15 m S	ST JOHNS RD	DIV	STR	Fine	Dry	80	2	CAR	M20	N in APPIN RD	65	Proceeding in lane	I	0	1		F
E35861949						RUM:	33	Lane sideswipe				CAR	F42	N in APPIN RD	20	Proceeding in lane					
588675	05/09/2007	Wed	16:10	at	THE PARKWAY MS	XJN	CRV	Fine	Dry	60	2	TRK	F47	N in APPIN RD	60	Turning right	N	0	0		
E31119115						RUM:	21	Right through				CAR	F U	S in APPIN RD	60	Proceeding in lane					
683528	01/09/2009	Tue	17:14	at	THE PARKWAY MS	XJN	CRV	Fine	Dry	60	2	CAR	F29	N in APPIN RD	10	Turning right	I	0	2		
E39212665						RUM:	21	Right through				CAR	F32	S in APPIN RD	60	Proceeding in lane					
740953	09/01/2011	Sun	10:45	at	THE PARKWAY MS	XJN	CRV	Overcast	Wet	60	2	CAR	F56	N in APPIN RD	40	Turning right	I	0	1		
E45490283						RUM:	21	Right through				CAR	F27	S in APPIN RD	60	Proceeding in lane					
742011	11/01/2011	Tue	06:15	at	THE PARKWAY MS	XJN	STR	Overcast	Dry	60	2	WAG	M37	S in APPIN RD	62	Proceeding in lane	N	0	0	S	
E42947435						RUM:	10	Cross traffic				TRK	M21	E in THE PARKWAY MS	40	Proceeding in lane					
755622	01/06/2011	Wed	21:20	at	THE PARKWAY MS	XJN	CRV	Overcast	Wet	60	2	4WD	F21	N in APPIN RD	5	Turning right	N	0	0		
E44385752						RUM:	21	Right through				CAR	M52	S in APPIN RD	40	Proceeding in lane					
799144	08/06/2012	Fri	18:40	at	THE PARKWAY MS	XJN	CRV	Fine	Dry	60	2	CAR	M24	N in APPIN RD	20	Turning right	N	0	0		
E47723837						RUM:	21	Right through				OMV	M46	S in APPIN RD	50	Proceeding in lane					
648012	03/12/2008	Wed	22:40	200 m S	THE PARKWAY MS	DIV	STR	Fine	Dry	80	3	4WD	M49	S in APPIN RD	80	Proceeding in lane	N	0	0		
E35735364						RUM:	30	Rear end				4WD	M34	S in APPIN RD	0	Stationary					
												CAR	M24	S in APPIN RD	0	Stationary					
616441	08/03/2008	Sat	04:30	300 m S	THE PARKWAY MS	DIV	STR	Overcast	Wet	80	1	CAR	M24	N in APPIN RD	150	Proceeding in lane	N	0	0	S	
E33318919						RUM:	71	Off rd left => obj				Fence									

Detailed Crash Report

Transport Centre for Road Safety — NSW Government

Crash No.	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																					S F
614957	25/02/2008	Mon	07:17		at	THERRY RD	TJN	STR	Fine	Dry	80	2	CAR	M60	S in APPIN RD	15	Turning right	N	0	0	
E32683209							RUM:	21	Right through				WAG	F22	N in APPIN RD	80	Proceeding in lane				
718744	21/07/2010	Wed	18:05		at	THERRY RD	TJN	STR	Fine	Dry	80	2	CAR	F54	S in APPIN RD	30	Turning right	N	0	0	
E43829083							RUM:	21	Right through				CAR	F55	N in APPIN RD	10	Proceeding in lane				
726246	20/09/2010	Mon	14:27		at	THERRY RD	TJN	STR	Fine	Dry	80	2	CAR	F36	S in APPIN RD	Unk	Turning right	I	0	1	
E43102716							RUM:	21	Right through				CAR	F82	N in APPIN RD	Unk	Proceeding in lane				
787417	13/02/2012	Mon	08:40	5 m	N	THERRY RD	TJN	STR	Fine	Dry	70	2	CAR	M35	S in APPIN RD	50	Proceeding in lane	N	0	0	
E47422728							RUM:	30	Rear end				WAG	M65	S in APPIN RD	0	Stationary				
595938	28/10/2007	Sun	03:35	50 m	N	THERRY RD	DIV	STR	Fine	Dry	80	3	CAR	F23	S in APPIN RD	80	Proceeding in lane	I	0	1	F
E32112450							RUM:	71	Off rd left => obj				CAR	M19	S in APPIN RD	75	Proceeding in lane				
													CAR	F33	S in APPIN RD	75	Proceeding in lane				
													Utility pole								
609657	09/02/2008	Sat	18:29	50 m	N	THERRY RD	2WY	STR	Fine	Dry	80	1	CAR	F21	N in APPIN RD	60	Proceeding in lane	I	0	2	
E33074671							RUM:	71	Off rd left => obj				Signpost								
584411	26/07/2007	Thu	11:50	150 m	N	THERRY RD	DIV	STR	Fine	Dry	80	2	CAR	U U	N in APPIN RD	80	Veering right	N	0	0	
E109017896							RUM:	34	Lane change right				CAR	U U	N in APPIN RD	80	Proceeding in lane				
676210	25/07/2009	Sat	10:50	5 m	S	THERRY RD	TJN	STR	Fine	Dry	80	2	CAR	F25	N in APPIN RD	40	Proceeding in lane	I	0	2	
E40282783							RUM:	30	Rear end				CAR	F48	N in APPIN RD	0	Stationary				
698942	01/02/2010	Mon	22:15	200 m	S	THERRY RD	DIV	STR	Fine	Dry	80	2	UTE	M17	S in APPIN RD	80	Proceeding in lane	I	0	1	
E39992104							RUM:	30	Rear end				M/C	M27	S in APPIN RD	60	Proceeding in lane				
698944	01/02/2010	Mon	22:15	200 m	S	THERRY RD	DIV	STR	Fine	Dry	80	2	CAR	M72	S in APPIN RD	80	Proceeding in lane	I	0	1	
E39992104							RUM:	30	Rear end				CAR	F20	S in APPIN RD	0	Stationary				
Moore-Oxley Bypa																					
693478	22/12/2009	Tue	19:10		at	NARELLAN RD	XJN	STR	Fine	Dry	60	2	WAG	F26	S in MOORE-OXLEY BYPA	Unk	Proceeding in lane	N	0	0	
E39517761							RUM:	10	Cross traffic				4WD	M38	E in NARELLAN RD	Unk	Proceeding in lane				
714543	17/06/2010	Thu	09:30		at	NARELLAN RD	XJN	STR	Fine	Dry	60	2	SEM	M64	S in MOORE-OXLEY BYPA	Unk	Proceeding in lane	N	0	0	
E41821442							RUM:	30	Rear end				CAR	M72	S in MOORE-OXLEY BYPA	Unk	Proceeding in lane				
726221	19/09/2010	Sun	07:55		at	NARELLAN RD	XJN	STR	Fine	Dry	Unk	2	CAR	F17	E in NARELLAN RD	55	Proceeding in lane	N	0	0	
E41454710							RUM:	10	Cross traffic				4WD	M40	S in MOORE-OXLEY BYPA	30	Proceeding in lane				
703623	19/03/2010	Fri	17:25		at	THE PARKWAY MS	XJN	STR	Fine	Dry	60	2	CAR	M54	S in MOORE-OXLEY BYPA	60	Proceeding in lane	N	0	0	
E77704402							RUM:	10	Cross traffic				WAG	F55	E in THE PARKWAY MS	20	Proceeding in lane				
740637	17/12/2010	Fri	20:10	10 m	N	THE PARKWAY MS	XJN	CRV	Fine	Dry	60	1	M/C	M23	S in MOORE-OXLEY BYPA	Unk	Proceeding in lane	I	0	1	
E42857811							RUM:	88	Out of cont on bend												

Crash No.	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																				S F
787574	07/03/2012	Wed	19:10	10 m N	THE PARKWAY MS	XJN	CRV	Overcast	Dry	70	3	CAR	M26	S in MOORE-OXLEY BYPA	1	Proceeding in lane	N	0	0	
E47040736						RUM:	30	Rear end				WAG	F19	S in MOORE-OXLEY BYPA	0	Stationary				
												CAR	M87	S in MOORE-OXLEY BYPA	0	Stationary				
Narellan Rd																				
608852	20/12/2007	Thu	03:10	10 m W	APPIN RD	XJN	CRV	Overcast	Wet	60	1	WAG	M34	N in NARELLAN RD	120	Proceeding in lane	I	0	1	S
E34306984						RUM:	81	Off left/rt bnd=>obj				Tree/bush								
708452	04/05/2010	Tue	07:30	10 m W	APPIN RD	XJN	STR	Overcast	Dry	60	2	CAR	F29	E in NARELLAN RD	5	Proceeding in lane	I	0	1	
E41245474						RUM:	30	Rear end				TRK	M35	E in NARELLAN RD	0	Stationary				
698679	09/02/2010	Tue	16:45	10 m W	MOORE-OXLEY BYPA	XJN	STR	Fine	Dry	60	2	TRK	M61	E in NARELLAN RD	55	Proceeding in lane	N	0	0	
E39429460						RUM:	30	Rear end				CAR	M18	E in NARELLAN RD	0	Stationary				
Gilead																				
Appin Rd																				
792138	18/03/2012	Sun	23:15	3.2 km N	BRIAN RD	2WY	STR	Raining	Wet	80	1	CAR	M19	S in APPIN RD	70	Proceeding in lane	N	0	0	
E47515607						RUM:	72	Off road to right												
692444	13/12/2009	Sun	23:00	1 km S	COPPERFIELD DR	2WY	STR	Fine	Dry	80	1	CAR	F51	N in APPIN RD	60	Proceeding in lane	I	0	2	
E39240322						RUM:	71	Off rd left => obj				Tree/bush								
620849	30/04/2008	Wed	15:00	2 km S	COPPERFIELD DR	2WY	STR	Fine	Dry	80	1	TRK	M41	N in APPIN RD	80	Proceeding in lane	I	0	1	F
E34402353						RUM:	73	Off rd rght => obj				Tree/bush								
703377	15/02/2010	Mon	18:20	2 km S	COPPERFIELD DR	2WY	STR	Fine	Dry	80	1	CAR	F22	N in APPIN RD	80	Cutting back	I	0	1	
E39993556						RUM:	51	Out of control otake												
667417	15/05/2009	Fri	13:20	3 km S	COPPERFIELD DR	2WY	STR	Fine	Dry	80	2	SEM	M49	S in APPIN RD	25	Proceeding in lane	I	0	2	
E537098290						RUM:	31	Left rear				CAR	F69	S in APPIN RD	Unk	Turning left				
795732	26/01/2011	Wed	10:00	3 km S	COPPERFIELD DR	2WY	STR	Fine	Dry	80	2	CAR	F18	S in APPIN RD	60	Proceeding in lane	I	0	3	
E43302454						RUM:	30	Rear end				VAN	M45	S in APPIN RD	60	Proceeding in lane				
745793	21/03/2011	Mon	21:00	3 km S	COPPERFIELD DR	2WY	STR	Raining	Wet	80	1	TRK	M32	S in APPIN RD	80	Proceeding in lane	N	0	0	F
E46519686						RUM:	71	Off rd left => obj				Tree/bush								
734006	02/12/2010	Thu	06:15	4.35 km S	KELLERMAN DR	2WY	CRV	Overcast	Wet	80	1	VAN	M35	S in APPIN RD	75	Proceeding in lane	N	0	0	S
E42451570						RUM:	80	Off left/right bend												
624536	21/05/2008	Wed	09:40	5 km N	LYSAGHT RD	2WY	STR	Fine	Dry	80	3	CAR	F20	S in APPIN RD	80	Proceeding in lane	N	0	0	
E34182340						RUM:	30	Rear end				CAR	F39	S in APPIN RD	0	Stationary				
												TRK	M48	S in APPIN RD	0	Stationary				
731121	10/11/2010	Wed	17:25	Unk Unk	UNKNOWN UK	2WY	STR	Fine	Dry	80	2	4WD	M39	N in APPIN RD	80	Incorrect side	N	0	0	F
E42513833						RUM:	20	Head on				TRK	M34	S in APPIN RD	80	Proceeding in lane				

Crash No.	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																					S F
Rosemeadow																					
Appin Rd																					
627808	14/06/2008	Sat	01:30		at	COPPERFIELD DR	RDB	STR	Fine	Dry	70	1	CAR	M24	N in APPIN RD	30	Proceeding in lane	N	0	0	
E34834441							RUM:	70	Off road to left												
688273	03/11/2009	Tue	17:45	30 m	N	COPPERFIELD DR	2WY	CRV	Fine	Dry	60	3	CAR	F24	S in APPIN RD	70	Proceeding in lane	N	0	0	S
E127165898							RUM:	30	Rear end				CAR	M29	S in APPIN RD	0	Stationary				
													WAG	M18	S in APPIN RD	0	Stationary				
785556	24/02/2012	Fri	17:50	150 m	N	COPPERFIELD DR	2WY	STR	Fine	Dry	70	2	CAR	F50	S in APPIN RD	70	Proceeding in lane	N	0	0	
E47264526							RUM:	30	Rear end				CAR	F37	S in APPIN RD	0	Stationary				
656707	05/02/2009	Thu	14:25	800 m	N	COPPERFIELD DR	2WY	STR	Fine	Dry	70	2	TRK	M49	N in APPIN RD	Unk	Perform U-turn	I	0	2	
E69846702							RUM:	40	U turn				CAR	F55	N in APPIN RD	Unk	Proceeding in lane				
692181	04/12/2009	Fri	07:45	300 m	S	COPPERFIELD DR	2WY	STR	Fine	Dry	80	3	CAR	M26	N in APPIN RD	50	Proceeding in lane	N	0	0	
E39514762							RUM:	30	Rear end				CAR	F27	N in APPIN RD	0	Stationary				
													CAR	F20	N in APPIN RD	0	Stationary				
644912	09/11/2008	Sun	17:10	2 km	S	COPPERFIELD DR	2WY	STR	Fine	Dry	80	1	CAR	M21	S in APPIN RD	80	Proceeding in lane	I	0	3	
E35533345							RUM:	72	Off road to right												
702426	10/03/2010	Wed	16:45		at	FITZGIBBON LANE	XJN	STR	Fine	Dry	60	2	CAR	M18	S in APPIN RD	20	Turning right	N	0	0	
E39775730							RUM:	21	Right through				CAR	M54	N in APPIN RD	15	Proceeding in lane				
784553	09/02/2012	Thu	20:00	300 m	N	FITZGIBBON LANE	DIV	STR	Raining	Wet	80	1	UTE	M18	S in APPIN RD	75	Proceeding in lane	I	0	1	
E49359483							RUM:	72	Off road to right												
673792	04/07/2009	Sat	16:00	10 m	S	FITZGIBBON LANE	XJN	STR	Fine	Dry	70	3	CAR	M69	N in APPIN RD	Unk	Proceeding in lane	N	0	0	
E38178507							RUM:	30	Rear end				CAR	M30	N in APPIN RD	0	Stationary				
													CAR	M23	N in APPIN RD	0	Stationary				
651877	02/01/2009	Fri	19:05	40 m	S	FITZGIBBON LANE	DIV	STR	Fine	Dry	60	2	CAR	F18	S in APPIN RD	70	Proceeding in lane	I	0	1	S
E35746815							RUM:	30	Rear end				TRK	M27	S in APPIN RD	Unk	Proceeding in lane				
778543	01/01/2012	Sun	16:10	200 m	S	FITZGIBBON LANE	2WY	STR	Fine	Dry	70	2	CAR	M17	S in APPIN RD	65	Incorrect side	N	0	0	
E46766546							RUM:	20	Head on				CAR	M60	N in APPIN RD	70	Proceeding in lane				
637034	31/07/2008	Thu	15:00		at	KELLERMAN DR	XJN	STR	Fine	Dry	70	2	CAR	F38	S in APPIN RD	70	Proceeding in lane	I	0	1	
E34717112							RUM:	2	Ped far side				TOY	M12	E in APPIN RD		In/on toy vehicle				
763481	01/08/2011	Mon	13:50		at	KELLERMAN DR	XJN	STR	Fine	Dry	60	2	CAR	M58	S in APPIN RD	10	Turning right	I	0	1	
E45438950							RUM:	21	Right through				CAR	F56	N in APPIN RD	60	Proceeding in lane				
641302	13/10/2008	Mon	21:38	500 m	S	KELLERMAN DR	2WY	STR	Fine	Dry	60	1	CAR	M26	S in APPIN RD	60	Proceeding in lane	N	0	0	
E37244084							RUM:	71	Off rd left => obj				Tree/bush								

Crash No.	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																					S F
592145	30/09/2007	Sun	11:30	1.88 km	S	KELLERMAN DR	2WY	STR	Fine	Dry	80	3	TRK	F37	S in APPIN RD	70	Proceeding in lane	N	0	0	
E31602634							RUM:	30	Rear end				CAR	F46	S in APPIN RD	0	Stationary				
													CAR	M50	S in APPIN RD	0	Stationary				
782379	12/01/2012	Thu	16:45	500 m	S	WOODLAND RD	2WY	STR	Fine	Dry	70	1	WAG	M63	S in APPIN RD	55	Proceeding in lane	I	0	1	
E46929666							RUM:	73	Off rd rght => obj				Guide Post								
Fitzgibbon Lane																					
776269	31/08/2011	Wed	15:20	5 m	W	APPIN RD	XJN	STR	Fine	Dry	50	2	CAR	U U	E in FITZGIBBON LANE	15	Proceeding in lane	I	0	1	
E47296982							RUM:	30	Rear end				4WD	F44	E in FITZGIBBON LANE	0	Stationary				
St Helens Park																					
Appin Rd																					
599149	20/11/2007	Tue	19:00		at	COPPERFIELD DR	RDB	STR	Fine	Dry	50	2	M/C	M21	E in COPPERFIELD DR	20	Proceeding in lane	I	0	1	
E31895636							RUM:	10	Cross traffic				TRK	M53	N in APPIN RD	Unk	Proceeding in lane				
732844	14/11/2010	Sun	10:45	150 m	N	COPPERFIELD DR	2WY	STR	Fine	Dry	70	2	CAR	F55	S in APPIN RD	45	Proceeding in lane	N	0	0	
E44487285							RUM:	30	Rear end				CAR	M40	S in APPIN RD	5	Proceeding in lane				
693416	19/12/2009	Sat	09:30	300 m	N	COPPERFIELD DR	2WY	STR	Fine	Dry	80	2	CAR	M40	N in APPIN RD	10	Perform U-turn	I	0	1	
E39574857							RUM:	40	U turn				CAR	M19	S in APPIN RD	70	Proceeding in lane				
663372	01/04/2009	Wed	07:55	100 m	S	COPPERFIELD DR	2WY	STR	Raining	Wet	80	3	CAR	F37	N in APPIN RD	50	Proceeding in lane	N	0	0	
E37693741							RUM:	30	Rear end				CAR	M48	N in APPIN RD	50	Proceeding in lane				
													CAR	F20	N in APPIN RD	50	Proceeding in lane				
778386	27/11/2011	Sun	08:40	500 m	S	COPPERFIELD DR	2WY	STR	Fine	Dry	80	3	CAR	M20	N in APPIN RD	70	Proceeding in lane	I	0	1	
E47142965							RUM:	30	Rear end				CAR	M24	N in APPIN RD	0	Stationary				
													CAR	M51	N in APPIN RD	5	Proceeding in lane				
663759	04/03/2009	Wed	21:57	600 m	S	COPPERFIELD DR	2WY	CRV	Fine	Dry	80	1	CAR	M29	N in APPIN RD	80	Proceeding in lane	I	0	1	
E37044728							RUM:	87	Off lft/lft bnd=>obj				Tree/bush								
708504	07/05/2010	Fri	06:40		at	FITZGIBBON LANE	XJN	STR	Fine	Dry	70	2	UTE	F20	N in APPIN RD	70	Proceeding in lane	I	0	1	
E43199881							RUM:	10	Cross traffic				4WD	M52	E in FITZGIBBON LANE	10	Proceeding in lane				
757647	18/06/2011	Sat	19:00	10 m	S	FITZGIBBON LANE	XJN	STR	Fine	Dry	70	3	TRK	M69	N in APPIN RD	70	Proceeding in lane	I	0	1	
E45301543							RUM:	30	Rear end				4WD	M62	N in APPIN RD	0	Stationary				
													WAG	F28	N in APPIN RD	0	Stationary				
794273	04/05/2012	Fri	18:45		at	KELLERMAN DR	XJN	STR	Fine	Dry	60	2	CAR	F20	W in KELLERMAN DR	10	Turning right	N	0	0	
E47787912							RUM:	21	Right through				CAR	M41	E in KELLERMAN DR	60	Proceeding in lane				
602698	20/12/2007	Thu	12:15	5 m	N	KELLERMAN DR	XJN	STR	Overcast	Wet	80	2	CAR	M18	S in APPIN RD	50	Proceeding in lane	N	0	0	
E32059852							RUM:	30	Rear end				CAR	U U	S in APPIN RD	0	Stationary				

Detailed Crash Report

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Crash No.	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																					S F
687261	30/10/2009	Fri	16:50	10 m	N	KELLERMAN DR	RDB	STR	Fine	Dry	70	3	CAR	M30	S in APPIN RD	Unk	Proceeding in lane	N	0	0	
E38834127							RUM:	30	Rear end				CAR	F22	S in APPIN RD	0	Stationary				
													CAR	M56	S in APPIN RD	0	Stationary				
601378	11/12/2007	Tue	16:15	20 m	N	KELLERMAN DR	2WY	STR	Overcast	Dry	70	3	TRK	M41	S in APPIN RD	50	Proceeding in lane	I	0	1	
E32448604							RUM:	30	Rear end				4WD	F17	S in APPIN RD	0	Stationary				
													CAR	M57	S in APPIN RD	0	Stationary				
743069	19/02/2011	Sat	12:15	40 m	N	KELLERMAN DR	2WY	STR	Fine	Dry	70	3	CAR	F54	S in APPIN RD	30	Proceeding in lane	N	0	0	
E630869390							RUM:	30	Rear end				CAR	M U	S in APPIN RD	0	Stationary				
													CAR	M36	S in APPIN RD	0	Stationary				
615236	07/03/2008	Fri	17:29	100 m	N	KELLERMAN DR	2WY	STR	Fine	Dry	60	2	CAR	F28	S in APPIN RD	40	Proceeding in lane	I	0	1	
E32765537							RUM:	30	Rear end				CAR	F41	S in APPIN RD	10	Proceeding in lane				
759757	22/06/2011	Wed	15:35	100 m	N	KELLERMAN DR	2WY	STR	Fine	Dry	60	2	TRK	M22	S in APPIN RD	55	Proceeding in lane	I	0	1	
E44945318							RUM:	30	Rear end				CAR	F33	S in APPIN RD	40	Proceeding in lane				
777396	08/12/2011	Thu	15:20	100 m	N	KELLERMAN DR	2WY	STR	Raining	Wet	70	3	CAR	M26	S in APPIN RD	50	Proceeding in lane	N	0	0	
E671547990							RUM:	30	Rear end				OMV	U U	S in APPIN RD	Unk	Proceeding in lane				
													CAR	M29	S in APPIN RD	0	Stationary				
720796	06/08/2010	Fri	12:30	275 m	N	KELLERMAN DR	DIV	STR	Fine	Dry	70	1	CAR	M34	S in APPIN RD	Unk	Proceeding in lane	I	0	1	
E41828846							RUM:	71	Off rd left => obj				Other fixed object								
780559	07/01/2012	Sat	19:12	20 m	S	KELLERMAN DR	2WY	STR	Fine	Dry	60	5	CAR	M29	N in APPIN RD	60	Proceeding in lane	N	0	0	
E49288886							RUM:	30	Rear end				TRK	M37	N in APPIN RD	0	Stationary				
													CAR	F21	N in APPIN RD	0	Stationary				
													CAR	M36	N in APPIN RD	0	Stationary				
													CAR	F39	N in APPIN RD	0	Stationary				
636070	29/08/2008	Fri	08:20	100 m	S	KELLERMAN DR	2WY	STR	Overcast	Dry	70	4	CAR	F39	N in APPIN RD	40	Proceeding in lane	N	0	0	
E35156443							RUM:	30	Rear end				CAR	M29	N in APPIN RD	0	Stationary				
													CAR	F19	N in APPIN RD	0	Stationary				
													CAR	F51	N in APPIN RD	0	Stationary				
782083	18/01/2012	Wed	17:45	200 m	S	KELLERMAN DR	2WY	STR	Fine	Dry	70	3	CAR	F17	N in APPIN RD	60	Proceeding in lane	N	0	0	
E46622406							RUM:	30	Rear end				4WD	F46	N in APPIN RD	0	Stationary				
													CAR	M28	N in APPIN RD	0	Stationary				
609564	31/01/2008	Thu	07:00	5 m	N	THERRY RD	TJN	STR	Fine	Dry	60	2	4WD	M25	S in APPIN RD	Unk	Proceeding in lane	I	0	1	
E32991871							RUM:	30	Rear end				CAR	M29	S in APPIN RD	0	Stationary				
588163	29/08/2007	Wed	18:00		at	WOODLAND RD	TJN	STR	Fine	Dry	80	2	CAR	M30	S in APPIN RD	Unk	Proceeding in lane	I	0	1	
E104858498							RUM:	30	Rear end				VAN	F39	S in APPIN RD	0	Stationary				

Crash No.	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																					S F
636139	03/09/2008	Wed	22:50		at	WOODLAND RD	TJN	STR	Raining	Wet	70	1	CAR	M20	N in APPIN RD	Unk	Proceeding in lane	I	0	1	F
E37145081							RUM:	71	Off rd left => obj				Fence								
657955	27/02/2009	Fri	20:56		at	WOODLAND RD	TJN	STR	Fine	Dry	80	2	CAR	F18	N in APPIN RD	Unk	Turning right	N	0	0	
E36539113							RUM:	21	Right through				CAR	M26	S in APPIN RD	80	Proceeding in lane				
661716	10/03/2009	Tue	20:50		at	WOODLAND RD	TJN	STR	Fine	Wet	80	3	CAR	M17	N in APPIN RD	Unk	Turning right	I	0	2	
E36410544							RUM:	21	Right through				CAR	M17	S in APPIN RD	70	Proceeding in lane				
													CAR	F38	S in APPIN RD	Unk	Proceeding in lane				
710842	14/05/2010	Fri	20:50		at	WOODLAND RD	TJN	STR	Fine	Dry	80	2	CAR	F19	N in APPIN RD	70	Turning right	I	0	2	
E41576378							RUM:	21	Right through				CAR	M52	S in APPIN RD	80	Proceeding in lane				
716113	25/06/2010	Fri	19:32		at	WOODLAND RD	TJN	STR	Fine	Dry	60	2	CAR	M22	N in APPIN RD	Unk	Turning right	N	0	0	
E42109739							RUM:	21	Right through				CAR	M38	S in APPIN RD	Unk	Proceeding in lane				
732787	09/11/2010	Tue	21:30		at	WOODLAND RD	TJN	STR	Fine	Dry	70	3	CAR	M22	N in APPIN RD	30	Turning right	I	0	4	
E371063391							RUM:	21	Right through				OMV	F68	S in APPIN RD	70	Proceeding in lane				
													OMV	M29	S in APPIN RD	70	Proceeding in lane				
791637	17/04/2012	Tue	18:05		at	WOODLAND RD	TJN	STR	Raining	Wet	80	2	CAR	F22	S in APPIN RD	30	Proceeding in lane	I	0	1	
E47649276							RUM:	10	Cross traffic				CAR	F20	W in WOODLAND RD	10	Proceeding in lane				
720394	08/08/2010	Sun	13:20	5 m	N	WOODLAND RD	TJN	STR	Fine	Dry	80	2	CAR	F40	S in APPIN RD	30	Proceeding in lane	I	0	2	
E41165720							RUM:	30	Rear end				CAR	F55	S in APPIN RD	0	Stationary				
799300	14/06/2012	Thu	14:20	5 m	N	WOODLAND RD	TJN	STR	Fine	Dry	80	2	SEM	M60	S in APPIN RD	65	Proceeding in lane	I	0	1	
E48324557							RUM:	30	Rear end				CAR	M78	S in APPIN RD	50	Proceeding in lane				
777517	23/11/2011	Wed	08:20	100 m	N	WOODLAND RD	DIV	STR	Raining	Wet	80	1	WAG	F23	S in APPIN RD	70	Proceeding in lane	N	0	0	
E45682230							RUM:	72	Off road to right												
623221	10/05/2008	Sat	13:10	2 m	S	WOODLAND RD	TJN	STR	Fine	Dry	80	2	TRK	M20	N in APPIN RD	20	Veering right	I	0	1	
E33860305							RUM:	34	Lane change right				CAR	M32	N in APPIN RD	10	Proceeding in lane				
698143	21/01/2010	Thu	14:50	15 m	S	WOODLAND RD	DIV	STR	Fine	Dry	80	3	CAR	M71	N in APPIN RD	Unk	Proceeding in lane	I	0	1	
E39252320							RUM:	30	Rear end				CAR	F20	N in APPIN RD	0	Stationary				
													CAR	F20	N in APPIN RD	0	Stationary				
785797	16/02/2012	Thu	00:41	450 m	S	WOODLAND RD	DIV	STR	Fine	Dry	80	1	UTE	M U	S in APPIN RD	80	Proceeding in lane	N	0	0	F
E46957413							RUM:	71	Off rd left => obj				Fence								
Wedderburn Appin Rd																					
756593	09/06/2011	Thu	16:00	2 km	S	COPPERFIELD DR	2WY	STR	Fine	Dry	80	2	TRK	M23	S in APPIN RD	10	Proceeding in lane	N	0	0	
E45013962							RUM:	30	Rear end				UTE	M38	S in APPIN RD	0	Stationary				

Transport Centre for Road Safety

Crash No.	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																				S F
762208	22/07/2011	Fri	17:25	3 km S	COPPERFIELD DR	2WY	STR	Raining	Wet	80	1	M/C	M20	N in APPIN RD	65	Proceeding in lane	N	0	0	
E47760286						RUM:	74	On road-out of cont.												
744725	11/03/2011	Fri	19:45	4 km S	COPPERFIELD DR	2WY	STR	Fine	Dry	80	1	CAR	M53	S in APPIN RD	70	Proceeding in lane	N	0	0	
E43426970						RUM:	71	Off rd left => obj				Tree/bush								

Report Totals: Total Crashes: 163 Fatal Crashes: 0 Injury Crashes: 81 Killed: 0 Injured: 108

Crashid dataset 5273 - Appin Rd - Narellan Rd to Church St inc 10m at intersections - July07 to June12

Summary Crash Report

Transport Centre for Road Safety

# Crash Type		
Car Crash	152	93.3%
Light Truck Crash	30	18.4%
Rigid Truck Crash	1	0.6%
Articulated Truck Crash	6	3.7%
'Heavy Truck Crash	(7)	(4.3%)
Bus Crash	1	0.6%
"Heavy Vehicle Crash	(7)	(4.3%)
Emergency Vehicle Crash	1	0.6%
Motorcycle Crash	11	6.7%
Pedal Cycle Crash	0	0.0%
Pedestrian Crash	3	1.8%

' Rigid or Artic. Truck " Heavy Truck or Heavy Bus
These categories are NOT mutually exclusive

Location Type		
*Intersection	72	44.2%
Non intersection	91	55.8%

* Up to 10 metres from an intersection
~ 07:30-09:30 or 14:30-17:00 on school days

Collision Type		
Single Vehicle	42	25.8%
Multi Vehicle	121	74.2%

Road Classification		
Freeway/Motorway	0	0.0%
State Highway	0	0.0%
Other Classified Road	163	100.0%
Unclassified Road	0	0.0%

Contributing Factors		
Speeding	15	9.2%
Fatigue	15	9.2%
Alcohol	3	1.8%

Weather		
Fine	125	76.7%
Rain	18	11.0%
Overcast	17	10.4%
Fog or mist	2	1.2%
Other	0	0.0%

Road Surface Condition		
Wet	28	17.2%
Dry	135	82.8%
Snow or ice	0	0.0%

Natural Lighting		
Dawn	6	3.7%
Daylight	93	57.1%
Dusk	14	8.6%
Darkness	50	30.7%

Crash Movement		
Intersection, adjacent approaches	15	9.2%
Head-on (not overtaking)	5	3.1%
Opposing vehicles; turning	21	12.9%
U-turn	2	1.2%
Rear-end	65	39.9%
Lane change	7	4.3%
Parallel lanes; turning	0	0.0%
Vehicle leaving driveway	1	0.6%
Overtaking; same direction	0	0.0%
Hit parked vehicle	0	0.0%
Hit railway train	0	0.0%
Hit pedestrian	3	1.8%
Permanent obstruction on road	0	0.0%
Hit animal	3	1.8%
Off road, on straight	6	3.7%
Off road on straight, hit object	20	12.3%
Out of control on straight	3	1.8%
Off road, on curve	2	1.2%
Off road on curve, hit object	5	3.1%
Out of control on curve	1	0.6%
Other crash type	4	2.5%

Speed Limit				
40 km/h or less	0	0.0%	80 km/h zone	82	50.6%
50 km/h zone	15	9.3%	90 km/h zone	0	0.0%
60 km/h zone	39	24.1%	100 km/h zone	3	1.9%
70 km/h zone	23	14.2%	110 km/h zone	0	0.0%
~ 40km/h or less	0	0.0%			

CRASHES	163	
Fatal crash	0	0.0%
Injury crash	81	49.7%
Non-casualty crash	82	50.3%

CASUALTIES	108	
Killed	0	0.0%
Injured	108	100.0%
^ Unrestrained	2	1.9%

^ Belt fitted but not worn, No restraint fitted to position OR No helmet worn

Time Group		% of Day	
00:01 - 02:59	4	2.5%	12.5%
03:00 - 04:59	5	3.1%	8.3%
05:00 - 05:59	1	0.6%	4.2%
06:00 - 06:59	7	4.3%	4.2%
07:00 - 07:59	7	4.3%	4.2%
08:00 - 08:59	9	5.5%	4.2%
09:00 - 09:59	4	2.5%	4.2%
10:00 - 10:59	6	3.7%	4.2%
11:00 - 11:59	5	3.1%	4.2%
12:00 - 12:59	7	4.3%	4.2%
13:00 - 13:59	5	3.1%	4.2%
14:00 - 14:59	5	3.1%	4.2%
15:00 - 15:59	14	8.6%	4.2%
16:00 - 16:59	15	9.2%	4.2%
17:00 - 17:59	17	10.4%	4.2%
18:00 - 18:59	12	7.4%	4.2%
19:00 - 19:59	10	6.1%	4.2%
20:00 - 21:59	17	10.4%	8.3%
22:00 - 24:00	13	8.0%	8.3%

Street Lighting Off/Nil			% of Dark
19	of	50 in Dark	38.0%

Crashes		Casualties
18	2012	6
31	2011	17
36	2010	28
36	2009	32
29	2008	16
13	2007	9

~ School Travel Time		
Involvement	32	19.6%

McLean Periods			% Week
A	22	13.5%	17.9%
B	7	4.3%	7.1%
C	19	11.7%	17.9%
D	7	4.3%	3.5%
E	6	3.7%	3.6%
F	34	20.9%	10.7%
G	30	18.4%	7.1%
H	13	8.0%	7.1%
I	16	9.8%	12.5%
J	9	5.5%	10.7%

Day of the Week						# Holiday Periods		
Monday	17	10.4%	Thursday	24	14.7%	Sunday	19	11.7%
Tuesday	20	12.3%	Friday	31	19.0%	WEEKDAY	122	74.8%
Wednesday	30	18.4%	Saturday	22	13.5%	WEEKEND	41	25.2%

New Year	2	1.2%	Queen's BD	1	0.6%	Easter SH	2	1.2%
Aust. Day	2	1.2%	Labour Day	2	1.2%	June/July SH	5	3.1%
Easter	0	0.0%	Christmas	4	2.5%	Sept./Oct. SH	5	3.1%
Anzac Day	0	0.0%	January SH	15	9.2%	December SH	6	3.7%

Crashid dataset 5273 - Appin Rd - Narellan Rd to Church St inc 10m at intersections - July07 to June12

Percentages are percentages of all crashes. Unknown values for each category are not shown on this report.

Detailed Crash Report

NOTES: 5273 - Narellan Rd - Appin Rd to Gilchrist Dr inc 10m at intersections - July07 to June12

Crash No.	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																				S F
Sydney Region																				
Campbelltown City LGA																				
Bradbury																				
Appin Rd																				
736177	11/12/2010	Sat	08:20		at THE PARKWAY MS	XJN	STR	Fine	Dry	60	2	CAR	F35	S in APPIN RD	45	Proceeding in lane	I	0	1	
E43676641						RUM:	10	Cross traffic				TRK	M51	W in THE PARKWAY MS	15	Proceeding in lane				
Moore-Oxley Bypa																				
591388	28/09/2007	Fri	22:30		at NARELLAN RD	XJN	STR	Fine	Dry	60	2	CAR	M27	E in NARELLAN RD	50	Proceeding in lane	N	0	0	
E31266852						RUM:	10	Cross traffic				CAR	M51	S in MOORE-OXLEY BYPA	10	Proceeding in lane				
657361	24/02/2009	Tue	17:20		at NARELLAN RD	XJN	STR	Fine	Dry	60	2	CAR	F20	S in MOORE-OXLEY BYPA	15	Veering left	N	0	0	
E36867477						RUM:	35	Lane change left				CAR	F27	S in MOORE-OXLEY BYPA	60	Proceeding in lane				
715762	24/06/2010	Thu	12:05		at NARELLAN RD	XJN	STR	Fine	Dry	60	2	TRK	M46	N in MOORE-OXLEY BYPA	20	Turning right	I	0	1	S
E43698581						RUM:	21	Right through				CAR	M21	S in MOORE-OXLEY BYPA	75	Proceeding in lane				
759303	03/07/2011	Sun	09:50		at NARELLAN RD	XJN	STR	Fine	Dry	60	2	CAR	F35	S in MOORE-OXLEY BYPA	Unk	Proceeding in lane	N	0	0	
E45183340						RUM:	10	Cross traffic				4WD	M37	E in NARELLAN RD	Unk	Proceeding in lane				
Campbelltown																				
Appin Rd																				
648668	29/11/2008	Sat	20:20		at NARELLAN RD	XJN	CRV	Raining	Wet	60	3	CAR	M40	S in APPIN RD	Unk	Turning right	N	0	0	
E35554054						RUM:	13	Right near				CAR	M23	E in NARELLAN RD	Unk	Proceeding in lane				
												CAR	M40	W in NARELLAN RD	0	Wait turn right				
683610	17/09/2009	Thu	17:19		at NARELLAN RD	XJN	CRV	Overcast	Dry	60	2	CAR	M19	N in APPIN RD	50	Turning right	I	0	2	
E38493059						RUM:	21	Right through				CAR	F30	S in APPIN RD	60	Proceeding in lane				
597415	10/11/2007	Sat	14:41	10 m	S NARELLAN RD	XJN	STR	Fine	Dry	60	3	CAR	F36	N in APPIN RD	50	Proceeding in lane	I	0	1	
E32152562						RUM:	30	Rear end				CAR	F U	N in APPIN RD	50	Proceeding in lane				
												CAR	M33	N in APPIN RD	50	Proceeding in lane				
588675	05/09/2007	Wed	16:10		at THE PARKWAY MS	XJN	CRV	Fine	Dry	60	2	TRK	F47	N in APPIN RD	60	Turning right	N	0	0	
E31119115						RUM:	21	Right through				CAR	F U	S in APPIN RD	60	Proceeding in lane				
683528	01/09/2009	Tue	17:14		at THE PARKWAY MS	XJN	CRV	Fine	Dry	60	2	CAR	F29	N in APPIN RD	10	Turning right	I	0	2	
E39212665						RUM:	21	Right through				CAR	F32	S in APPIN RD	60	Proceeding in lane				
740953	09/01/2011	Sun	10:45		at THE PARKWAY MS	XJN	CRV	Overcast	Wet	60	2	CAR	F56	N in APPIN RD	40	Turning right	I	0	1	
E45490283						RUM:	21	Right through				CAR	F27	S in APPIN RD	60	Proceeding in lane				

Crash No.	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																					S F
742011	11/01/2011	Tue	06:15		at	THE PARKWAY MS	XJN	STR	Overcast	Dry	60	2	WAG	M37	S in APPIN RD	62	Proceeding in lane	N	0	0	S
E42947435							RUM:	10	Cross traffic				TRK	M21	E in THE PARKWAY MS	40	Proceeding in lane				
755622	01/06/2011	Wed	21:20		at	THE PARKWAY MS	XJN	CRV	Overcast	Wet	60	2	4WD	F21	N in APPIN RD	5	Turning right	N	0	0	
E44385752							RUM:	21	Right through				CAR	M52	S in APPIN RD	40	Proceeding in lane				
799144	08/06/2012	Fri	18:40		at	THE PARKWAY MS	XJN	CRV	Fine	Dry	60	2	CAR	M24	N in APPIN RD	20	Turning right	N	0	0	
E47723837							RUM:	21	Right through				OMV	M46	S in APPIN RD	50	Proceeding in lane				
Blaxland Rd																					
706740	15/04/2010	Thu	22:10	5 m	E	NARELLAN RD	XJN	STR	Fine	Dry	60	2	4WD	M36	W in BLAXLAND RD	5	Proceeding in lane	I	0	1	
E42865483							RUM:	32	Right rear				4WD	F26	W in BLAXLAND RD	0	Wait turn right				
680172	29/08/2009	Sat	10:00	10 m	N	NARELLAN RD	XJN	STR	Overcast	Wet	60	1	WAG	F42	W in NARELLAN RD	20	Turning right	I	0	1	S
E38159275							RUM:	81	Off left/rt bnd=>obj				Fence								
Gilchrist Dr																					
670746	27/05/2009	Wed	14:30	5 m	S	NARELLAN RD	XJN	STR	Raining	Wet	60	2	CAR	F29	N in GILCHRIST DR	1	Proceeding in lane	I	0	1	
E37150237							RUM:	30	Rear end				CAR	F55	N in GILCHRIST DR	Unk	Proceeding in lane				
607223	01/02/2008	Fri	07:45	5 m	W	NARELLAN RD	XJN	STR	Fine	Dry	60	2	4WD	F43	E in GILCHRIST DR	10	Proceeding in lane	I	0	1	
E32998471							RUM:	30	Rear end				CAR	F46	E in GILCHRIST DR	0	Stationary				
Hurley St																					
679821	11/08/2009	Tue	04:44	5 m	E	NARELLAN RD	XJN	STR	Fine	Dry	60	3	PLT	M45	W in HURLEY ST	Unk	Proceeding in lane	N	0	0	
E335135791							RUM:	30	Rear end				CAR	M41	S in NARELLAN RD	0	Stationary				
													CAR	F29	W in HURLEY ST	60	Proceeding in lane				
757102	17/06/2011	Fri	22:20	5 m	E	NARELLAN RD	XJN	STR	Fine	Dry	60	2	CAR	F76	W in HURLEY ST	40	Proceeding in lane	I	0	1	
E46567582							RUM:	30	Rear end				OMV	M28	W in HURLEY ST	0	Stationary				
698934	01/02/2010	Mon	17:45	10 m	N	NARELLAN RD	XJN	STR	Fine	Dry	60	2	CAR	F54	S in HURLEY ST	50	Proceeding in lane	N	0	0	
E39659175							RUM:	30	Rear end				CAR	F46	S in HURLEY ST	0	Stationary				
Kellicar Rd																					
709409	24/04/2010	Sat	11:15	5 m	W	NARELLAN RD	XJN	STR	Fine	Dry	60	2	CAR	F45	E in KELLICAR RD	Unk	Proceeding in lane	N	0	0	
E40425224							RUM:	30	Rear end				CAR	M22	E in KELLICAR RD	0	Stationary				
Moore-Oxley Bypa																					
693478	22/12/2009	Tue	19:10		at	NARELLAN RD	XJN	STR	Fine	Dry	60	2	WAG	F26	S in MOORE-OXLEY BYPA	Unk	Proceeding in lane	N	0	0	
E39517761							RUM:	10	Cross traffic				4WD	M38	E in NARELLAN RD	Unk	Proceeding in lane				
714543	17/06/2010	Thu	09:30		at	NARELLAN RD	XJN	STR	Fine	Dry	60	2	SEM	M64	S in MOORE-OXLEY BYPA	Unk	Proceeding in lane	N	0	0	
E41821442							RUM:	30	Rear end				CAR	M72	S in MOORE-OXLEY BYPA	Unk	Proceeding in lane				

Crash No.	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																				S F
726221	19/09/2010	Sun	07:55		at NARELLAN RD	XJN	STR	Fine	Dry	Unk	2	CAR	F17	E in NARELLAN RD	55	Proceeding in lane	N	0	0	
E41454710						RUM:	10	Cross traffic				4WD	M40	S in MOORE-OXLEY BYPA	30	Proceeding in lane				
703623	19/03/2010	Fri	17:25		at THE PARKWAY MS	XJN	STR	Fine	Dry	60	2	CAR	M54	S in MOORE-OXLEY BYPA	60	Proceeding in lane	N	0	0	
E77704402						RUM:	10	Cross traffic				WAG	F55	E in THE PARKWAY MS	20	Proceeding in lane				
740637	17/12/2010	Fri	20:10	10 m N	THE PARKWAY MS	XJN	CRV	Fine	Dry	60	1	M/C	M23	S in MOORE-OXLEY BYPA	Unk	Proceeding in lane	I	0	1	
E42857811						RUM:	88	Out of cont on bend												
787574	07/03/2012	Wed	19:10	10 m N	THE PARKWAY MS	XJN	CRV	Overcast	Dry	70	3	CAR	M26	S in MOORE-OXLEY BYPA	1	Proceeding in lane	N	0	0	
E47040736						RUM:	30	Rear end				WAG	F19	S in MOORE-OXLEY BYPA	0	Stationary				
												CAR	M87	S in MOORE-OXLEY BYPA	0	Stationary				
Narellan Rd																				
608852	20/12/2007	Thu	03:10	10 m W	APPIN RD	XJN	CRV	Overcast	Wet	60	1	WAG	M34	N in NARELLAN RD	120	Proceeding in lane	I	0	1	S
E34306984						RUM:	81	Off left/rt bnd=>obj				Tree/bush								
708452	04/05/2010	Tue	07:30	10 m W	APPIN RD	XJN	STR	Overcast	Dry	60	2	CAR	F29	E in NARELLAN RD	5	Proceeding in lane	I	0	1	
E41245474						RUM:	30	Rear end				TRK	M35	E in NARELLAN RD	0	Stationary				
588500	20/08/2007	Mon	11:50	25 m W	APPIN RD	OTH	STR	Overcast	Wet	60	2	CAR	F23	W in NARELLAN RD	40	Proceeding in lane	N	0	0	
E30972560						RUM:	30	Rear end				TRK	M U	W in NARELLAN RD	0	Stationary				
622808	22/04/2008	Tue	17:45		at BLAXLAND RD	XJN	STR	Fine	Dry	60	1	CAR	M17	W in NARELLAN RD	40	Proceeding in lane	N	0	0	
E33761403						RUM:	65	Temp roadworks				Roadwork equipment								
638506	18/09/2008	Thu	07:15		at BLAXLAND RD	XJN	STR	Fine	Dry	80	2	CAR	M36	W in NARELLAN RD	Unk	Proceeding in lane	N	0	0	
E35217262						RUM:	30	Rear end				CAR	M37	W in NARELLAN RD	0	Stationary				
657169	10/12/2008	Wed	20:00		at BLAXLAND RD	XJN	STR	Raining	Wet	60	5	4WD	F37	S in BLAXLAND RD	Unk	Turning right	I	0	3	
E35601617						RUM:	21	Right through				4WD	M24	S in BLAXLAND RD	Unk	Proceeding in lane				
												CAR	F33	S in BLAXLAND RD	Unk	Proceeding in lane				
												CAR	M42	N in BLAXLAND RD	Unk	Proceeding in lane				
												4WD	M39	S in BLAXLAND RD	Unk	Proceeding in lane				
655855	30/01/2009	Fri	20:35		at BLAXLAND RD	XJN	STR	Fine	Dry	60	3	CAR	M27	E in NARELLAN RD	25	Turning right	N	0	0	
E36583771						RUM:	11	Right far				CAR	M28	E in NARELLAN RD	25	Turning right				
												CAR	M28	S in BLAXLAND RD	60	Proceeding in lane				
679504	21/08/2009	Fri	12:50		at BLAXLAND RD	XJN	STR	Fine	Dry	60	2	CAR	F28	W in NARELLAN RD	10	Turning right	I	0	1	
E125935698						RUM:	21	Right through				CAR	M80	E in NARELLAN RD	60	Proceeding in lane				
740758	31/01/2011	Mon	14:16		at BLAXLAND RD	XJN	STR	Fine	Dry	80	3	CAR	M56	S in NARELLAN RD	80	Proceeding in lane	I	0	1	
E43492318						RUM:	10	Cross traffic				CAR	F26	W in BLAXLAND RD	60	Proceeding in lane				
												CAR	F24	W in BLAXLAND RD	50	Proceeding in lane				

Crash No.	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																					S F
742885	11/02/2011	Fri	08:30		at	BLAXLAND RD	XJN	STR	Fine	Dry	60	2	LOR	M65	W in NARELLAN RD	Unk	Turning right	I	0	1	
E43643545							RUM:	21	Right through				CAR	F22	E in NARELLAN RD	Unk	Proceeding in lane				
748683	09/04/2011	Sat	10:15		at	BLAXLAND RD	XJN	STR	Fine	Dry	60	2	CAR	M41	N in NARELLAN RD	60	Turning right	I	0	2	
E46713486							RUM:	13	Right near				CAR	F24	W in BLAXLAND RD	60	Proceeding in lane				
760517	15/07/2011	Fri	13:37		at	BLAXLAND RD	XJN	STR	Fine	Dry	60	3	SEM	M40	S in BLAXLAND RD	35	Proceeding in lane	I	0	1	
E144357498							RUM:	30	Rear end				CAR	F27	N in BLAXLAND RD	0	Stationary				
													CAR	M60	S in BLAXLAND RD	0	Stationary				
772768	15/09/2011	Thu	17:15		at	BLAXLAND RD	XJN	STR	Fine	Dry	60	2	OMV	U U	W in BLAXLAND RD	Unk	Proceeding in lane	N	0	0	
E45666754							RUM:	32	Right rear				CAR	F33	W in BLAXLAND RD	10	Turning right				
769661	16/09/2011	Fri	15:20		at	BLAXLAND RD	XJN	STR	Fine	Dry	60	2	BDBL	M47	W in BLAXLAND RD	10	Turning right	N	0	0	
E45419535							RUM:	36	Right turn sideswipe				CAR	F52	W in BLAXLAND RD	15	Turning right				
584586	03/08/2007	Fri	15:25	10 m	E	BLAXLAND RD	XJN	STR	Overcast	Wet	60	2	CAR	M17	S in BLAXLAND RD	40	Turning left	N	0	0	
E30718220							RUM:	12	Left far				CAR	M51	W in NARELLAN RD	Unk	Proceeding in lane				
642256	28/10/2008	Tue	14:50	10 m	E	BLAXLAND RD	XJN	STR	Fine	Dry	60	2	CAR	F60	W in NARELLAN RD	10	Proceeding in lane	I	0	1	
E35626250							RUM:	30	Rear end				CAR	F39	W in NARELLAN RD	0	Stationary				
697598	09/12/2009	Wed	18:00	50 m	E	BLAXLAND RD	DIV	STR	Fine	Dry	60	4	CAR	F24	W in NARELLAN RD	50	Proceeding in lane	I	0	4	
E39764743							RUM:	30	Rear end				CAR	F47	W in NARELLAN RD	0	Stationary				
													CAR	F38	W in NARELLAN RD	0	Wait turn right				
													CAR	F19	W in NARELLAN RD	0	Stationary				
620261	19/04/2008	Sat	21:20	100 m	E	BLAXLAND RD	DIV	STR	Raining	Wet	60	1	CAR	M23	E in NARELLAN RD	60	Proceeding in lane	N	0	0	F
E33370247							RUM:	73	Off rd rght => obj				Fence								
698416	03/02/2010	Wed	07:25	100 m	E	BLAXLAND RD	DIV	STR	Raining	Wet	80	2	CAR	F41	E in NARELLAN RD	70	Proceeding in lane	N	0	0	
E77099201							RUM:	30	Rear end				TRK	M U	E in NARELLAN RD	50	Proceeding in lane				
584599	03/08/2007	Fri	16:00	150 m	E	BLAXLAND RD	2WY	STR	Fine	Dry	60	3	WAG	M41	E in NARELLAN RD	35	Proceeding in lane	N	0	0	
E31040511							RUM:	30	Rear end				4WD	F43	E in NARELLAN RD	0	Stationary				
													CAR	F32	E in NARELLAN RD	0	Stationary				
648075	05/12/2008	Fri	18:55	300 m	E	BLAXLAND RD	DIV	STR	Fine	Dry	80	2	CAR	M25	E in NARELLAN RD	70	Proceeding in lane	N	0	0	
E36065677							RUM:	30	Rear end				CAR	F49	E in NARELLAN RD	55	Proceeding in lane				
679301	14/08/2009	Fri	14:45	400 m	E	BLAXLAND RD	DIV	STR	Fine	Dry	60	2	CAR	F62	W in NARELLAN RD	10	Proceeding in lane	N	0	0	
E38090423							RUM:	30	Rear end				TRK	M21	W in NARELLAN RD	0	Stationary				
689354	12/11/2009	Thu	16:30	5 m	N	BLAXLAND RD	XJN	STR	Raining	Wet	80	2	CAR	M29	S in NARELLAN RD	10	Proceeding in lane	I	0	1	
E39196721							RUM:	31	Left rear				M/C	M23	S in NARELLAN RD	0	Waiting turn left				

Detailed Crash Report

Transport Centre for Road Safety

Crash No.	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																				S F
751028	29/04/2011	Fri	06:30	10 m N	BLAXLAND RD	XJN	STR	Raining	Wet	60	2	CAR	F40	W in BLAXLAND RD	30	Turning right	N	0	0	
E44042517						RUM:	13	Right near				CAR	M30	S in NARELLAN RD	0	Wait turn right				
746294	19/03/2011	Sat	15:15	25 m S	BLAXLAND RD	DIV	STR	Raining	Wet	60	5	CAR	M22	N in NARELLAN RD	40	Proceeding in lane	N	0	0	
E44260068						RUM:	30	Rear end				CAR	F26	W in NARELLAN RD	0	Stationary				
												TRK	M18	N in NARELLAN RD	5	Proceeding in lane				
												CAR	M32	N in NARELLAN RD	0	Stationary				
												CAR	M39	N in NARELLAN RD	0	Stationary				
587299	25/08/2007	Sat	12:10	100 m S	BLAXLAND RD	DIV	STR	Fine	Dry	60	2	CAR	M18	S in NARELLAN RD	35	Proceeding in lane	N	0	0	
E31638551						RUM:	30	Rear end				CAR	M46	S in NARELLAN RD	0	Stationary				
637151	05/09/2008	Fri	17:50	100 m S	BLAXLAND RD	DIV	STR	Raining	Wet	60	5	CAR	F18	N in NARELLAN RD	40	Proceeding in lane	I	0	1	
E35274651						RUM:	30	Rear end				CAR	F26	N in NARELLAN RD	50	Proceeding in lane				
												CAR	M34	N in NARELLAN RD	Unk	Proceeding in lane				
												4WD	M44	N in NARELLAN RD	40	Proceeding in lane				
												CAR	F40	N in NARELLAN RD	Unk	Proceeding in lane				
669606	30/05/2009	Sat	12:30	100 m S	BLAXLAND RD	DIV	STR	Overcast	Dry	60	2	M/C	M U	S in NARELLAN RD	50	Proceeding in lane	I	0	1	
E37773368						RUM:	30	Rear end				OMV	U U	S in NARELLAN RD	Unk	Proceeding in lane				
681436	23/08/2009	Sun	12:35	100 m S	BLAXLAND RD	DIV	STR	Fine	Dry	60	2	CAR	M30	N in NARELLAN RD	30	Proceeding in lane	N	0	0	
E125948198						RUM:	30	Rear end				CAR	M41	N in NARELLAN RD	0	Stationary				
730237	28/10/2010	Thu	21:10	100 m S	BLAXLAND RD	DIV	STR	Fine	Dry	60	3	CAR	M49	N in NARELLAN RD	50	Proceeding in lane	I	0	2	
E43197378						RUM:	30	Rear end				CAR	M34	N in NARELLAN RD	0	Stationary				
												CAR	F47	N in NARELLAN RD	0	Wait turn right				
786559	02/03/2012	Fri	14:10	100 m S	BLAXLAND RD	DIV	STR	Raining	Wet	60	3	CAR	M22	N in NARELLAN RD	50	Proceeding in lane	N	0	0	
E49271689						RUM:	30	Rear end				CAR	F31	N in NARELLAN RD	0	Stationary				
												4WD	M36	N in NARELLAN RD	0	Stationary				
709572	08/05/2010	Sat	12:55	150 m S	BLAXLAND RD	DIV	STR	Fine	Dry	60	3	CAR	F U	N in NARELLAN RD	60	Proceeding in lane	I	0	1	
E41590241						RUM:	30	Rear end				CAR	M38	N in NARELLAN RD	0	Stationary				
												TRK	M20	N in NARELLAN RD	45	Proceeding in lane				
588441	08/08/2007	Wed	16:00	200 m S	BLAXLAND RD	2WY	STR	Fine	Dry	80	3	CAR	F17	S in NARELLAN RD	70	Proceeding in lane	I	0	2	
E31050061						RUM:	30	Rear end				CAR	F24	S in NARELLAN RD	50	Proceeding in lane				
												CAR	F70	S in NARELLAN RD	50	Proceeding in lane				
674842	07/07/2009	Tue	08:30	200 m S	BLAXLAND RD	DIV	STR	Fine	Dry	60	4	UTE	M29	S in NARELLAN RD	15	Proceeding in lane	I	0	1	
E37781447						RUM:	30	Rear end				CAR	F51	S in NARELLAN RD	0	Stationary				
												CAR	M24	S in NARELLAN RD	0	Stationary				
												CAR	M29	S in NARELLAN RD	0	Stationary				

Crash No.	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																				S F
710823	14/05/2010	Fri	16:45	200 m S	BLAXLAND RD	DIV	STR	Fine	Dry	60	2	CAR	M26	N in NARELLAN RD	Unk	Proceeding in lane	N	0	0	
E40848659						RUM:	30	Rear end				TRK	M21	N in NARELLAN RD	0	Stationary				
696836	16/01/2010	Sat	15:30	300 m S	BLAXLAND RD	DIV	STR	Overcast	Dry	60	3	CAR	F36	N in NARELLAN RD	50	Proceeding in lane	N	0	0	
E40070177						RUM:	30	Rear end				CAR	M27	N in NARELLAN RD	0	Stationary				
												CAR	F52	N in NARELLAN RD	0	Stationary				
766759	31/08/2011	Wed	09:10	400 m S	BLAXLAND RD	DIV	STR	Fine	Dry	80	2	CAR	M32	S in NARELLAN RD	80	Proceeding in lane	I	0	1	F
E45729950						RUM:	30	Rear end				CAR	F46	S in NARELLAN RD	0	Stationary				
816540	24/05/2012	Thu	16:00	10 m W	BLAXLAND RD	XJN	STR	Raining	Wet	70	2	TRK	M21	E in NARELLAN RD	Unk	Proceeding in lane	I	0	1	
E49070752						RUM:	30	Rear end				WAG	F32	E in NARELLAN RD	0	Stationary				
714253	03/06/2010	Thu	06:15	at	GILCHRIST DR	XJN	STR	Raining	Wet	60	2	CAR	F39	S in NARELLAN RD	15	Turning right	I	0	2	
E41360162						RUM:	21	Right through				CAR	M45	N in NARELLAN RD	55	Proceeding in lane				
778256	17/12/2011	Sat	10:00	at	GILCHRIST DR	XJN	STR	Fine	Dry	50	2	UTE	M21	S in NARELLAN RD	20	Turning right	I	0	1	
E46287423						RUM:	11	Right far				CAR	M72	W in GILCHRIST DR	50	Proceeding in lane				
692075	28/11/2009	Sat	15:50	5 m E	GILCHRIST DR	XJN	STR	Fine	Dry	60	2	CAR	M22	W in NARELLAN RD	50	Proceeding in lane	N	0	0	
E39275534						RUM:	30	Rear end				CAR	M44	W in NARELLAN RD	0	Stationary				
729508	08/10/2010	Fri	12:30	10 m E	GILCHRIST DR	XJN	STR	Fine	Dry	60	2	CAR	M18	W in NARELLAN RD	10	Proceeding in lane	I	0	1	
E254160892						RUM:	30	Rear end				M/C	M71	W in NARELLAN RD	0	Stationary				
698589	06/02/2010	Sat	12:30	200 m E	GILCHRIST DR	DIV	CRV	Overcast	Unk	60	3	CAR	M18	E in NARELLAN RD	70	Proceeding in lane	I	0	3	S
E130699897						RUM:	30	Rear end				CAR	F36	E in NARELLAN RD	0	Stationary				
												CAR	F44	E in NARELLAN RD	0	Stationary				
724951	04/05/2010	Tue	12:30	5 m S	GILCHRIST DR	XJN	STR	Fine	Dry	60	2	CAR	M41	N in NARELLAN RD	20	Proceeding in lane	I	0	1	
E44141489						RUM:	31	Left rear				CAR	F55	N in NARELLAN RD	0	Waiting turn left				
747235	29/03/2011	Tue	08:30	100 m S	GILCHRIST DR	DIV	STR	Fine	Dry	70	2	CAR	M21	N in NARELLAN RD	Unk	Proceeding in lane	N	0	0	
E637987190						RUM:	30	Rear end				4WD	M45	N in NARELLAN RD	Unk	Proceeding in lane				
589362	12/09/2007	Wed	17:10	200 m S	GILCHRIST DR	2WY	STR	Fine	Dry	80	3	TRK	M56	S in NARELLAN RD	20	Proceeding in lane	N	0	0	
E32150541						RUM:	30	Rear end				4WD	F U	S in NARELLAN RD	0	Stationary				
												CAR	M47	S in NARELLAN RD	0	Stationary				
600322	02/12/2007	Sun	05:35	at	HURLEY ST	XJN	STR	Fine	Dry	60	2	VAN	F22	S in HURLEY ST	60	Proceeding in lane	I	0	1	
E32375731						RUM:	10	Cross traffic				CAR	F39	E in NARELLAN RD	60	Proceeding in lane				
626320	07/06/2008	Sat	18:25	at	HURLEY ST	XJN	STR	Fine	Dry	60	2	CAR	F27	W in NARELLAN RD	Unk	Turning right	N	0	0	
E34362177						RUM:	21	Right through				CAR	F22	E in NARELLAN RD	Unk	Proceeding in lane				
721003	10/08/2010	Tue	10:14	at	HURLEY ST	XJN	STR	Raining	Wet	60	2	TRK	F46	E in HURLEY ST	20	Turning right	N	0	0	
E41625611						RUM:	21	Right through				LOR	M27	W in HURLEY ST	Unk	Proceeding in lane				

Crash No.	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																				S F
589157	05/09/2007	Wed	18:25	60 m E	HURLEY ST	DIV	STR	Raining	Wet	60	4	CAR	M19	E in NARELLAN RD	Unk	Proceeding in lane	N	0	0	
E31729428						RUM:	30	Rear end				CAR	F20	E in NARELLAN RD	0	Stationary				
												CAR	F27	E in NARELLAN RD	0	Stationary				
												4WD	M36	NARELLAN RD	0	Stationary				
699808	31/12/2009	Thu	17:30	100 m E	HURLEY ST	DIV	STR	Fine	Dry	60	2	CAR	M22	E in NARELLAN RD	45	Proceeding in lane	N	0	0	
E39232937						RUM:	30	Rear end				CAR	F70	E in NARELLAN RD	0	Stationary				
696166	23/11/2009	Mon	15:55	5 m N	HURLEY ST	XJN	STR	Overcast	Wet	60	3	TRK	M29	W in HURLEY ST	20	Turning right	I	0	2	
E41104489						RUM:	13	Right near				TRK	M24	S in NARELLAN RD	10	Proceeding in lane				
												CAR	M44	S in NARELLAN RD	Unk	Proceeding in lane				
710989	18/05/2010	Tue	12:20	5 m N	HURLEY ST	XJN	STR	Overcast	Wet	60	2	VAN	F21	W in HURLEY ST	30	Turning right	I	0	1	
E41527342						RUM:	13	Right near				CAR	F57	S in NARELLAN RD	0	Stationary				
635674	22/08/2008	Fri	10:25	10 m N	HURLEY ST	XJN	STR	Raining	Wet	60	2	CAR	F18	W in HURLEY ST	Unk	Turning right	I	0	2	
E35126507						RUM:	13	Right near				CAR	U U	S in NARELLAN RD	Unk	Proceeding in lane				
705126	30/03/2010	Tue	10:55	10 m N	HURLEY ST	XJN	STR	Overcast	Wet	50	2	TRK	M36	W in HURLEY ST	40	Turning right	N	0	0	
E39975430						RUM:	13	Right near				CAR	M24	S in NARELLAN RD	0	Stationary				
605357	18/01/2008	Fri	19:20	40 m N	HURLEY ST	DIV	STR	Raining	Wet	60	3	CAR	F31	N in NARELLAN RD	20	Incorrect side	N	0	0	
E63430601						RUM:	20	Head on				TRK	M35	S in NARELLAN RD	20	Proceeding in lane				
												CAR	F31	S in NARELLAN RD	20	Proceeding in lane				
603583	27/12/2007	Thu	16:20	10 m S	HURLEY ST	XJN	STR	Fine	Dry	60	2	CAR	F27	S in NARELLAN RD	50	Proceeding in lane	N	0	0	
E32877967						RUM:	30	Rear end				CAR	F29	S in NARELLAN RD	5	Proceeding in lane				
718967	28/07/2010	Wed	15:20	5 m W	HURLEY ST	XJN	STR	Raining	Wet	60	1	CAR	F65	S in HURLEY ST	20	Turning right	N	0	0	S
E41445923						RUM:	81	Off left/rt bnd=>obj				Fence								
605997	18/01/2008	Fri	17:15	20 m W	HURLEY ST	2WY	STR	Raining	Wet	60	2	CAR	F20	W in NARELLAN RD	40	Proceeding in lane	N	0	0	
E34470889						RUM:	30	Rear end				CAR	M30	W in NARELLAN RD	0	Stationary				
684122	24/09/2009	Thu	15:45	at	HYDE PDE	TJN	STR	Fine	Dry	50	2	CAR	U U	N in HYDE PDE	5	Proceeding in lane	I	0	2	
E38665734						RUM:	10	Cross traffic				CAR	F38	W in NARELLAN RD	Unk	Proceeding in lane				
681848	12/09/2009	Sat	07:55	50 m N	HYDE PDE	DIV	STR	Fine	Dry	60	1	CAR	M32	N in NARELLAN RD	80	Proceeding in lane	N	0	0	S
E38155237						RUM:	71	Off rd left => obj				Tree/bush								
598590	24/07/2007	Tue	11:30	at	KELLICAR RD	XJN	STR	Fine	Dry	60	2	OMV	M38	S in KELLICAR RD	Unk	Turning right	N	0	0	
E31073279						RUM:	21	Right through				CAR	M41	N in KELLICAR RD	40	Proceeding in lane				
586257	19/08/2007	Sun	11:00	at	KELLICAR RD	XJN	STR	Raining	Wet	60	2	CAR	F U	W in KELLICAR RD	40	Turning right	I	0	2	
E30877020						RUM:	21	Right through				CAR	M27	E in KELLICAR RD	0	Stationary				

Crash No.	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																				S F
629441	16/02/2008	Sat	12:30		at KELLICAR RD	XJN	STR	Fine	Dry	60	2	TRK	U U	S in KELLICAR RD	Unk	Proceeding in lane	I	0	1	
E32794123						RUM:	0	Ped nearside				PED	M14	KELLICAR RD		Walk across carriageway				
615296	07/03/2008	Fri	21:30		at KELLICAR RD	XJN	STR	Raining	Wet	60	3	CAR	M17	S in KELLICAR RD	10	Turning right	N	0	0	
E64383401						RUM:	21	Right through				TRK	M56	N in NARELLAN RD	10	Proceeding in lane				
												CAR	M18	N in KELLICAR RD	10	Proceeding in lane				
620375	21/04/2008	Mon	06:45		at KELLICAR RD	XJN	STR	Overcast	Wet	60	2	TRK	M36	W in NARELLAN RD	Unk	Turning right	I	0	1	
E33546534						RUM:	21	Right through				CAR	M29	E in NARELLAN RD	Unk	Proceeding in lane				
620756	25/04/2008	Fri	21:01		at KELLICAR RD	XJN	STR	Fine	Dry	60	2	CAR	M24	W in NARELLAN RD	15	Turning right	N	0	0	
E33856549						RUM:	21	Right through				WAG	F47	E in NARELLAN RD	55	Proceeding in lane				
626348	08/06/2008	Sun	12:20		at KELLICAR RD	XJN	STR	Fine	Dry	60	2	OMV	U U	N in NARELLAN RD	Unk	Proceeding in lane	N	0	0	
E34013813						RUM:	32	Right rear				CAR	M42	N in NARELLAN RD	10	Turning right				
626845	16/06/2008	Mon	19:40		at KELLICAR RD	XJN	STR	Raining	Wet	60	1	M/C	M45	S in NARELLAN RD	55	Turning left	N	0	0	
E34231505						RUM:	74	On road-out of cont.												
645801	15/11/2008	Sat	12:20		at KELLICAR RD	XJN	STR	Overcast	Dry	60	3	CAR	M46	S in NARELLAN RD	5	Turning right	I	0	2	
E35615518						RUM:	21	Right through				CAR	F26	N in NARELLAN RD	60	Proceeding in lane				
												CAR	M33	E in KELLICAR RD	0	Wait turn right				
661938	31/03/2009	Tue	12:10		at KELLICAR RD	XJN	STR	Raining	Wet	60	4	CAR	M58	W in KELLICAR RD	Unk	Turning right	N	0	0	
E36948561						RUM:	13	Right near				CAR	F31	S in NARELLAN RD	0	Stationary				
												CAR	F22	S in NARELLAN RD	0	Stationary				
												CAR	F33	N in NARELLAN RD	0	Stationary				
663167	09/04/2009	Thu	08:15		at KELLICAR RD	XJN	STR	Fine	Dry	60	2	CAR	F30	W in KELLICAR RD	Unk	Turning right	I	0	2	
E37101005						RUM:	21	Right through				WAG	M50	E in KELLICAR RD	Unk	Proceeding in lane				
707645	24/11/2009	Tue	10:30		at KELLICAR RD	XJN	STR	Overcast	Dry	50	2	CAR	U U	W in NARELLAN RD	Unk	Proceeding in lane	I	0	1	
E127554998						RUM:	33	Lane sideswipe				CAR	F25	W in NARELLAN RD	5	Proceeding in lane				
691811	08/12/2009	Tue	05:20		at KELLICAR RD	XJN	STR	Fine	Dry	60	1	M/C	M26	W in NARELLAN RD	10	Turning left	I	0	1	S
E39314564						RUM:	88	Out of cont on bend												
722867	13/08/2010	Fri	17:00		at KELLICAR RD	XJN	STR	Fine	Dry	60	2	CAR	F51	S in KELLICAR RD	20	Turning right	I	0	2	
E43872984						RUM:	21	Right through				4WD	F47	N in KELLICAR RD	60	Proceeding in lane				
724601	07/09/2010	Tue	07:58		at KELLICAR RD	XJN	STR	Fine	Dry	60	5	CAR	F56	E in KELLICAR RD	20	Proceeding in lane	I	0	3	
E42094004						RUM:	10	Cross traffic				CAR	F23	W in KELLICAR RD	0	Stationary				
												CAR	F23	S in NARELLAN RD	60	Proceeding in lane				
												PED	F33	NARELLAN RD		Other ped manoeuvre				
												PED	F37	NARELLAN RD		Other ped manoeuvre				

Crash No.	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																					S F
729258	22/10/2010	Fri	12:10		at	KELLICAR RD	XJN	STR	Fine	Dry	60	2	CAR	F51	E in KELLICAR RD	20	Proceeding in lane	N	0	0	
E44550784							RUM:	33	Lane sideswipe				LOR	M59	E in KELLICAR RD	20	Proceeding in lane				
787896	06/03/2012	Tue	10:40		at	KELLICAR RD	XJN	STR	Overcast	Dry	60	2	MOP	M25	W in KELLICAR RD	Unk	Turning right	I	0	1	
E47796842							RUM:	21	Right through				CAR	F60	E in KELLICAR RD	40	Proceeding in lane				
717791	13/07/2010	Tue	17:20	300 m	E	KELLICAR RD	DIV	CRV	Fine	Wet	60	3	CAR	F60	E in NARELLAN RD	45	Proceeding in lane	I	0	2	
E140975496							RUM:	30	Rear end				CAR	F26	E in NARELLAN RD	0	Stationary				
													CAR	M81	E in NARELLAN RD	0	Stationary				
637088	22/08/2008	Fri	16:20	5 m	N	KELLICAR RD	XJN	STR	Raining	Wet	60	2	CAR	F47	S in NARELLAN RD	15	Proceeding in lane	I	0	1	
E37218486							RUM:	31	Left rear				CAR	F45	S in NARELLAN RD	0	Waiting turn left				
710733	08/05/2010	Sat	11:05	5 m	N	KELLICAR RD	XJN	STR	Fine	Dry	60	2	TRK	M23	S in NARELLAN RD	60	Proceeding in lane	N	0	0	
E41652965							RUM:	30	Rear end				CAR	M27	S in NARELLAN RD	0	Stationary				
648883	11/12/2008	Thu	12:15	10 m	N	KELLICAR RD	XJN	STR	Raining	Wet	60	3	TRK	F34	W in KELLICAR RD	40	Turning right	I	0	1	
E35887805							RUM:	13	Right near				CAR	F28	S in NARELLAN RD	0	Wait turn right				
													CAR	F51	S in NARELLAN RD	0	Stationary				
708469	05/05/2010	Wed	08:45	10 m	N	KELLICAR RD	XJN	STR	Overcast	Wet	60	2	VAN	F41	W in KELLICAR RD	Unk	Turning right	N	0	0	
E40896004							RUM:	13	Right near				CAR	M23	S in NARELLAN RD	0	Stationary				
630552	04/07/2008	Fri	10:50	15 m	N	KELLICAR RD	DIV	STR	Raining	Wet	60	2	CAR	M47	N in NARELLAN RD	20	Incorrect side	I	0	1	
E34312406							RUM:	20	Head on				CAR	M61	S in NARELLAN RD	Unk	Proceeding in lane				
600187	28/11/2007	Wed	16:10	20 m	N	KELLICAR RD	2WY	STR	Fine	Dry	70	2	CAR	M43	S in NARELLAN RD	50	Proceeding in lane	I	0	1	
E465256090							RUM:	30	Rear end				CAR	F42	S in NARELLAN RD	0	Stationary				
748494	10/04/2011	Sun	14:40	35 m	N	KELLICAR RD	DIV	STR	Raining	Wet	60	2	CAR	M58	N in NARELLAN RD	60	Proceeding in lane	I	0	1	
E43964075							RUM:	30	Rear end				UTE	M42	N in NARELLAN RD	Unk	Proceeding in lane				
634951	15/08/2008	Fri	15:15	50 m	N	KELLICAR RD	DIV	STR	Fine	Dry	30	2	CAR	F42	S in NARELLAN RD	Unk	Proceeding in lane	N	0	0	
E34886862							RUM:	30	Rear end				WAG	M23	S in NARELLAN RD	0	Stationary				
692671	21/11/2009	Sat	11:44	200 m	N	KELLICAR RD	DIV	STR	Fine	Dry	60	3	4WD	F24	S in NARELLAN RD	30	Proceeding in lane	I	0	2	
E38836570							RUM:	30	Rear end				CAR	F17	S in NARELLAN RD	0	Stationary				
													CAR	M47	S in NARELLAN RD	0	Stationary				
750903	17/03/2011	Thu	14:20	200 m	N	KELLICAR RD	DIV	STR	Fine	Dry	60	2	CAR	M40	N in NARELLAN RD	60	Proceeding in lane	I	0	1	
E84756902							RUM:	30	Rear end				4WD	M32	N in NARELLAN RD	0	Stationary				
729322	23/10/2010	Sat	17:00	300 m	N	KELLICAR RD	DIV	STR	Overcast	Dry	60	3	CAR	M23	N in NARELLAN RD	50	Proceeding in lane	I	0	2	
E176708094							RUM:	30	Rear end				CAR	F38	N in NARELLAN RD	10	Proceeding in lane				
													CAR	F40	N in NARELLAN RD	20	Proceeding in lane				
677982	11/07/2009	Sat	10:20	5 m	S	KELLICAR RD	XJN	STR	Fine	Dry	60	2	CAR	M32	N in NARELLAN RD	Unk	Proceeding in lane	N	0	0	
E37506930							RUM:	30	Rear end				4WD	F34	N in NARELLAN RD	0	Stationary				

Detailed Crash Report

Transport Centre for Road Safety — NSW Government

Crash No.	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																					S F
681581	03/09/2009	Thu	17:07	5 m	S	KELLICAR RD	XJN	STR	Fine	Dry	Unk	4	CAR	F35	E in KELLICAR RD	7	Turning right	N	0	0	
E38430348							RUM:	13	Right near				CAR	F30	N in NARELLAN RD	0	Stationary				
													CAR	F31	N in NARELLAN RD	0	Stationary				
													CAR	F29	N in NARELLAN RD	0	Stationary				
747065	23/03/2011	Wed	10:45	5 m	S	KELLICAR RD	XJN	CRV	Fine	Dry	60	3	SEM	M35	W in NARELLAN RD	Unk	Proceeding in lane	I	0	1	
E43660417							RUM:	30	Rear end				CAR	M61	W in NARELLAN RD	0	Stationary				
													BUS	M74	W in NARELLAN RD	0	Wait turn right				
768750	20/09/2011	Tue	10:30	5 m	S	KELLICAR RD	XJN	STR	Fine	Dry	60	2	TRK	M39	N in NARELLAN RD	50	Proceeding in lane	N	0	0	
E45548422							RUM:	30	Rear end				CAR	M17	N in NARELLAN RD	0	Stationary				
782640	13/12/2011	Tue	13:00	10 m	S	KELLICAR RD	XJN	STR	Fine	Dry	60	2	CAR	F26	N in NARELLAN RD	5	Veering right	N	0	0	
E46377405							RUM:	34	Lane change right				CAR	M65	N in NARELLAN RD	20	Proceeding in lane				
639362	23/09/2008	Tue	08:45	35 m	S	KELLICAR RD	DIV	STR	Raining	Wet	60	1	CAR	F31	S in NARELLAN RD	15	Proceeding in lane	N	0	0	
E34768952							RUM:	71	Off rd left => obj				Traffic island etc								
652336	31/12/2008	Wed	20:55	50 m	S	KELLICAR RD	DIV	STR	Fine	Dry	60	2	CAR	M25	S in NARELLAN RD	Unk	Proceeding in lane	I	0	1	
E37291555							RUM:	30	Rear end				CAR	F30	S in NARELLAN RD	0	Stationary				
724736	15/09/2010	Wed	12:00	200 m	W	KELLICAR RD	DIV	STR	Fine	Dry	60	3	TRK	M21	W in NARELLAN RD	50	Proceeding in lane	N	0	0	
E41815517							RUM:	30	Rear end				4WD	M83	W in NARELLAN RD	0	Stationary				
													CAR	F21	W in NARELLAN RD	0	Stationary				
698679	09/02/2010	Tue	16:45	10 m	W	MOORE-OXLEY BYPA	XJN	STR	Fine	Dry	60	2	TRK	M61	E in NARELLAN RD	55	Proceeding in lane	N	0	0	
E39429460							RUM:	30	Rear end				CAR	M18	E in NARELLAN RD	0	Stationary				
679238	11/08/2009	Tue	09:40	70 m	W	MOORE-OXLEY BYPA	DIV	CRV	Raining	Wet	60	1	CAR	F47	W in NARELLAN RD	25	Proceeding in lane	N	0	0	S
E38093927							RUM:	81	Off left/rt bnd=>obj				Tree/bush								
Glen Alpine																					
Gilchrist Dr																					
672984	29/06/2009	Mon	12:50	5 m	S	NARELLAN RD	XJN	STR	Fine	Dry	60	2	CAR	M34	E in NARELLAN RD	Unk	Turning right	I	0	1	
E38165577							RUM:	30	Rear end				CAR	F39	S in GILCHRIST DR	0	Stationary				

Report Totals: Total Crashes: 129 Fatal Crashes: 0 Injury Crashes: 63 Killed: 0 Injured: 88

Crashid dataset 5273 - Narellan Rd - Appin Rd to Gilchrist Dr inc 10m at intersections - July07 to June12

Summary Crash Report

Transport Centre for Road Safety

# Crash Type		
Car Crash	123	95.3%
Light Truck Crash	25	19.4%
Rigid Truck Crash	3	2.3%
Articulated Truck Crash	4	3.1%
'Heavy Truck Crash	(7)	(5.4%)
Bus Crash	1	0.8%
"Heavy Vehicle Crash	(7)	(5.4%)
Emergency Vehicle Crash	0	0.0%
Motorcycle Crash	7	5.4%
Pedal Cycle Crash	0	0.0%
Pedestrian Crash	2	1.6%

' Rigid or Artic. Truck " Heavy Truck or Heavy Bus
These categories are NOT mutually exclusive

Location Type		
*Intersection	89	69.0%
Non intersection	40	31.0%

* Up to 10 metres from an intersection
~ 07:30-09:30 or 14:30-17:00 on school days

Collision Type		
Single Vehicle	11	8.5%
Multi Vehicle	118	91.5%

Road Classification		
Freeway/Motorway	0	0.0%
State Highway	0	0.0%
Other Classified Road	125	96.9%
Unclassified Road	4	3.1%

Contributing Factors		
Speeding	9	7.0%
Fatigue	2	1.6%
Alcohol	1	0.8%

Weather		
Fine	79	61.2%
Rain	28	21.7%
Overcast	22	17.1%
Fog or mist	0	0.0%
Other	0	0.0%

Road Surface Condition		
Wet	40	31.3%
Dry	88	68.8%
Snow or ice	0	0.0%

Natural Lighting		
Dawn	4	3.1%
Daylight	94	72.9%
Dusk	9	7.0%
Darkness	22	17.1%

Crash Movement		
Intersection, adjacent approaches	25	19.4%
Head-on (not overtaking)	2	1.6%
Opposing vehicles; turning	22	17.1%
U-turn	0	0.0%
Rear-end	63	48.8%
Lane change	4	3.1%
Parallel lanes; turning	1	0.8%
Vehicle leaving driveway	0	0.0%
Overtaking; same direction	0	0.0%
Hit parked vehicle	0	0.0%
Hit railway train	0	0.0%
Hit pedestrian	1	0.8%
Permanent obstruction on road	0	0.0%
Hit animal	0	0.0%
Off road, on straight	0	0.0%
Off road on straight, hit object	3	2.3%
Out of control on straight	1	0.8%
Off road, on curve	0	0.0%
Off road on curve, hit object	2	1.6%
Out of control on curve	1	0.8%
Other crash type	4	3.1%

Speed Limit					
40 km/h or less	1	0.8%	~ 40km/h or less	1	3.4%
50 km/h zone	4	3.1%	80 km/h zone	8	6.3%
60 km/h zone	110	86.6%	90 km/h zone	0	0.0%
70 km/h zone	4	3.1%	100 km/h zone	0	0.0%
			110 km/h zone	0	0.0%

CRASHES	129	
Fatal crash	0	0.0%
Injury crash	63	48.8%
Non-casualty crash	66	51.2%

CASUALTIES	88	
Killed	0	0.0%
Injured	88	100.0%
^ Unrestrained	0	0.0%

^ Belt fitted but not worn, No restraint fitted to position OR No helmet worn

Time Group		% of Day	
00:01 - 02:59	0	0.0%	12.5%
03:00 - 04:59	2	1.6%	8.3%
05:00 - 05:59	2	1.6%	4.2%
06:00 - 06:59	4	3.1%	4.2%
07:00 - 07:59	7	5.4%	4.2%
08:00 - 08:59	7	5.4%	4.2%
09:00 - 09:59	4	3.1%	4.2%
10:00 - 10:59	13	10.1%	4.2%
11:00 - 11:59	6	4.7%	4.2%
12:00 - 12:59	18	14.0%	4.2%
13:00 - 13:59	2	1.6%	4.2%
14:00 - 14:59	8	6.2%	4.2%
15:00 - 15:59	9	7.0%	4.2%
16:00 - 16:59	10	7.8%	4.2%
17:00 - 17:59	15	11.6%	4.2%
18:00 - 18:59	5	3.9%	4.2%
19:00 - 19:59	4	3.1%	4.2%
20:00 - 21:59	10	7.8%	8.3%
22:00 - 24:00	3	2.3%	8.3%

Street Lighting Off/Nil			% of Dark
2	of	22 in Dark	9.1%

Crashes		Casualties
5	2012	2
21	2011	12
32	2010	25
29	2009	25
26	2008	16
16	2007	8

~ School Travel Time		
Involvement	29	22.5%

McLean Periods			% Week
A	18	14.0%	17.9%
B	4	3.1%	7.1%
C	31	24.0%	17.9%
D	14	10.9%	3.5%
E	6	4.7%	3.6%
F	19	14.7%	10.7%
G	23	17.8%	7.1%
H	6	4.7%	7.1%
I	1	0.8%	12.5%
J	7	5.4%	10.7%

Day of the Week						# Holiday Periods		
Monday	7	5.4%	Thursday	18	14.0%	Sunday	8	6.2%
Tuesday	26	20.2%	Friday	30	23.3%	WEEKDAY	98	76.0%
Wednesday	17	13.2%	Saturday	23	17.8%	WEEKEND	31	24.0%

New Year	0	0.0%	Queen's BD	3	2.3%	Easter SH	8	6.2%
Aust. Day	0	0.0%	Labour Day	1	0.8%	June/July SH	4	3.1%
Easter	1	0.8%	Christmas	3	2.3%	Sept./Oct. SH	2	1.6%
Anzac Day	2	1.6%	January SH	5	3.9%	December SH	4	3.1%

Crashid dataset 5273 - Narellan Rd - Appin Rd to Gilchrist Dr inc 10m at intersections - July07 to June12

Percentages are percentages of all crashes. Unknown values for each category are not shown on this report.

Detailed Crash Report

NOTES: 5273 - Oxley St - Narellan Rd to Camden Rd inc 10m at intersections - July07 to June12

Crash No.	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																					S F
Sydney Region																					
Campbelltown City LGA																					
Bradbury																					
Appin Rd																					
736177	11/12/2010	Sat	08:20		at	THE PARKWAY MS	XJN	STR	Fine	Dry	60	2	CAR	F35	S in APPIN RD	45 Proceeding in lane		I	0	1	
E43676641							RUM:	10	Cross traffic				TRK	M51	W in THE PARKWAY MS	15 Proceeding in lane					
Moore-Oxley Bypa																					
605828	12/01/2008	Sat	11:45		at	ART GALLERY RD	TJN	STR	Fine	Dry	60	1	CAR	F59	E in ART GALLERY RD	Unk Proceeding in lane		N	0	0	
E33298341							RUM:	71	Off rd left => obj				Fence								
591388	28/09/2007	Fri	22:30		at	NARELLAN RD	XJN	STR	Fine	Dry	60	2	CAR	M27	E in NARELLAN RD	50 Proceeding in lane		N	0	0	
E31266852							RUM:	10	Cross traffic				CAR	M51	S in MOORE-OXLEY BYPA	10 Proceeding in lane					
657361	24/02/2009	Tue	17:20		at	NARELLAN RD	XJN	STR	Fine	Dry	60	2	CAR	F20	S in MOORE-OXLEY BYPA	15 Veering left		N	0	0	
E36867477							RUM:	35	Lane change left				CAR	F27	S in MOORE-OXLEY BYPA	60 Proceeding in lane					
715762	24/06/2010	Thu	12:05		at	NARELLAN RD	XJN	STR	Fine	Dry	60	2	TRK	M46	N in MOORE-OXLEY BYPA	20 Turning right		I	0	1	S
E43698581							RUM:	21	Right through				CAR	M21	S in MOORE-OXLEY BYPA	75 Proceeding in lane					
759303	03/07/2011	Sun	09:50		at	NARELLAN RD	XJN	STR	Fine	Dry	60	2	CAR	F35	S in MOORE-OXLEY BYPA	Unk Proceeding in lane		N	0	0	
E45183340							RUM:	10	Cross traffic				4WD	M37	E in NARELLAN RD	Unk Proceeding in lane					
Campbelltown																					
Appin Rd																					
648668	29/11/2008	Sat	20:20		at	NARELLAN RD	XJN	CRV	Raining	Wet	60	3	CAR	M40	S in APPIN RD	Unk Turning right		N	0	0	
E35554054							RUM:	13	Right near				CAR	M23	E in NARELLAN RD	Unk Proceeding in lane					
													CAR	M40	W in NARELLAN RD	0 Wait turn right					
683610	17/09/2009	Thu	17:19		at	NARELLAN RD	XJN	CRV	Overcast	Dry	60	2	CAR	M19	N in APPIN RD	50 Turning right		I	0	2	
E38493059							RUM:	21	Right through				CAR	F30	S in APPIN RD	60 Proceeding in lane					
637137	03/09/2008	Wed	11:15	50 m	N	NARELLAN RD	DIV	CRV	Raining	Wet	60	2	CAR	F22	N in APPIN RD	30 Incorrect side		N	0	0	S
E37320586							RUM:	20	Head on				CAR	F26	S in APPIN RD	10 Proceeding in lane					
597415	10/11/2007	Sat	14:41	10 m	S	NARELLAN RD	XJN	STR	Fine	Dry	60	3	CAR	F36	N in APPIN RD	50 Proceeding in lane		I	0	1	
E32152562							RUM:	30	Rear end				CAR	F U	N in APPIN RD	50 Proceeding in lane					
													CAR	M33	N in APPIN RD	50 Proceeding in lane					
588675	05/09/2007	Wed	16:10		at	THE PARKWAY MS	XJN	CRV	Fine	Dry	60	2	TRK	F47	N in APPIN RD	60 Turning right		N	0	0	
E31119115							RUM:	21	Right through				CAR	F U	S in APPIN RD	60 Proceeding in lane					

Detailed Crash Report

Transport Centre for Road Safety

Crash No.	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																					S F
683528	01/09/2009	Tue	17:14		at	THE PARKWAY MS	XJN	CRV	Fine	Dry	60	2	CAR	F29	N in APPIN RD	10	Turning right	I	0	2	
E39212665							RUM:	21	Right through				CAR	F32	S in APPIN RD	60	Proceeding in lane				
740953	09/01/2011	Sun	10:45		at	THE PARKWAY MS	XJN	CRV	Overcast	Wet	60	2	CAR	F56	N in APPIN RD	40	Turning right	I	0	1	
E45490283							RUM:	21	Right through				CAR	F27	S in APPIN RD	60	Proceeding in lane				
742011	11/01/2011	Tue	06:15		at	THE PARKWAY MS	XJN	STR	Overcast	Dry	60	2	WAG	M37	S in APPIN RD	62	Proceeding in lane	N	0	0	S
E42947435							RUM:	10	Cross traffic				TRK	M21	E in THE PARKWAY MS	40	Proceeding in lane				
755622	01/06/2011	Wed	21:20		at	THE PARKWAY MS	XJN	CRV	Overcast	Wet	60	2	4WD	F21	N in APPIN RD	5	Turning right	N	0	0	
E44385752							RUM:	21	Right through				CAR	M52	S in APPIN RD	40	Proceeding in lane				
799144	08/06/2012	Fri	18:40		at	THE PARKWAY MS	XJN	CRV	Fine	Dry	60	2	CAR	M24	N in APPIN RD	20	Turning right	N	0	0	
E47723837							RUM:	21	Right through				OMV	M46	S in APPIN RD	50	Proceeding in lane				
Moore-Oxley Bypa																					
641233	03/10/2008	Fri	11:15		at	ART GALLERY RD	TJN	STR	Fine	Dry	60	2	LOR	M37	E in ART GALLERY RD	20	Turning right	I	0	1	
E34798260							RUM:	13	Right near				M/C	M53	N in MOORE-OXLEY BYPA	40	Proceeding in lane				
790927	02/04/2012	Mon	09:45		at	CAMDEN RD	TJN	STR	Fine	Dry	60	2	CAR	F75	S in MOORE-OXLEY BYPA	40	Turning right	N	0	0	
E47804049							RUM:	21	Right through				CAR	M69	N in MOORE-OXLEY BYPA	60	Proceeding in lane				
693478	22/12/2009	Tue	19:10		at	NARELLAN RD	XJN	STR	Fine	Dry	60	2	WAG	F26	S in MOORE-OXLEY BYPA	Unk	Proceeding in lane	N	0	0	
E39517761							RUM:	10	Cross traffic				4WD	M38	E in NARELLAN RD	Unk	Proceeding in lane				
714543	17/06/2010	Thu	09:30		at	NARELLAN RD	XJN	STR	Fine	Dry	60	2	SEM	M64	S in MOORE-OXLEY BYPA	Unk	Proceeding in lane	N	0	0	
E41821442							RUM:	30	Rear end				CAR	M72	S in MOORE-OXLEY BYPA	Unk	Proceeding in lane				
726221	19/09/2010	Sun	07:55		at	NARELLAN RD	XJN	STR	Fine	Dry	Unk	2	CAR	F17	E in NARELLAN RD	55	Proceeding in lane	N	0	0	
E41454710							RUM:	10	Cross traffic				4WD	M40	S in MOORE-OXLEY BYPA	30	Proceeding in lane				
740563	17/12/2010	Fri	20:10	25 m	N	NARELLAN RD	DIV	CRV	Fine	Dry	60	2	TRK	M20	S in MOORE-OXLEY BYPA	30	Veering left	I	0	1	
E42857811							RUM:	35	Lane change left				M/C	M23	S in MOORE-OXLEY BYPA	Unk	Proceeding in lane				
703623	19/03/2010	Fri	17:25		at	THE PARKWAY MS	XJN	STR	Fine	Dry	60	2	CAR	M54	S in MOORE-OXLEY BYPA	60	Proceeding in lane	N	0	0	
E77704402							RUM:	10	Cross traffic				WAG	F55	E in THE PARKWAY MS	20	Proceeding in lane				
740637	17/12/2010	Fri	20:10	10 m	N	THE PARKWAY MS	XJN	CRV	Fine	Dry	60	1	M/C	M23	S in MOORE-OXLEY BYPA	Unk	Proceeding in lane	I	0	1	
E42857811							RUM:	88	Out of cont on bend												
787574	07/03/2012	Wed	19:10	10 m	N	THE PARKWAY MS	XJN	CRV	Overcast	Dry	70	3	CAR	M26	S in MOORE-OXLEY BYPA	1	Proceeding in lane	N	0	0	
E47040736							RUM:	30	Rear end				WAG	F19	S in MOORE-OXLEY BYPA	0	Stationary				
													CAR	M87	S in MOORE-OXLEY BYPA	0	Stationary				
711821	26/05/2010	Wed	09:30	50 m	N	THE PARKWAY MS	DIV	STR	Raining	Wet	50	2	CAR	F65	S in MOORE-OXLEY BYPA	Unk	Proceeding in lane	N	0	0	
E40440960							RUM:	30	Rear end				CAR	M21	S in MOORE-OXLEY BYPA	0	Stationary				

Detailed Crash Report

Transport Centre for Road Safety

Crash No.	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
																					S F
581981	12/07/2007	Thu	18:20	75 m	N	THE PARKWAY MS	DIV	CRV	Fine	Dry	60	3	UTE	F22	S in MOORE-OXLEY BYPA	35	Proceeding in lane	N	0	0	
E30717032							RUM:	30	Rear end				WAG	F57	S in MOORE-OXLEY BYPA	0	Stationary				
													CAR	M22	S in MOORE-OXLEY BYPA	0	Stationary				
Narellan Rd																					
608852	20/12/2007	Thu	03:10	10 m	W	APPIN RD	XJN	CRV	Overcast	Wet	60	1	WAG	M34	N in NARELLAN RD	120	Proceeding in lane	I	0	1	S
E34306984							RUM:	81	Off left/rt bnd=>obj				Tree/bush								
708452	04/05/2010	Tue	07:30	10 m	W	APPIN RD	XJN	STR	Overcast	Dry	60	2	CAR	F29	E in NARELLAN RD	5	Proceeding in lane	I	0	1	
E41245474							RUM:	30	Rear end				TRK	M35	E in NARELLAN RD	0	Stationary				
698679	09/02/2010	Tue	16:45	10 m	W	MOORE-OXLEY BYPA	XJN	STR	Fine	Dry	60	2	TRK	M61	E in NARELLAN RD	55	Proceeding in lane	N	0	0	
E39429460							RUM:	30	Rear end				CAR	M18	E in NARELLAN RD	0	Stationary				

Report Totals: Total Crashes: 30 Fatal Crashes: 0 Injury Crashes: 11 Killed: 0 Injured: 13

Crashid dataset 5273 - Oxley St - Narellan Rd to Camden Rd inc 10m at intersections - July07 to June12

Summary Crash Report

Transport Centre for Road Safety

# Crash Type		
Car Crash	27	90.0%
Light Truck Crash	7	23.3%
Rigid Truck Crash	1	3.3%
Articulated Truck Crash	1	3.3%
'Heavy Truck Crash	(2)	(6.7%)
Bus Crash	0	0.0%
"Heavy Vehicle Crash	(2)	(6.7%)
Emergency Vehicle Crash	0	0.0%
Motorcycle Crash	3	10.0%
Pedal Cycle Crash	0	0.0%
Pedestrian Crash	0	0.0%

' Rigid or Artic. Truck " Heavy Truck or Heavy Bus
These categories are NOT mutually exclusive

Location Type		
*Intersection	26	86.7%
Non intersection	4	13.3%

* Up to 10 metres from an intersection
~ 07:30-09:30 or 14:30-17:00 on school days

Collision Type		
Single Vehicle	3	10.0%
Multi Vehicle	27	90.0%

Road Classification		
Freeway/Motorway	0	0.0%
State Highway	0	0.0%
Other Classified Road	30	100.0%
Unclassified Road	0	0.0%

Contributing Factors		
Speeding	4	13.3%
Fatigue	0	0.0%
Alcohol	0	0.0%

Weather		
Fine	20	66.7%
Rain	3	10.0%
Overcast	7	23.3%
Fog or mist	0	0.0%
Other	0	0.0%

Road Surface Condition		
Wet	6	20.0%
Dry	24	80.0%
Snow or ice	0	0.0%

Natural Lighting		
Dawn	1	3.3%
Daylight	19	63.3%
Dusk	2	6.7%
Darkness	8	26.7%

Crash Movement		
Intersection, adjacent approaches	9	30.0%
Head-on (not overtaking)	1	3.3%
Opposing vehicles; turning	8	26.7%
U-turn	0	0.0%
Rear-end	7	23.3%
Lane change	2	6.7%
Parallel lanes; turning	0	0.0%
Vehicle leaving driveway	0	0.0%
Overtaking; same direction	0	0.0%
Hit parked vehicle	0	0.0%
Hit railway train	0	0.0%
Hit pedestrian	0	0.0%
Permanent obstruction on road	0	0.0%
Hit animal	0	0.0%
Off road, on straight	0	0.0%
Off road on straight, hit object	1	3.3%
Out of control on straight	0	0.0%
Off road, on curve	0	0.0%
Off road on curve, hit object	1	3.3%
Out of control on curve	1	3.3%
Other crash type	0	0.0%

Speed Limit				
40 km/h or less	0	0.0%	80 km/h zone	0	0.0%
50 km/h zone	1	3.4%	90 km/h zone	0	0.0%
60 km/h zone	27	93.1%	100 km/h zone	0	0.0%
70 km/h zone	1	3.4%	110 km/h zone	0	0.0%
			~ 40km/h or less	0	0.0%

CRASHES	30	
Fatal crash	0	0.0%
Injury crash	11	36.7%
Non-casualty crash	19	63.3%

Time Group		% of Day	
00:01 - 02:59	0	0.0%	12.5%
03:00 - 04:59	1	3.3%	8.3%
05:00 - 05:59	0	0.0%	4.2%
06:00 - 06:59	1	3.3%	4.2%
07:00 - 07:59	2	6.7%	4.2%
08:00 - 08:59	1	3.3%	4.2%
09:00 - 09:59	4	13.3%	4.2%
10:00 - 10:59	1	3.3%	4.2%
11:00 - 11:59	3	10.0%	4.2%
12:00 - 12:59	1	3.3%	4.2%
13:00 - 13:59	0	0.0%	4.2%
14:00 - 14:59	1	3.3%	4.2%
15:00 - 15:59	0	0.0%	4.2%
16:00 - 16:59	2	6.7%	4.2%
17:00 - 17:59	4	13.3%	4.2%
18:00 - 18:59	2	6.7%	4.2%
19:00 - 19:59	2	6.7%	4.2%
20:00 - 21:59	4	13.3%	8.3%
22:00 - 24:00	1	3.3%	8.3%

Street Lighting Off/Nil			% of Dark
0	of	8 in Dark	0.0%

CASUALTIES	13	
Killed	0	0.0%
Injured	13	100.0%
^ Unrestrained	0	0.0%

^ Belt fitted but not worn, No restraint fitted to position OR No helmet worn

Crashes		Casualties
3	2012	0
4	2011	1
10	2010	5
4	2009	4
4	2008	1
5	2007	2

~ School Travel Time		
Involvement	5	16.7%

McLean Periods			% Week
A	3	10.0%	17.9%
B	2	6.7%	7.1%
C	6	20.0%	17.9%
D	2	6.7%	3.5%
E	2	6.7%	3.6%
F	6	20.0%	10.7%
G	6	20.0%	7.1%
H	1	3.3%	7.1%
I	1	3.3%	12.5%
J	1	3.3%	10.7%

Day of the Week						# Holiday Periods		
Monday	1	3.3%	Thursday	5	16.7%	Sunday	3	10.0%
Tuesday	6	20.0%	Friday	6	20.0%	WEEKDAY	23	76.7%
Wednesday	5	16.7%	Saturday	4	13.3%	WEEKEND	7	23.3%

New Year	0	0.0%	Queen's BD	1	3.3%	Easter SH	0	0.0%
Aust. Day	0	0.0%	Labour Day	2	6.7%	June/July SH	2	6.7%
Easter	0	0.0%	Christmas	0	0.0%	Sept./Oct. SH	2	6.7%
Anzac Day	0	0.0%	January SH	3	10.0%	December SH	1	3.3%

Crashid dataset 5273 - Oxley St - Narellan Rd to Camden Rd inc 10m at intersections - July07 to June12

Percentages are percentages of all crashes. Unknown values for each category are not shown on this report.

Appendix B

Sight distance requirements

PARSONS BRINCKERHOFF

Values for ASD are provided in Table 3.1 and correction factors for gradient are provided in Table 3.3.

Provision of ASD for trucks

The various sight distance requirements discussed above apply to cars. ASD for trucks should be provided at intersections to ensure that trucks approaching the intersection, at the 85th percentile operating speed of trucks, are able to stop safely. ASD for trucks on intersection approaches should be measured from truck driver eye height (2.4 m) to pavement level at the stop or holding line (0.0 m). Approach sight distances for trucks are numerically the same as the SSD values for trucks provided in the *Guide to Road Design – Part 3: Geometric Design* (Austroads 2009a).

Table 3.1: Approach sight distance (ASD) and corresponding minimum crest vertical curve size for sealed roads (S<L)

Design speed (km/h)	Based on approach sight distance for a car1 h1 = 1.1, h2 = 0, d = 0.362					
	R_T = 1.5 s [3]		R_T = 2.0 s		R_T = 2.5 s	
	ASD (m)	K	ASD (m)	K	ASD (m)	K
40	34	5.3	40	7.2	-	-
50	48	10.5	55	13.8	-	-
60	64	18.8	73	24.0	-	-
70	83	31.1	92	38.9	-	-
80	103	48.5	114	59.5	-	-
90	126	72.3	139	87.3	151	104
100	151	104	165	124	179	146
110	-	-	193	171	209	198
120	-	-	224	229	241	264
130	-	-	257	301	275	344
Truck stopping capability provided by the minimum crest curve size[4]	d = 0.22, h_1 = 2.4 m, h_2 = 0 m					

The ASD required for an 80 km/h design speed is 103 m (based on a driver reaction tim of 1.5 second)

1. If the average grade over the braking length is not zero, calculate the approach sight distance (ASD) values using the correction factors in Table 3.3 (or use Equation 1) by applying the average grade over the braking length.
2. In constrained locations (typically lower volume roads, less important roads, mountainous roads, lower speed urban roads and tunnels), a coefficient of deceleration of 0.46 may be used. For any horizontal curve with a side friction factor greater than the desirable maximum value for cars (in constrained locations), use a coefficient of deceleration of 0.41. The resultant crest curve size can then be calculated according to using the relevant equations in the *Guide to Road Design – Part 3: Geometric Design (Austroads 2009a)*.
3. A 1.5 s reaction time is only to be used in constrained situations where drivers will be alert. Typical situations are given in Table 4.2 of the *Guide to Road Design – Part 3: Geometric Design (Austroads 2009a)*. The general minimum reaction time is 2 s.
4. This check case assumes the same combination of design speed and reaction time as those listed in the table, except that the 120 km/h and 130 km/h speeds are not used.

Notes:

Combinations of design speed and reaction times not shown in this table are generally not used.

Refer to the *Guide to Road Design – Part 3: Geometric Design* (Austroads 2009a) to determine the ASD for trucks around horizontal curves.

3.2.2 Safe Intersection Sight Distance (SISD)

SISD is the minimum distance which should be provided on the major road at any intersection. Designers should note that the object height for the application of SIS

D has been increased to 1.25 m (previously driver eye height was used i.e. 1.1 m) based on research by the Queensland Department of Main Roads (Lennie et al. 2008). The basis of the 1.25 m object height cars is that this height is 0.2 m less than the 15th percentile height of passenger cars (1.45 m) as determined by the study.

	Notes to Table 3.1 Replace "not shown in this table are generally not used." with "shown in white are the minimum values to be used. The values shaded in red are not to be used." after "and reaction times"	
	Notes to Table 3.1 Insert "Values contained in Table 3.1 are not consistently rounded and therefore calculated values may be slightly different to those in the table" as a new note before the start of Section 3.3.2	
Section 3.2.2	**Safe Intersection Sight Distance (SISD)** Paragraph 1 Dot point 3 Replace "allows for a" with "comprises stopping sight distance plus," after "major road. SISD" and before "3 s observation time"	
	Table 3.2 Replace Table 3.2 with	

The SISD required for an 80 km/h design speed is 170 m (based on a driver reaction tim of 1.5 second)

Design speed (km/h)	Based on safe intersection sight distance for cars[1] $h_1 = 1.1$; $h_2 = 1.25$, $d = 0.36$[2]; Observation time = 3 s					
	Rr = 1.5s[3]		Rr = 2.0s		Rr = 2.5s	
	SISD (m)	K	SISD (m)	K	SISD (m)	K
40	67	4.9	73	6	-	-
50	90	8.6	97	10	-	-
60	114	14	123	16	-	-
70	141	22	151	25	-	-
80	170	31	181	35	-	-
90	201	43	214	49	226	55
100	234	59	248	66	262	74
110	-	-	285	87	300	97
120	-	-	324	112	341	124
130	-	-	365	143	383	157
Minimum SISD capability provided by the crest vertical curve size[4] — Car at night[5]	$d = 0.46$, $h_1 = 0.65$ m, $h_2 = 1.25$ m, observation time = 2.6 s. $d = 0.46$, $h_1 = 1.1$ m, $h_2 = 0.75$ m, observation time = 2.5 s.					
Minimum SISD capability provided by the crest vertical curve size[4] — Truck	$d = 0.24$, $h_1 = 2.4$ m, $h_2 = 1.25$ m, observation time = 3.0 s.					
Minimum SISD capability provided by the crest vertical curve size[4] — Truck at night[5]	$d = 0.29$, $h_1 = 1.05$ m, $h_2 = 1.25$m, observation time = 1.8 s. $d = 0.29$, $h_1 = 2.4$m, $h_2 = 0.75$m, observation time = 3.0s.					

	Notes to Table 3.2 Note 3 Replace "A 1.5 s reaction time is only to be used in constrained situations where drivers will be alert. Typical situations" with	

RTA Supplement to
AUSTROADS GUIDE TO ROAD DESIGN
PART 4A (2009) – UNSIGNALISED AND SIGNALISED INTERSECTIONS

Delete Table 5.4 and replace with:

Design speed (km/h)	Desirable minimum values for most urban and rural road types based on d = 0.36			Desirable values for intersection sight distance based on d = 0.26	
	RT = 1.5s	RT = 2.0s	RT = 2.5s	RT = 2.0s	RT = 2.5s
40	34	-	-	-	-
50	48	-	-	-	-
60	64	-	-	-	-
70	83	-	-	113	123
80	103	-	-	141	152
90	126	-	-	173	185
100	-	165	-	207	221
110	-	-	209	244	260
120	-	-	241	285	301
130	-	-	275	328	346
Corrections due to grade (6)	-2	2	4	6	8
40	1	-1	-2	-2	-3
50	2	-1	-3	-4	-5
60	2	-2	-4	-6	-7
70	3	-3	-5	-8	-10
80	4	-4	-7	-10	-13
90	5	-5	-9	-13	-16
100	6	-6	-11	-16	-20
110	8	-7	-13	-19	-24
120	9	-8	-16	-22	-29
130	11	-10	-18	-26	-34

The SSD for intersection sight distance with minimum reaction time of 2.0 s is 141 m for a road of level grade

Delete Notes 3, 4 & 5 of Table 5.4 (starting with "3. Where deceleration values greater" concluding with "grades are not usually applied to roadways utilising d = 0.26.")

Delete "conservatively" and replace with "upwards" after "should be rounded" and before "to the nearest 5 m" in Note 6 of Table 5.4.

RTA Supplement to
AUSTROADS GUIDE TO ROAD DESIGN
PART 3 (2009) – GEOMETRIC DESIGN Table 5.4

Appendix C

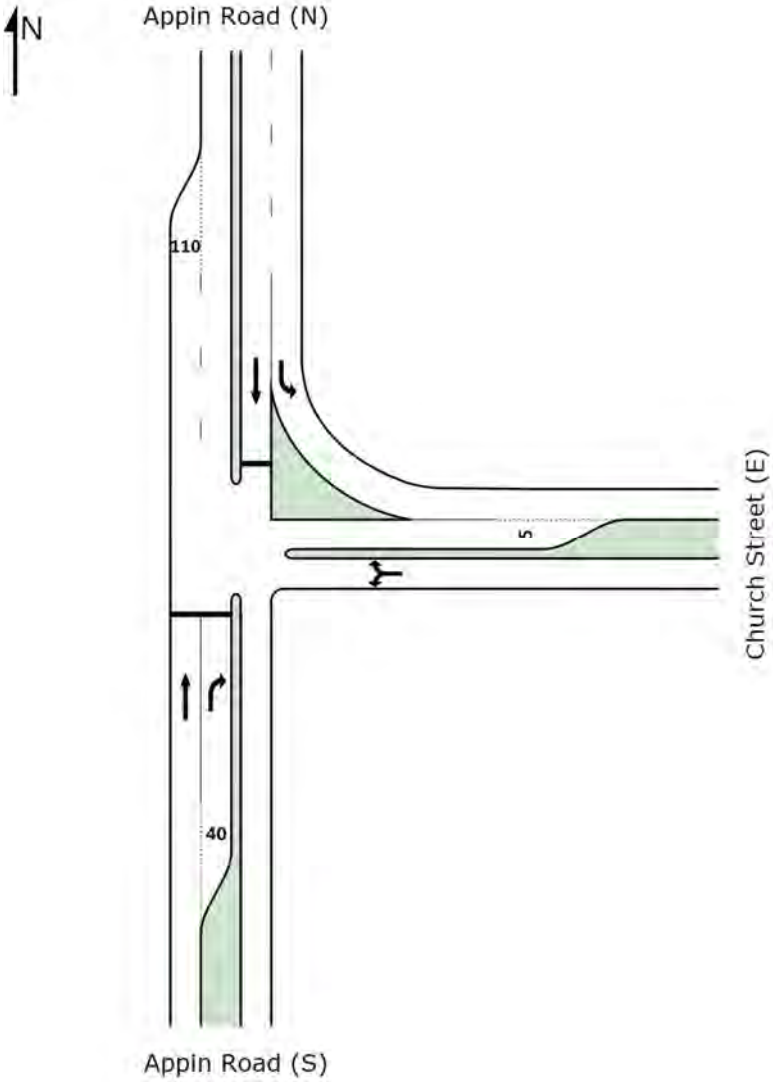
SIDRA results

PARSONS BRINCKERHOFF

Year 2013 – Existing conditions

I-01 Intersection of Appin Road and Church Street

INTERSECTION LAYOUT



MOVEMENT SUMMARY

Site: I-01 EX AM

Mount Gilead TIA
I-01 Appin Road / Church Street
Existing Year 2013 AM Peak
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	73	4.3	0.086	11.9	LOS A	0.3	2.4	0.50	0.92	39.8
3	R	31	6.9	0.038	12.1	LOS A	0.1	1.0	0.50	0.89	39.6
Approach		103	5.1	0.086	11.9	LOS A	0.3	2.4	0.50	0.91	39.7
East: Church Street (E)											
4	L	51	2.1	0.294	6.5	LOS A	0.0	0.0	0.00	0.62	43.3
6	R	474	6.4	0.294	6.5	LOS A	0.0	0.0	0.00	0.60	43.4
Approach		524	6.0	0.294	6.5	NA	0.0	0.0	0.00	0.60	43.4
North: Appin Road (N)											
7	L	246	9.4	0.142	5.8	X	X	X	X	0.53	44.1
8	T	45	4.7	0.058	12.2	LOS A	0.2	1.5	0.52	0.92	39.6
Approach		292	8.7	0.142	6.8	LOS A	0.2	1.5	0.08	0.59	43.4
All Vehicles		919	6.8	0.294	7.2	NA	0.3	2.4	0.08	0.63	42.9

X: Not applicable for Continuous movement.

MOVEMENT SUMMARY

Site: I-01 EX PM

Mount Gilead TIA
I-01 Appin Road / Church Street
Existing Year 2013 PM Peak
Stop (Two-Way)

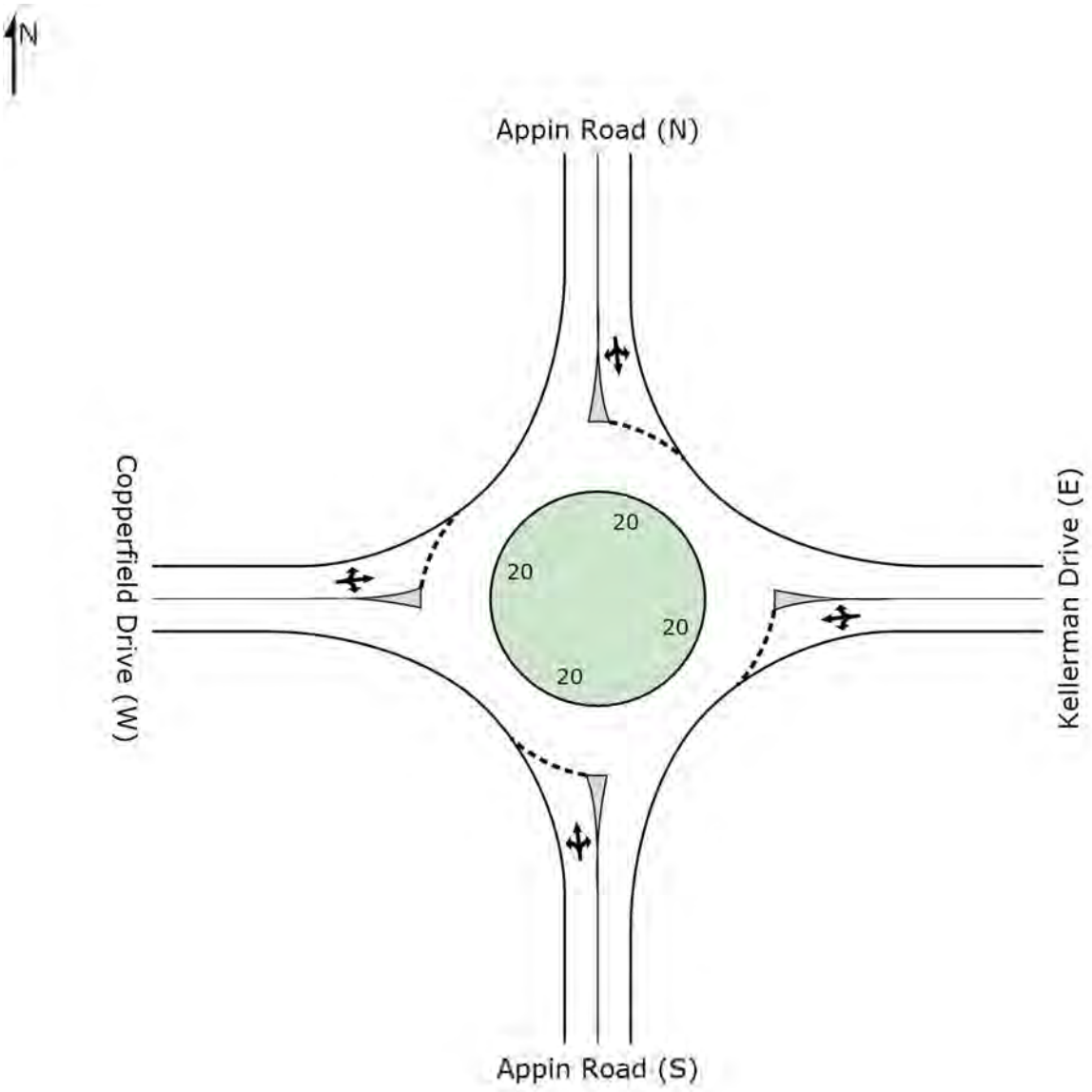
Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	79	2.7	0.076	10.7	LOS A	0.3	2.1	0.40	0.88	40.5
3	R	52	6.1	0.054	11.2	LOS A	0.2	1.5	0.43	0.88	40.2
Approach		131	4.0	0.076	10.9	LOS A	0.3	2.1	0.41	0.88	40.4
East: Church Street (E)											
4	L	66	4.8	0.213	6.5	LOS A	0.0	0.0	0.00	0.62	43.3
6	R	313	6.4	0.213	6.5	LOS A	0.0	0.0	0.00	0.60	43.4
Approach		379	6.1	0.213	6.5	NA	0.0	0.0	0.00	0.60	43.4
North: Appin Road (N)											
7	L	564	2.1	0.308	5.7	X	X	X	X	0.53	44.1
8	T	75	1.4	0.078	11.0	LOS A	0.3	2.1	0.44	0.89	40.2
Approach		639	2.0	0.308	6.3	LOS A	0.3	2.1	0.05	0.57	43.6
All Vehicles		1148	3.6	0.308	6.9	NA	0.3	2.1	0.08	0.62	43.1

X: Not applicable for Continuous movement.

I-02 Intersection of Appin Road, Kellerman Drive and Copperfield Drive

INTERSECTION LAYOUT



MOVEMENT SUMMARY

Site: I-02 EX AM

Mount Gilead TIA
I-02 Appin Road / Kellerman Drive / Copperfield Drive
Existing Year 2013 AM Peak
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	46	0.0	0.607	9.6	LOS A	5.4	39.5	0.68	0.70	51.6
2	T	637	5.5	0.607	9.6	LOS A	5.4	39.5	0.68	0.68	52.2
3	R	3	0.0	0.607	14.2	LOS A	5.4	39.5	0.68	0.81	49.1
Approach		686	5.1	0.607	9.6	LOS A	5.4	39.5	0.68	0.68	52.1
East: Kellerman Drive (E)											
4	L	12	0.0	0.239	10.1	LOS A	1.4	10.2	0.58	0.71	49.6
5	T	139	9.1	0.239	8.1	LOS A	1.4	10.2	0.58	0.65	47.9
6	R	73	2.9	0.239	14.7	LOS B	1.4	10.2	0.58	0.82	45.6
Approach		223	6.6	0.239	10.4	LOS A	1.4	10.2	0.58	0.71	47.2
North: Appin Road (N)											
7	L	44	2.4	0.287	9.5	LOS A	1.9	14.7	0.38	0.61	56.6
8	T	266	11.1	0.287	10.3	LOS A	1.9	14.7	0.38	0.58	58.4
9	R	32	10.0	0.287	14.2	LOS A	1.9	14.7	0.38	0.78	52.8
Approach		342	9.8	0.287	10.5	LOS A	1.9	14.7	0.38	0.60	57.7
West: Copperfield Drive (W)											
10	L	115	3.7	0.343	12.3	LOS A	2.4	17.1	0.83	0.86	46.2
11	T	23	9.1	0.343	10.6	LOS A	2.4	17.1	0.83	0.85	45.7
12	R	97	2.2	0.343	17.7	LOS B	2.4	17.1	0.83	0.90	44.6
Approach		235	3.6	0.343	14.4	LOS A	2.4	17.1	0.83	0.88	45.5
All Vehicles		1486	6.2	0.607	10.7	LOS A	5.4	39.5	0.62	0.70	51.3

MOVEMENT SUMMARY

Site: I-02 EX PM

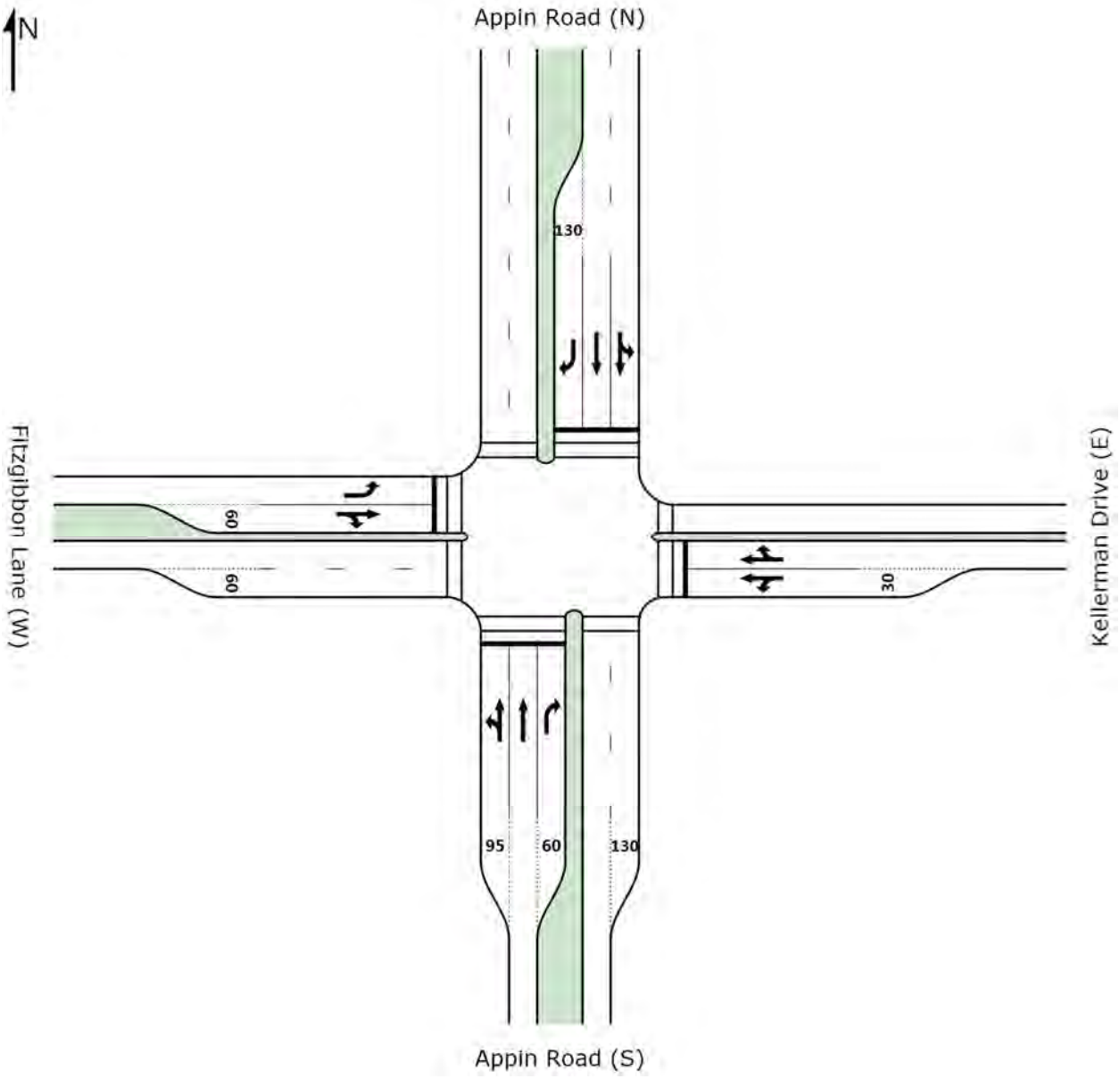
Mount Gilead TIA
I-02 Appin Road / Kellerman Drive / Copperfield Drive
Existing Year 2013 PM Peak
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	24	4.3	0.356	9.0	LOS A	2.5	18.1	0.55	0.66	52.3
2	T	346	5.2	0.356	8.9	LOS A	2.5	18.1	0.55	0.63	53.1
3	R	18	0.0	0.356	13.5	LOS A	2.5	18.1	0.55	0.81	49.5
Approach		388	4.9	0.356	9.2	LOS A	2.5	18.1	0.55	0.64	52.9
East: Kellerman Drive (E)											
4	L	16	0.0	0.414	16.6	LOS B	3.2	23.5	0.95	0.99	44.2
5	T	124	6.8	0.414	14.6	LOS B	3.2	23.5	0.95	0.99	42.4
6	R	66	9.5	0.414	21.5	LOS B	3.2	23.5	0.95	1.02	40.9
Approach		206	7.1	0.414	16.9	LOS B	3.2	23.5	0.95	1.00	42.0
North: Appin Road (N)											
7	L	72	1.5	0.729	11.0	LOS A	8.7	61.5	0.74	0.68	54.4
8	T	780	1.5	0.729	11.4	LOS A	8.7	61.5	0.74	0.67	55.6
9	R	45	7.0	0.729	15.7	LOS B	8.7	61.5	0.74	0.76	52.0
Approach		897	1.8	0.729	11.5	LOS A	8.7	61.5	0.74	0.67	55.3
West: Copperfield Drive (W)											
10	L	43	0.0	0.233	9.7	LOS A	1.4	10.1	0.61	0.70	48.1
11	T	67	6.3	0.233	8.1	LOS A	1.4	10.1	0.61	0.65	47.4
12	R	105	3.0	0.233	15.3	LOS B	1.4	10.1	0.61	0.81	46.6
Approach		216	3.4	0.233	11.9	LOS A	1.4	10.1	0.61	0.74	47.1
All Vehicles		1707	3.3	0.729	11.7	LOS A	8.7	61.5	0.70	0.71	51.7

I-03 Intersection of Appin Road, Kellerman Drive and Fitzgibbon Lane

INTERSECTION LAYOUT



MOVEMENT SUMMARY

Site: I-03 EX AM

Mount Gilead TIA
I-03 Appin Road / Kellerman Drive / Fitzgibbon Lane
Existing Year 2013 AM Peak
Signals - Fixed Time Cycle Time = 96 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	27	0.0	0.877	56.3	LOS D	21.2	154.0	0.99	1.01	28.2
2	T	832	4.4	0.877	46.3	LOS D	23.8	172.7	1.00	1.01	30.2
3	R	3	0.0	0.016	52.2	LOS D	0.1	0.9	0.92	0.64	27.1
Approach		862	4.3	0.877	46.7	LOS D	23.8	172.7	1.00	1.01	30.2
East: Kellerman Drive (E)											
4	L	6	0.0	0.339	39.9	LOS C	2.2	15.5	0.82	0.80	25.3
5	T	115	0.0	0.864	42.9	LOS D	11.1	77.8	0.92	0.84	20.2
6	R	139	0.8	0.864	62.6	LOS E	11.1	77.8	1.00	1.04	19.5
Approach		260	0.4	0.864	53.4	LOS D	11.1	77.8	0.96	0.94	19.9
North: Appin Road (N)											
7	L	69	1.5	0.191	26.2	LOS B	4.4	32.5	0.64	0.86	38.9
8	T	306	10.7	0.268	17.6	LOS B	6.4	48.8	0.66	0.55	43.1
9	R	327	0.3	0.848	36.9	LOS C	10.0	69.9	1.00	0.93	31.7
Approach		703	4.9	0.848	27.4	LOS B	10.0	69.9	0.82	0.76	36.7
West: Fitzgibbon Lane (W)											
10	L	473	1.6	0.441	21.2	LOS B	12.3	87.2	0.60	0.81	36.0
11	T	108	2.9	0.415	33.7	LOS C	5.0	36.1	0.88	0.70	23.7
12	R	18	5.9	0.415	42.7	LOS D	5.0	36.1	0.88	0.82	24.3
Approach		599	1.9	0.441	24.1	LOS B	12.3	87.2	0.66	0.79	32.9
All Vehicles		2424	3.5	0.877	36.2	LOS C	23.8	172.7	0.86	0.87	31.1

PHASING SUMMARY

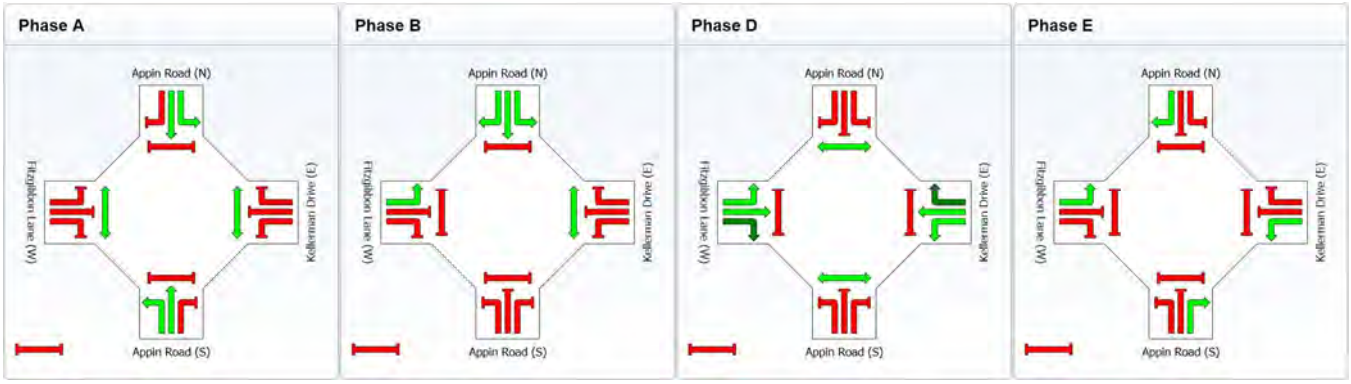
Site: I-03 EX AM

Mount Gilead TIA
I-03 Appin Road / Kellerman Drive / Fitzgibbon Lane
Existing Year 2013 AM Peak
Signals - Fixed Time Cycle Time = 96 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: TCS 3813
Input Sequence: A, B, D, E
Output Sequence: A, B, D, E

Phase Timing Results

Phase	A	B	D	E
Green Time (sec)	26	10	22	10
Yellow Time (sec)	5	5	5	5
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	33	17	29	17
Phase Split	34 %	18 %	30 %	18 %



MOVEMENT SUMMARY

Site: I-03 EX PM

Mount Gilead TIA
I-03 Appin Road / Kellerman Drive / Fitzgibbon Lane
Existing Year 2013 PM Peak
Signals - Fixed Time Cycle Time = 92 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	13	0.0	0.565	47.8	LOS D	8.3	60.2	0.96	0.85	31.6
2	T	382	4.7	0.565	37.8	LOS C	8.3	60.4	0.96	0.79	33.8
3	R	2	0.0	0.007	45.6	LOS D	0.1	0.6	0.87	0.63	29.6
Approach		397	4.5	0.565	38.1	LOS C	8.3	60.4	0.96	0.79	33.7
East: Kellerman Drive (E)											
4	L	7	0.0	0.163	38.1	LOS C	1.0	7.3	0.80	0.76	25.8
5	T	80	0.0	0.416	33.6	LOS C	4.9	34.3	0.88	0.69	23.3
6	R	64	0.0	0.416	44.5	LOS D	4.9	34.3	0.91	0.81	24.7
Approach		152	0.0	0.416	38.4	LOS C	4.9	34.3	0.89	0.75	24.0
North: Appin Road (N)											
7	L	159	1.3	0.549	32.5	LOS C	14.2	100.7	0.83	0.89	35.4
8	T	827	1.9	0.769	26.5	LOS B	23.5	167.5	0.90	0.82	36.3
9	R	402	0.5	0.769	28.6	LOS C	10.0	70.5	0.97	0.88	36.1
Approach		1388	1.4	0.769	27.8	LOS B	23.5	167.5	0.92	0.84	36.1
West: Fitzgibbon Lane (W)											
10	L	238	1.3	0.385	15.6	LOS B	4.1	28.8	0.41	0.75	40.8
11	T	105	3.0	0.305	32.3	LOS C	4.6	33.4	0.87	0.70	24.3
12	R	17	6.3	0.305	41.3	LOS C	4.6	33.4	0.87	0.82	24.9
Approach		360	2.0	0.385	21.7	LOS B	4.6	33.4	0.57	0.74	33.8
All Vehicles		2297	2.0	0.769	29.3	LOS C	23.5	167.5	0.87	0.81	34.5

PHASING SUMMARY

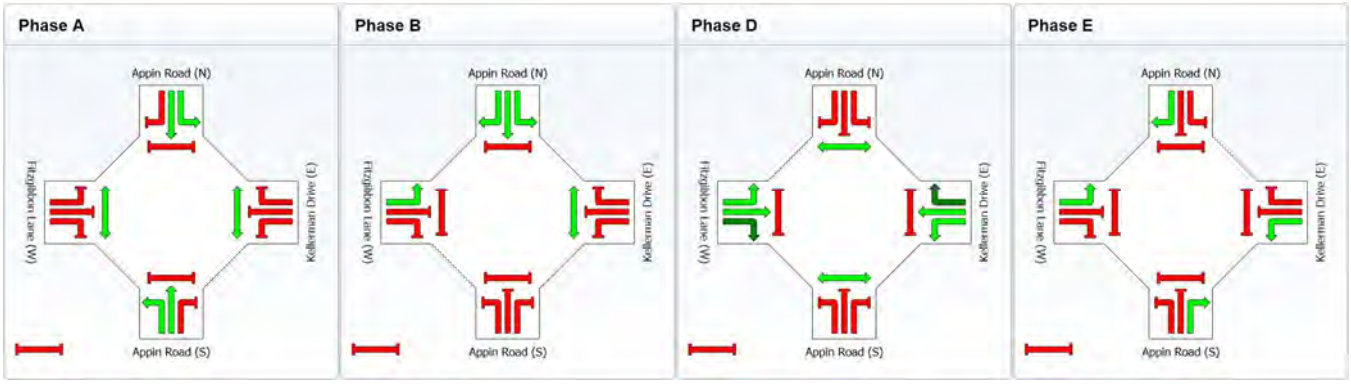
Site: I-03 EX PM

Mount Gilead TIA
I-03 Appin Road / Kellerman Drive / Fitzgibbon Lane
Existing Year 2013 PM Peak
Signals - Fixed Time Cycle Time = 92 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: TCS 3813
Input Sequence: A, B, D, E
Output Sequence: A, B, D, E

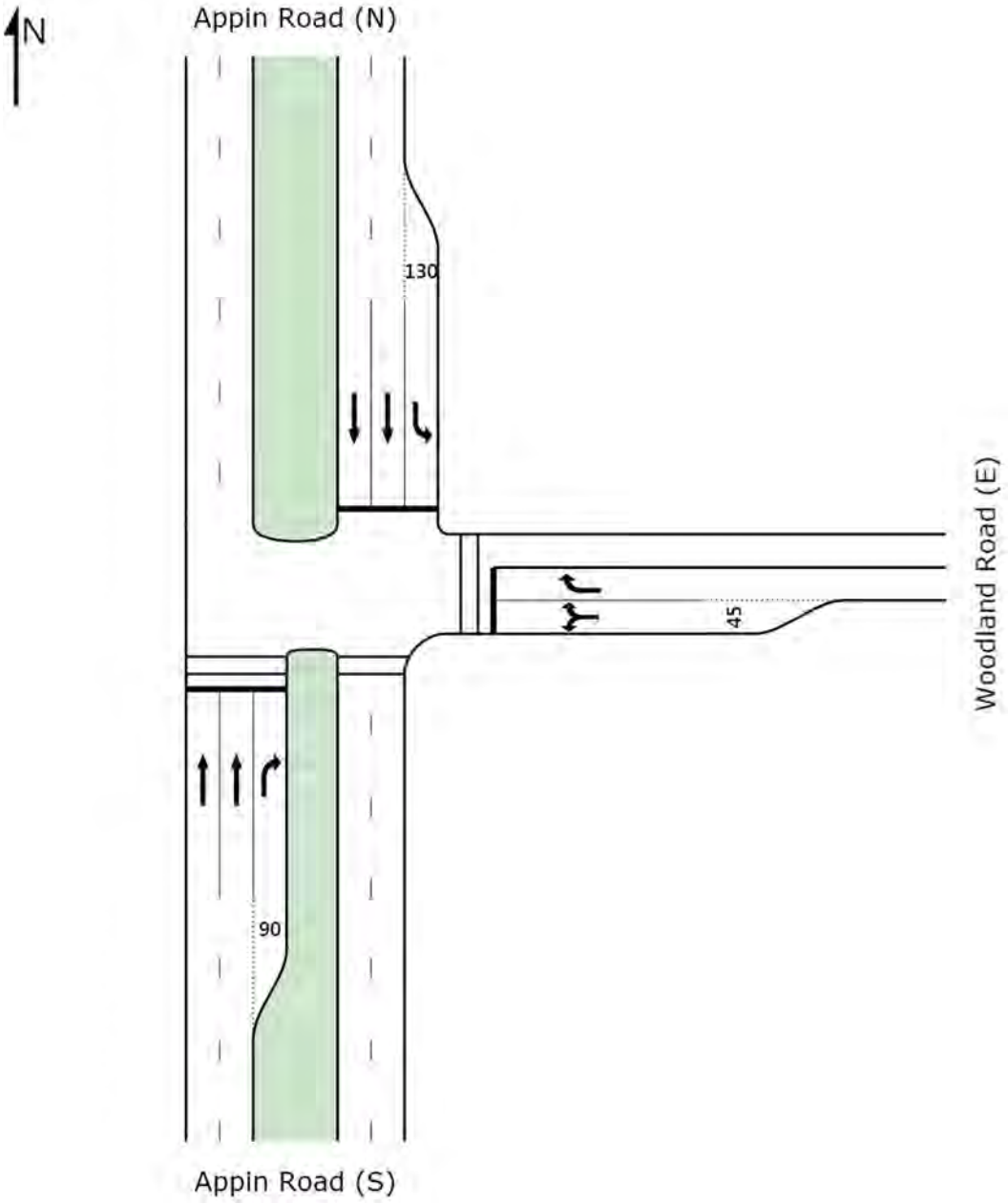
Phase Timing Results

Phase	A	B	D	E
Green Time (sec)	17	12	21	14
Yellow Time (sec)	5	5	5	5
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	24	19	28	21
Phase Split	26 %	21 %	30 %	23 %



I-04 Intersection of Appin Road and Woodland Road

INTERSECTION LAYOUT



MOVEMENT SUMMARY

Site: I-04 EX AM

Mount Gilead TIA
I-04 Appin Road / Woodland Road
Existing Year 2013 AM Peak
Signals - Fixed Time Cycle Time = 65 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	1325	3.7	0.628	7.2	LOS A	10.3	74.5	0.53	0.47	61.0
3	R	72	2.9	0.426	42.6	LOS D	2.3	16.7	0.98	0.76	30.9
Approach		1397	3.6	0.628	9.1	LOS A	10.3	74.5	0.55	0.49	58.4
East: Woodland Road (E)											
4	L	91	1.2	0.509	29.8	LOS C	4.7	33.4	0.85	0.80	24.8
6	R	317	3.0	0.509	32.0	LOS C	6.4	46.3	0.89	0.81	25.9
Approach		407	2.6	0.509	31.5	LOS C	6.4	46.3	0.88	0.80	25.7
North: Appin Road (N)											
7	L	127	5.0	0.115	13.2	LOS A	1.4	10.1	0.37	0.74	48.6
8	T	593	5.0	0.463	17.7	LOS B	6.7	48.5	0.74	0.62	43.1
Approach		720	5.0	0.463	16.9	LOS B	6.7	48.5	0.67	0.64	43.9
All Vehicles		2524	3.8	0.628	14.9	LOS B	10.3	74.5	0.64	0.58	47.9

PHASING SUMMARY

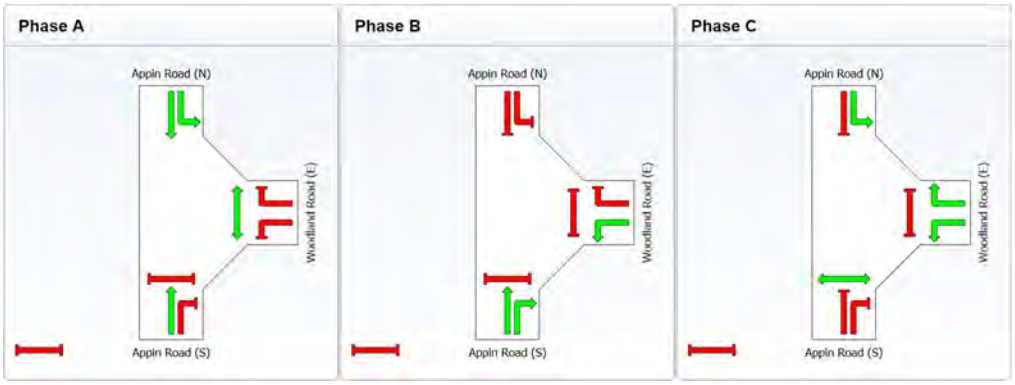
Site: I-04 EX AM

Mount Gilead TIA
I-04 Appin Road / Woodland Road
Existing Year 2013 AM Peak
Signals - Fixed Time Cycle Time = 65 seconds (Optimum Cycle Time - Minimum Delay)

Phase times determined by the program
Sequence: TCS 3047
Input Sequence: A, B, C
Output Sequence: A, B, C

Phase Timing Results

Phase	A	B	C
Green Time (sec)	22	6	16
Yellow Time (sec)	5	5	4
All-Red Time (sec)	3	2	2
Phase Time (sec)	30	13	22
Phase Split	46 %	20 %	34 %



MOVEMENT SUMMARY

Site: I-04 EX PM

Mount Gilead TIA
I-04 Appin Road / Woodland Road
Existing Year 2013 PM Peak
Signals - Fixed Time Cycle Time = 95 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	602	4.0	0.228	1.5	LOS A	1.3	9.3	0.10	0.09	75.1
3	R	86	0.0	0.631	59.9	LOS E	4.2	29.5	1.00	0.80	24.8
Approach		688	3.5	0.631	8.9	LOS A	4.2	29.5	0.21	0.18	61.3
East: Woodland Road (E)											
4	L	84	0.0	0.477	42.6	LOS D	4.6	32.4	0.88	0.78	19.6
6	R	177	4.8	0.477	47.9	LOS D	6.2	45.5	0.94	0.80	19.9
Approach		261	3.2	0.477	46.2	LOS D	6.2	45.5	0.92	0.79	19.8
North: Appin Road (N)											
7	L	331	2.2	0.298	12.4	LOS A	4.2	30.3	0.30	0.74	49.3
8	T	1293	1.4	0.623	11.6	LOS A	15.3	108.1	0.55	0.50	49.4
Approach		1623	1.6	0.623	11.7	LOS A	15.3	108.1	0.50	0.55	49.4
All Vehicles		2573	2.3	0.631	14.5	LOS A	15.3	108.1	0.47	0.47	47.9

PHASING SUMMARY

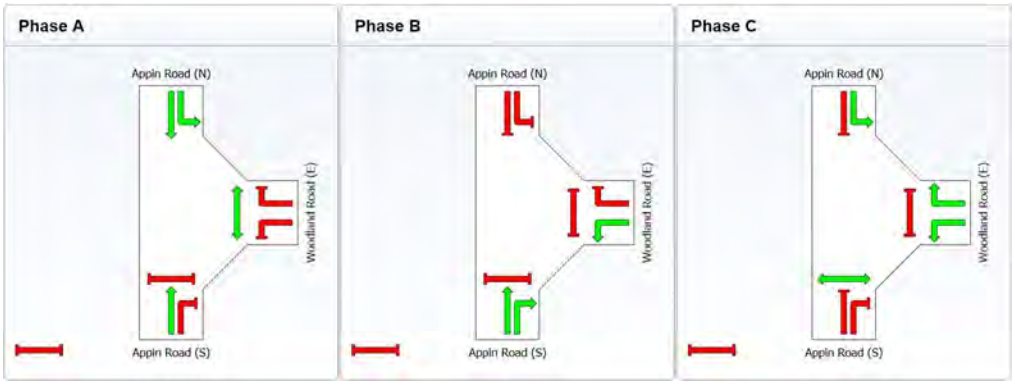
Site: I-04 EX PM

Mount Gilead TIA
I-04 Appin Road / Woodland Road
Existing Year 2013 PM Peak
Signals - Fixed Time Cycle Time = 95 seconds (Optimum Cycle Time - Minimum Delay)

Phase times determined by the program
Sequence: TCS 3047
Input Sequence: A, B, C
Output Sequence: A, B, C

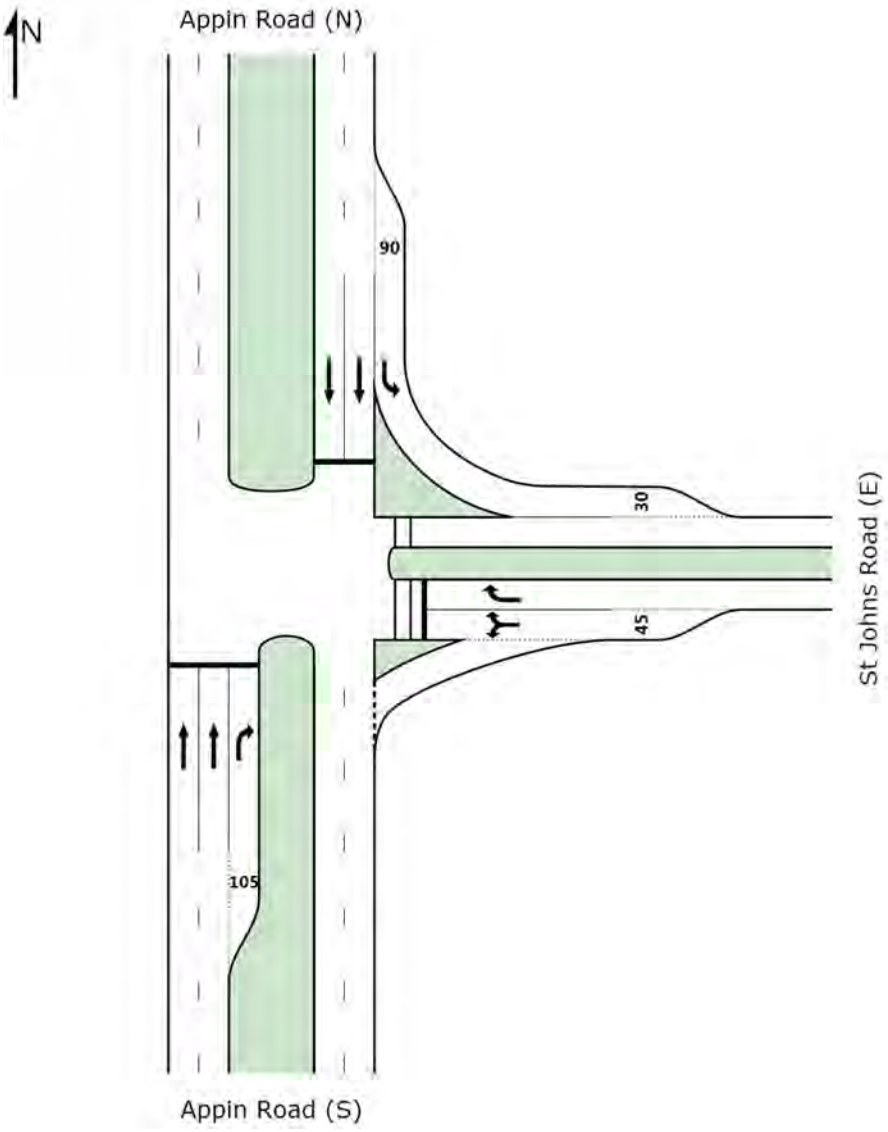
Phase Timing Results

Phase	A	B	C
Green Time (sec)	51	7	16
Yellow Time (sec)	5	5	4
All-Red Time (sec)	3	2	2
Phase Time (sec)	59	14	22
Phase Split	62 %	15 %	23 %



I-05 Intersection of Appin Road and St Johns Road

INTERSECTION LAYOUT



MOVEMENT SUMMARY

Site: I-05 EX AM

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Existing Year 2013 AM Peak
Signals - Fixed Time Cycle Time = 96 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	1407	3.5	0.622	7.9	LOS A	13.4	96.6	0.44	0.40	60.6
3	R	258	2.9	0.567	44.5	LOS D	10.7	77.0	0.93	0.83	30.2
Approach		1665	3.4	0.622	13.6	LOS A	13.4	96.6	0.52	0.47	53.1
East: St Johns Road (E)											
4	L	193	2.2	0.613	22.6	LOS B	5.7	40.7	0.74	0.79	36.5
6	R	353	1.2	0.613	39.9	LOS C	12.7	89.8	0.90	0.83	27.4
Approach		545	1.5	0.613	33.8	LOS C	12.7	89.8	0.85	0.81	30.1
North: Appin Road (N)											
7	L	203	3.6	0.112	11.2	X	X	X	X	0.69	58.9
8	T	525	6.6	0.519	32.3	LOS C	9.8	72.4	0.83	0.70	37.0
Approach		728	5.8	0.519	26.5	LOS B	9.8	72.4	0.60	0.70	41.2
All Vehicles		2939	3.7	0.622	20.5	LOS B	13.4	96.6	0.60	0.59	44.6

X: Not applicable for Continuous movement.

PHASING SUMMARY

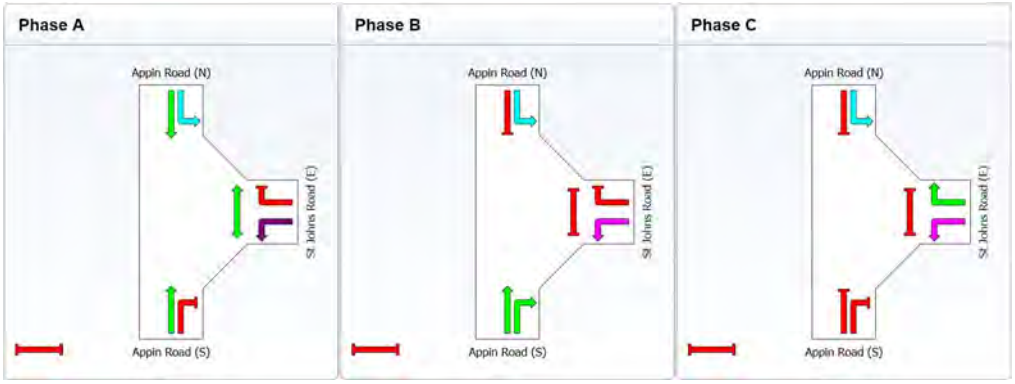
Site: I-05 EX AM

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Existing Year 2013 AM Peak
Signals - Fixed Time Cycle Time = 96 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: TCS 3046
Input Sequence: A, B, C
Output Sequence: A, B, C

Phase Timing Results

Phase	A	B	C
Green Time (sec)	26	24	26
Yellow Time (sec)	5	5	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	33	31	32
Phase Split	34 %	32 %	33 %



MOVEMENT SUMMARY

Site: I-05 EX PM

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Existing Year 2013 PM Peak
Signals - Fixed Time Cycle Time = 91 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	656	2.9	0.233	0.9	LOS A	0.9	6.6	0.07	0.06	77.0
3	R	129	3.3	0.649	54.8	LOS D	5.9	42.4	1.00	0.82	26.4
Approach		785	2.9	0.649	9.8	LOS A	5.9	42.4	0.22	0.19	60.0
East: St Johns Road (E)											
4	L	140	0.8	0.678	30.2	LOS C	5.8	40.8	0.98	0.85	31.9
6	R	225	0.5	0.678	45.8	LOS D	6.9	48.5	0.99	0.85	25.3
Approach		365	0.6	0.678	39.8	LOS C	6.9	48.5	0.99	0.85	27.5
North: Appin Road (N)											
7	L	317	2.0	0.173	11.2	X	X	X	X	0.69	58.8
8	T	1484	1.7	0.700	11.0	LOS A	18.0	127.8	0.59	0.54	55.5
Approach		1801	1.8	0.700	11.0	LOS A	18.0	127.8	0.49	0.57	56.0
All Vehicles		2952	1.9	0.700	14.2	LOS A	18.0	127.8	0.48	0.50	51.7

X: Not applicable for Continuous movement.

PHASING SUMMARY

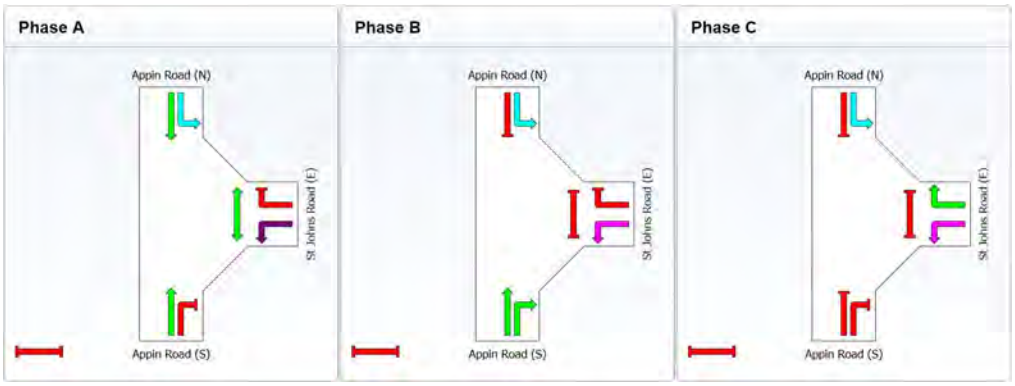
Site: I-05 EX PM

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Existing Year 2013 PM Peak
Signals - Fixed Time Cycle Time = 91 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: TCS 3046
Input Sequence: A, B, C
Output Sequence: A, B, C

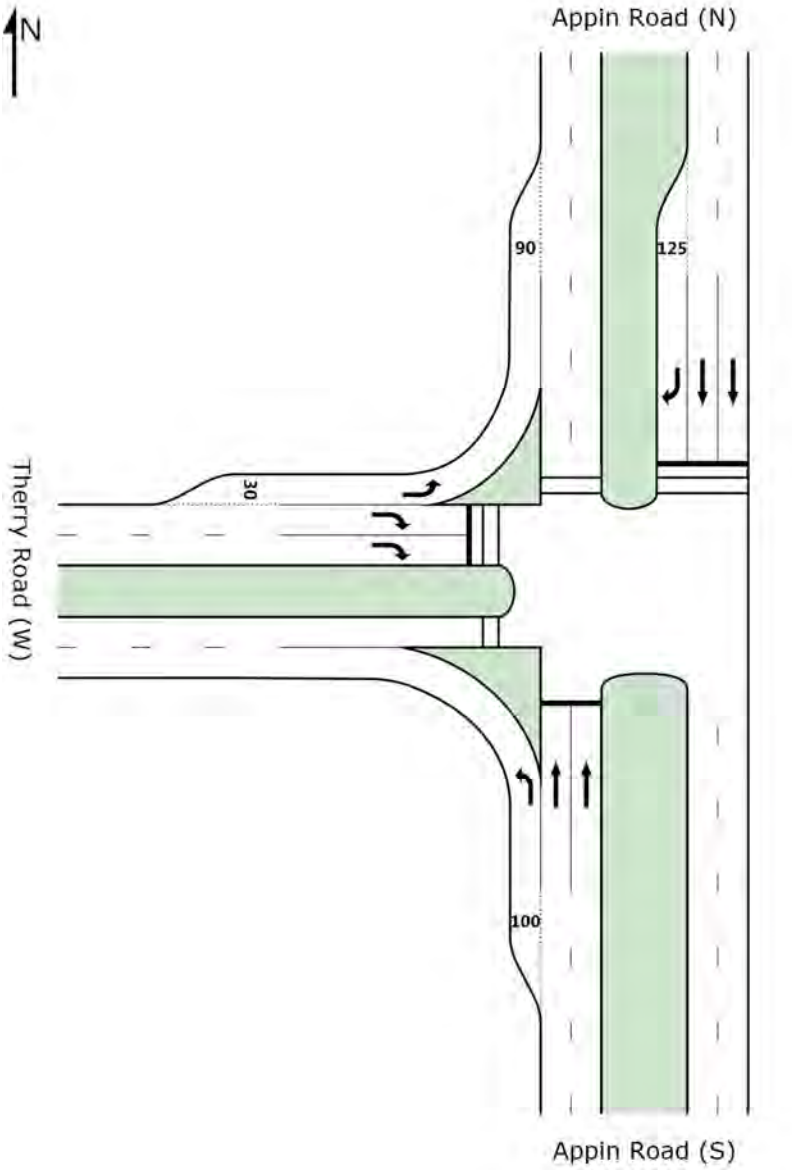
Phase Timing Results

Phase	A	B	C
Green Time (sec)	50	10	11
Yellow Time (sec)	5	5	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	57	17	17
Phase Split	63 %	19 %	19 %



I-06 Intersection of Appin Road and Therry Road

INTERSECTION LAYOUT



MOVEMENT SUMMARY

Site: I-06 EX AM

Mount Gilead TIA
I-06 Appin Road / Therry Road
Existing Year 2013 AM Peak
Signals - Fixed Time Cycle Time = 95 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	491	0.4	0.265	11.1	X	X	X	X	0.69	58.8
2	T	1299	3.9	0.877	33.7	LOS C	30.4	220.1	0.95	0.94	36.0
Approach		1789	2.9	0.877	27.5	LOS B	30.4	220.1	0.69	0.87	40.2
North: Appin Road (N)											
8	T	502	6.9	0.213	3.9	LOS A	2.2	16.4	0.21	0.18	69.2
9	R	267	1.2	0.862	60.4	LOS E	14.0	98.7	1.00	0.96	24.8
Approach		769	4.9	0.862	23.5	LOS B	14.0	98.7	0.48	0.45	44.0
West: Therry Road (W)											
10	L	402	2.1	0.220	7.6	X	X	X	X	0.60	47.4
12	R	235	1.8	0.276	41.8	LOS C	4.5	32.2	0.86	0.78	27.0
Approach		637	2.0	0.276	20.2	LOS B	4.5	32.2	0.32	0.67	36.4
All Vehicles		3196	3.2	0.877	25.1	LOS B	30.4	220.1	0.57	0.73	40.4

X: Not applicable for Continuous movement.

PHASING SUMMARY

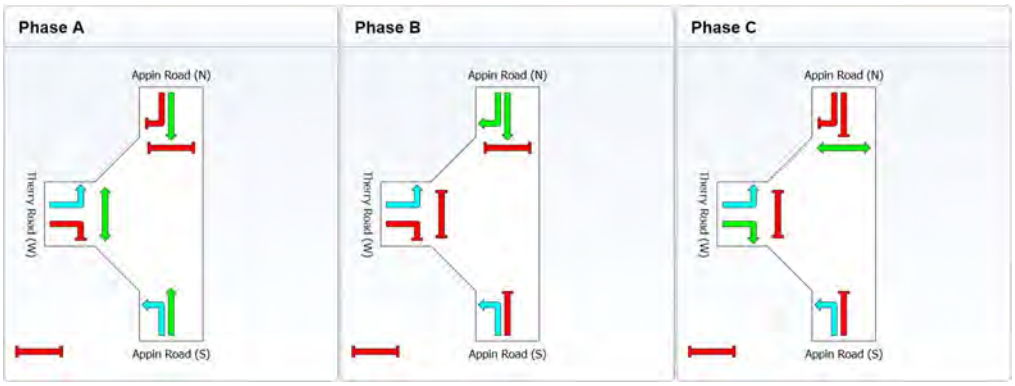
Site: I-06 EX AM

Mount Gilead TIA
I-06 Appin Road / Therry Road
Existing Year 2013 AM Peak
Signals - Fixed Time Cycle Time = 95 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: TCS 2286
Input Sequence: A, B, C
Output Sequence: A, B, C

Phase Timing Results

Phase	A	B	C
Green Time (sec)	37	16	22
Yellow Time (sec)	5	5	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	44	23	28
Phase Split	46 %	24 %	29 %



MOVEMENT SUMMARY

Site: I-06 EX PM

Mount Gilead TIA
I-06 Appin Road / Therry Road
Existing Year 2013 PM Peak
Signals - Fixed Time Cycle Time = 91 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	289	1.1	0.157	11.1	X	X	X	X	0.69	58.8
2	T	623	3.9	0.678	34.6	LOS C	12.3	89.1	0.92	0.79	35.6
Approach		913	3.0	0.678	27.2	LOS B	12.3	89.1	0.63	0.76	40.6
North: Appin Road (N)											
8	T	1361	2.3	0.576	6.0	LOS A	10.2	72.7	0.37	0.33	64.1
9	R	366	1.1	0.670	40.5	LOS C	14.5	102.4	0.94	0.85	32.0
Approach		1727	2.1	0.670	13.3	LOS A	14.5	102.4	0.49	0.44	53.7
West: Therry Road (W)											
10	L	345	1.2	0.188	7.6	X	X	X	X	0.60	47.4
12	R	438	0.2	0.488	41.6	LOS C	8.5	59.7	0.91	0.82	27.1
Approach		783	0.7	0.488	26.6	LOS B	8.5	59.7	0.51	0.72	32.8
All Vehicles		3423	2.0	0.678	20.0	LOS B	14.5	102.4	0.53	0.59	44.5

X: Not applicable for Continuous movement.

PHASING SUMMARY

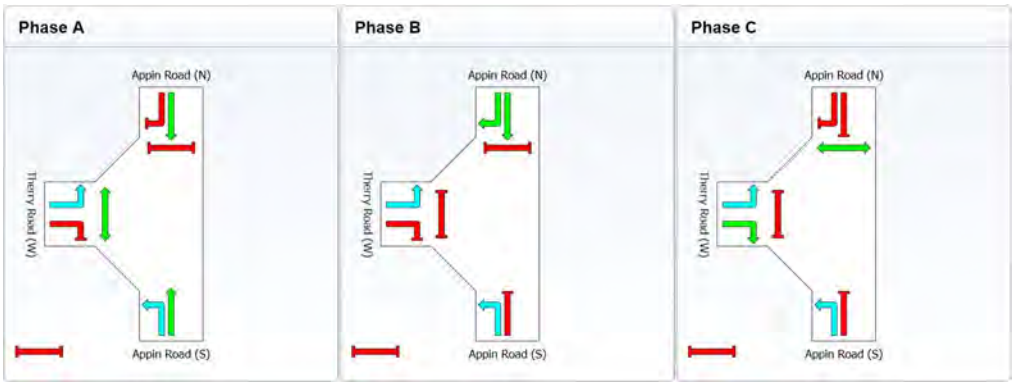
Site: I-06 EX PM

Mount Gilead TIA
I-06 Appin Road / Therry Road
Existing Year 2013 PM Peak
Signals - Fixed Time Cycle Time = 91 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: TCS 2286
Input Sequence: A, B, C
Output Sequence: A, B, C

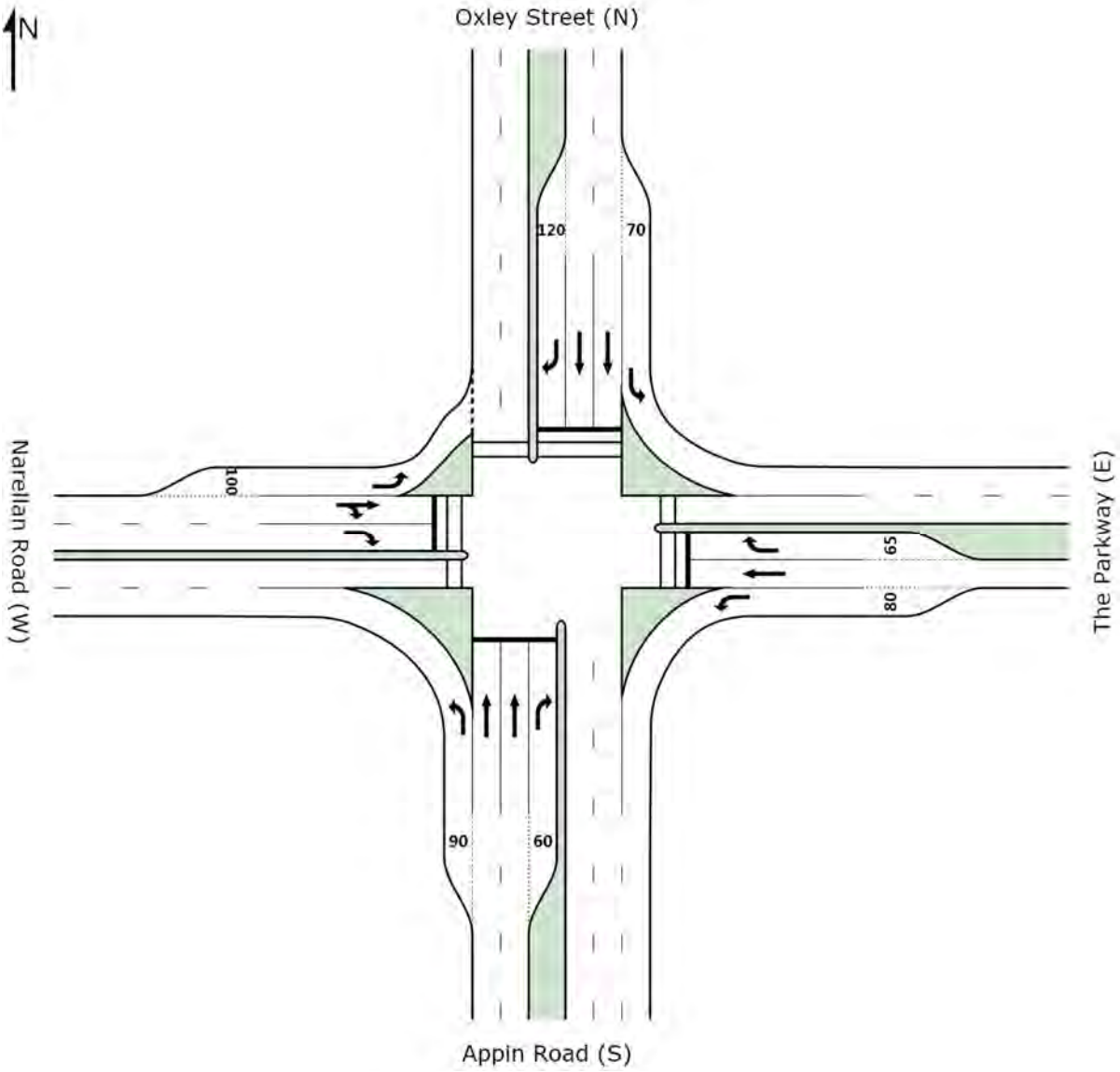
Phase Timing Results

Phase	A	B	C
Green Time (sec)	22	27	22
Yellow Time (sec)	5	5	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	29	34	28
Phase Split	32 %	37 %	31 %



I-07 Intersection of Appin Road, Narellan Road, Oxley Street and The Parkway

INTERSECTION LAYOUT



MOVEMENT SUMMARY

Site: I-07 EX AM

Mount Gilead TIA
I-07 Appin Road / Oxley Street / Narellan Road / Kellicar Road
Existing Year 2013 AM Peak
Signals - Fixed Time Cycle Time = 136 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	456	8.1	0.260	7.8	X	X	X	X	0.60	49.7
2	T	1197	2.0	0.881	48.7	LOS D	39.1	278.6	0.97	0.95	24.7
3	R	29	0.0	0.080	24.9	LOS B	0.9	6.4	0.63	0.70	35.7
Approach		1682	3.6	0.881	37.2	LOS C	39.1	278.6	0.70	0.85	28.8
East: The Parkway (E)											
4	L	22	4.8	0.012	7.7	X	X	X	X	0.60	37.8
5	T	236	1.3	0.691	57.6	LOS E	15.0	105.9	0.99	0.84	10.1
6	R	206	3.1	0.888	78.1	LOS F	14.8	106.1	0.98	0.96	8.3
Approach		464	2.3	0.888	64.4	LOS E	15.0	106.1	0.94	0.88	9.5
North: Oxley Street (N)											
7	L	116	5.5	0.065	7.7	X	X	X	X	0.60	46.7
8	T	513	2.3	0.378	35.0	LOS C	12.6	89.6	0.79	0.68	27.1
9	R	233	2.3	0.866	79.1	LOS F	16.9	120.5	1.00	0.94	15.0
Approach		861	2.7	0.866	43.2	LOS D	16.9	120.5	0.74	0.74	23.7
West: Narellan Road (W)											
10	L	266	2.0	0.388	19.2	LOS B	6.0	43.0	0.40	0.71	35.8
11	T	219	0.5	0.824	65.6	LOS E	15.9	112.1	1.00	0.91	17.2
12	R	224	10.3	0.824	75.9	LOS F	15.9	112.1	1.00	0.90	18.4
Approach		709	4.2	0.824	51.4	LOS D	15.9	112.1	0.78	0.83	21.8
All Vehicles		3717	3.3	0.888	44.7	LOS D	39.1	278.6	0.76	0.82	23.8

PHASING SUMMARY

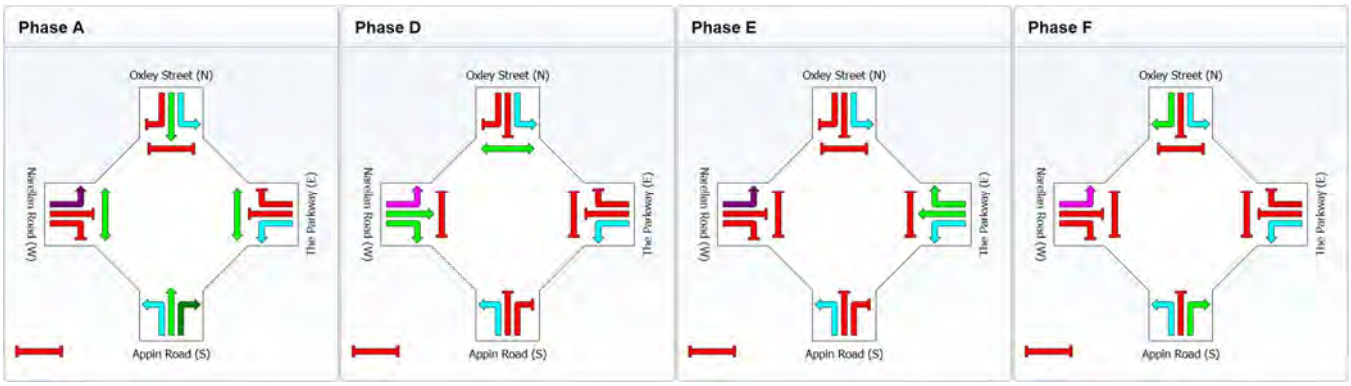
Site: I-07 EX AM

Mount Gilead TIA
I-07 Appin Road / Oxley Street / Narellan Road / Kellicar Road
Existing Year 2013 AM Peak
Signals - Fixed Time Cycle Time = 136 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: TCS 3232
Input Sequence: A, D, E, F
Output Sequence: A, D, E, F

Phase Timing Results

Phase	A	D	E	F
Green Time (sec)	48	20	24	20
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	54	26	30	26
Phase Split	40 %	19 %	22 %	19 %



MOVEMENT SUMMARY

Site: I-07 EX PM

Mount Gilead TIA
I-07 Appin Road / Oxley Street / Narellan Road / Kellicar Road
Existing Year 2013 PM Peak
Signals - Fixed Time Cycle Time = 139 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	262	5.6	0.147	7.7	X	X	X	X	0.60	49.8
2	T	624	1.9	0.726	54.6	LOS D	19.2	136.5	0.95	0.82	23.1
3	R	64	0.0	0.543	62.9	LOS E	4.1	28.8	0.93	0.81	22.0
Approach		951	2.8	0.726	42.2	LOS C	19.2	136.5	0.69	0.76	27.1
East: The Parkway (E)											
4	L	25	4.2	0.014	7.7	X	X	X	X	0.60	37.8
5	T	174	3.0	0.743	66.9	LOS E	11.9	85.8	1.00	0.87	9.0
6	R	152	2.8	0.681	73.4	LOS F	10.2	73.3	1.00	0.83	8.8
Approach		351	3.0	0.743	65.4	LOS E	11.9	85.8	0.93	0.83	9.4
North: Oxley Street (N)											
7	L	346	2.4	0.190	7.7	X	X	X	X	0.60	46.7
8	T	1200	1.7	0.676	31.2	LOS C	31.4	223.0	0.84	0.76	28.5
9	R	268	0.8	0.748	67.1	LOS E	17.8	125.1	1.00	0.87	16.9
Approach		1815	1.7	0.748	32.0	LOS C	31.4	223.0	0.71	0.75	27.9
West: Narellan Road (W)											
10	L	180	1.8	0.166	9.4	LOS A	1.0	6.8	0.10	0.63	45.2
11	T	312	0.3	0.730	47.7	LOS D	23.4	164.6	0.92	0.80	21.0
12	R	476	2.2	0.730	57.0	LOS E	23.4	164.6	0.92	0.86	22.4
Approach		967	1.5	0.730	45.2	LOS D	23.4	164.6	0.76	0.79	24.0
All Vehicles		4083	2.0	0.748	40.4	LOS C	31.4	223.0	0.74	0.77	25.0

PHASING SUMMARY

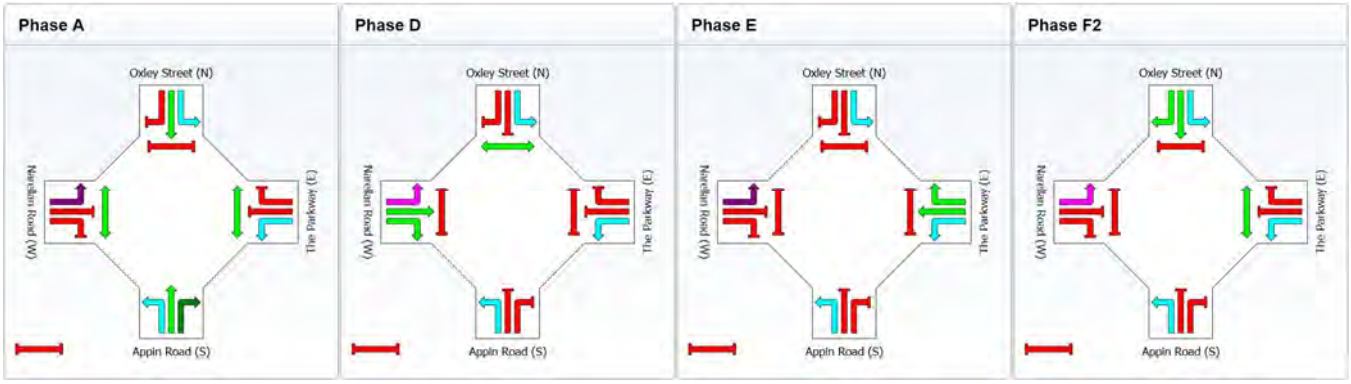
Site: I-07 EX PM

Mount Gilead TIA
I-07 Appin Road / Oxley Street / Narellan Road / Kellicar Road
Existing Year 2013 PM Peak
Signals - Fixed Time Cycle Time = 139 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: TCS 3232
Input Sequence: A, D, E, F2
Output Sequence: A, D, E, F2

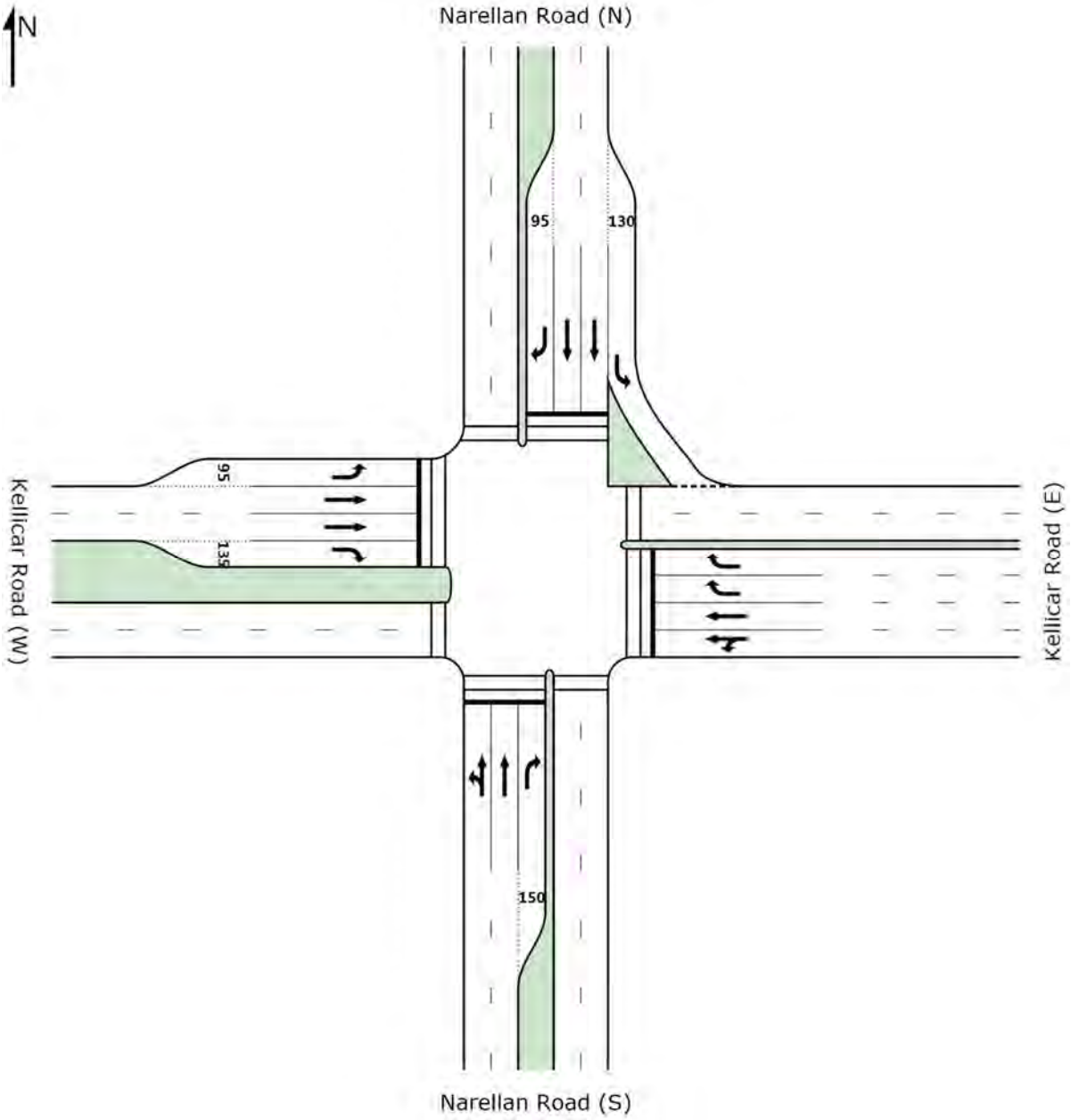
Phase Timing Results

Phase	A	D	E	F2
Green Time (sec)	31	40	17	27
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	37	46	23	33
Phase Split	27 %	33 %	17 %	24 %



I-08 Intersection of Narellan Road and Hurley Street

INTERSECTION LAYOUT



MOVEMENT SUMMARY

Site: I-08 EX AM

Mount Gilead TIA
I-08 Narellan Road / Kellicar Road
Existing Year 2013 AM Peak
Signals - Fixed Time Cycle Time = 139 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	129	5.7	0.708	50.2	LOS D	23.8	173.6	0.87	0.88	22.2
2	T	737	4.9	0.708	42.3	LOS C	23.9	174.4	0.87	0.77	22.7
3	R	109	2.9	0.348	63.0	LOS E	6.3	45.0	0.88	0.78	18.6
Approach		976	4.7	0.708	45.7	LOS D	23.9	174.4	0.87	0.78	22.1
East: Kellicar Road (E)											
4	L	20	0.0	0.659	66.1	LOS E	13.3	97.9	0.96	0.84	10.9
5	T	408	6.2	0.659	58.2	LOS E	13.3	98.2	0.96	0.80	11.0
6	R	344	6.1	0.672	70.5	LOS F	11.1	82.0	0.98	0.82	10.0
Approach		773	6.0	0.672	63.9	LOS E	13.3	98.2	0.97	0.81	10.5
North: Narellan Road (N)											
7	L	922	2.4	0.845	10.1	LOS A	7.8	55.5	0.19	0.71	47.2
8	T	566	4.3	0.461	38.6	LOS C	13.5	98.1	0.76	0.65	28.1
9	R	265	2.8	0.844	74.0	LOS F	18.5	132.7	1.00	0.91	19.8
Approach		1754	3.1	0.845	28.9	LOS C	18.5	132.7	0.50	0.72	33.1
West: Kellicar Road (W)											
10	L	109	6.7	0.234	35.0	LOS C	3.8	28.4	0.55	0.74	20.2
11	T	559	4.7	0.855	66.7	LOS E	19.7	143.2	1.00	0.95	12.1
12	R	122	3.4	0.468	68.0	LOS E	7.5	54.0	0.93	0.79	12.5
Approach		791	4.8	0.855	62.5	LOS E	19.7	143.2	0.93	0.90	12.9
All Vehicles		4293	4.3	0.855	45.2	LOS D	23.9	174.4	0.75	0.78	22.0

PHASING SUMMARY

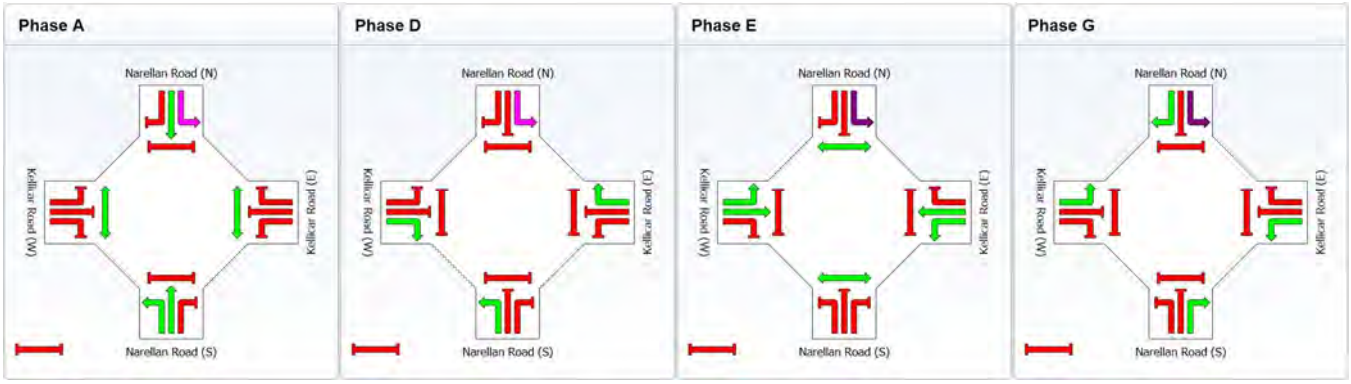
Site: I-08 EX AM

Mount Gilead TIA
I-08 Narellan Road / Kellicar Road
Existing Year 2013 AM Peak
Signals - Fixed Time Cycle Time = 139 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: TCS 3231
Input Sequence: A, D, E, G
Output Sequence: A, D, E, G

Phase Timing Results

Phase	A	D	E	G
Green Time (sec)	45	20	24	24
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	3	2	2	3
Phase Time (sec)	52	26	30	31
Phase Split	37 %	19 %	22 %	22 %



MOVEMENT SUMMARY

Site: I-08 EX PM

Mount Gilead TIA
I-08 Narellan Road / Kellicar Road
Existing Year 2013 PM Peak
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	160	0.0	0.904	75.7	LOS F	29.2	207.6	1.00	0.99	16.5
2	T	616	3.4	0.904	68.1	LOS E	29.2	207.6	1.00	1.00	16.7
3	R	133	0.0	0.435	65.2	LOS E	7.9	55.4	0.91	0.79	18.1
Approach		908	2.3	0.904	69.0	LOS E	29.2	207.6	0.99	0.97	16.9
East: Kellicar Road (E)											
4	L	25	0.0	0.912	77.1	LOS F	29.7	215.4	1.00	1.03	9.5
5	T	765	4.5	0.912	69.0	LOS E	29.7	215.4	1.00	1.03	9.6
6	R	651	1.9	0.888	76.2	LOS F	23.7	169.0	1.00	0.94	9.3
Approach		1441	3.3	0.912	72.4	LOS F	29.7	215.4	1.00	0.99	9.5
North: Narellan Road (N)											
7	L	493	2.1	0.503	8.9	LOS A	2.6	18.6	0.10	0.63	48.3
8	T	752	1.8	0.881	64.9	LOS E	26.8	190.8	1.00	0.98	20.8
9	R	268	2.0	0.892	80.0	LOS F	19.9	141.6	1.00	0.94	18.8
Approach		1513	1.9	0.892	49.4	LOS D	26.8	190.8	0.71	0.86	25.0
West: Kellicar Road (W)											
10	L	236	0.9	0.445	31.3	LOS C	8.0	56.4	0.54	0.76	21.6
11	T	515	5.5	0.598	52.1	LOS D	15.0	110.0	0.90	0.76	14.6
12	R	191	0.6	0.515	62.2	LOS E	11.1	78.4	0.90	0.81	13.4
Approach		941	3.4	0.598	48.9	LOS D	15.0	110.0	0.81	0.77	15.6
All Vehicles		4803	2.7	0.912	59.9	LOS E	29.7	215.4	0.87	0.90	17.0

PHASING SUMMARY

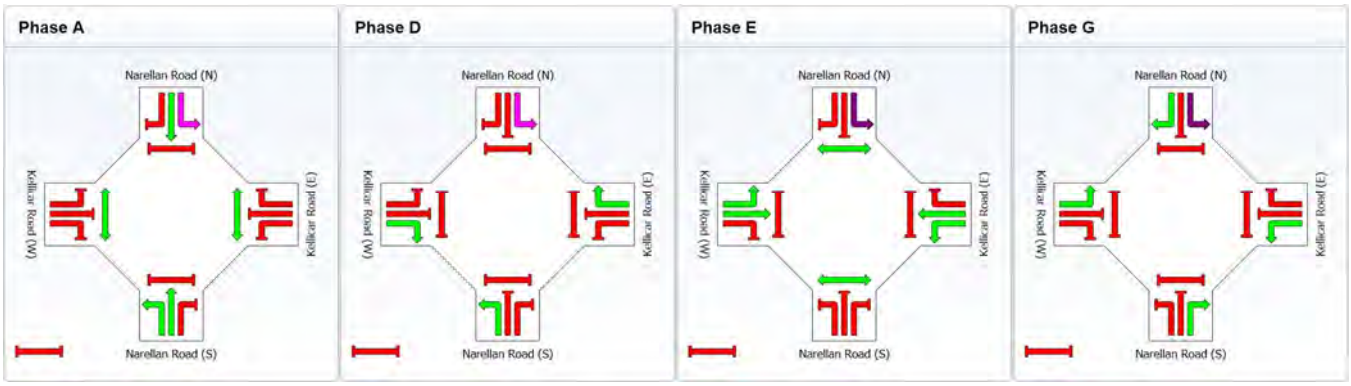
Site: I-08 EX PM

Mount Gilead TIA
I-08 Narellan Road / Kellicar Road
Existing Year 2013 PM Peak
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: TCS 3231
Input Sequence: A, D, E, G
Output Sequence: A, D, E, G

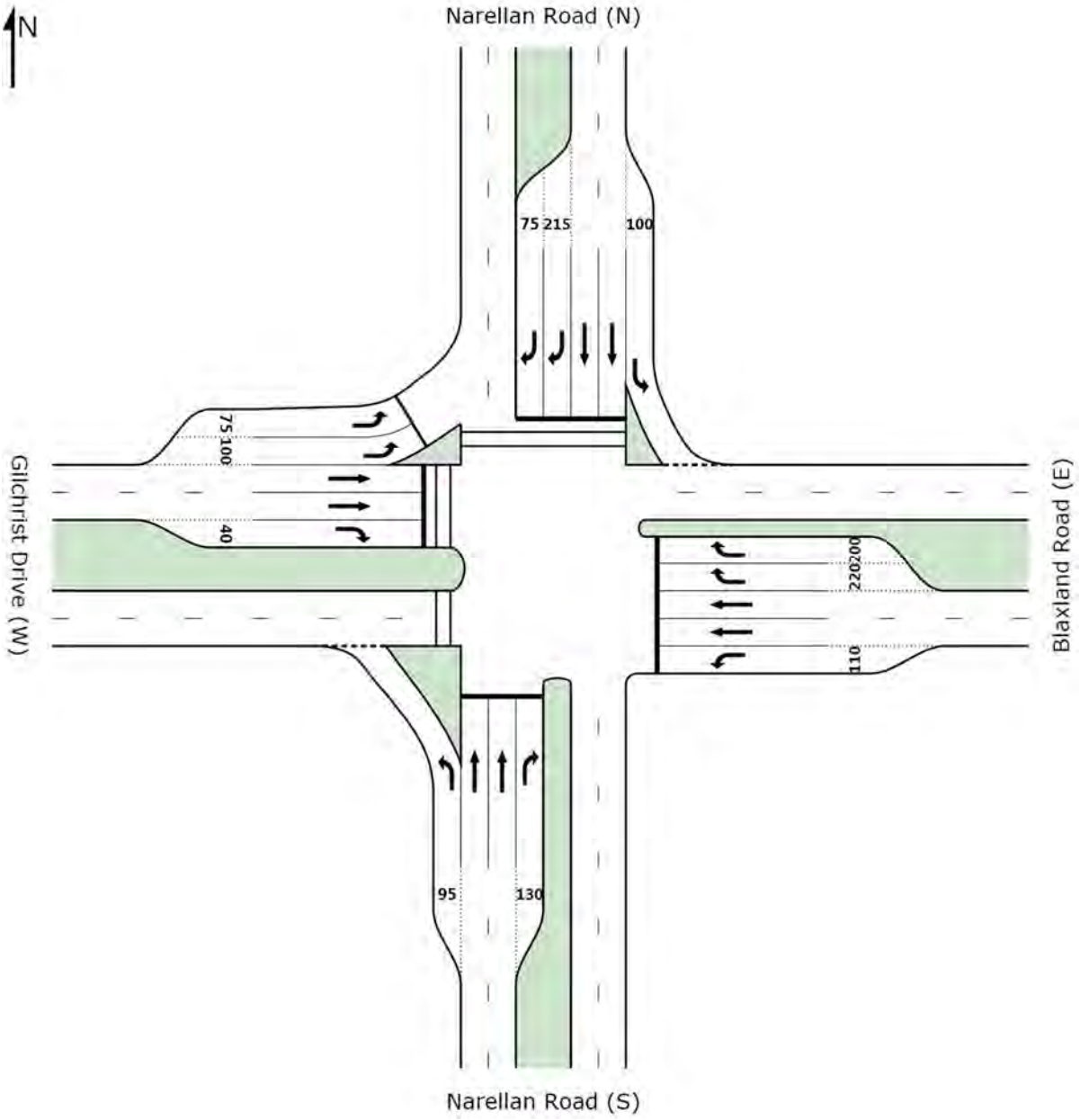
Phase Timing Results

Phase	A	D	E	G
Green Time (sec)	31	28	32	23
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	3	2	2	3
Phase Time (sec)	38	34	38	30
Phase Split	27 %	24 %	27 %	21 %



I-09 Intersection of Narellan Road, Gilchrist Drive and Blaxland Road

INTERSECTION LAYOUT



MOVEMENT SUMMARY

Site: I-09 EX AM

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Existing Year 2013 AM Peak
Signals - Fixed Time Cycle Time = 139 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	14	53.8	0.027	19.8	LOS B	0.4	3.7	0.43	0.64	40.0
2	T	869	5.9	0.785	49.2	LOS D	26.4	194.0	0.94	0.85	24.6
3	R	319	2.6	0.760	63.6	LOS E	20.8	149.0	0.99	0.88	22.0
Approach		1202	5.6	0.785	52.7	LOS D	26.4	194.0	0.95	0.85	23.9
East: Blaxland Road (E)											
4	L	453	2.8	0.937	51.5	LOS D	25.0	179.5	0.93	0.89	24.8
5	T	474	2.0	0.777	63.5	LOS E	15.8	112.7	1.00	0.88	21.1
6	R	522	9.9	1.046	148.2	LOS F	27.6	209.3	1.00	1.22	11.9
Approach		1448	5.1	1.046	90.3	LOS F	27.6	209.3	0.98	1.01	17.1
North: Narellan Road (N)											
7	L	643	7.7	0.880	21.9	LOS B	21.9	163.2	0.64	0.84	37.8
8	T	1192	3.8	1.065	139.4	LOS F	65.5	473.6	1.00	1.43	12.2
9	R	708	4.8	1.056	117.0	LOS F	48.1	350.8	0.99	1.09	14.4
Approach		2543	5.1	1.065	103.5	LOS F	65.5	473.6	0.91	1.18	15.5
West: Gilchrist Drive (W)											
10	L	693	3.6	0.860	53.4	LOS D	22.6	163.2	0.83	0.90	24.6
11	T	403	1.6	0.660	60.1	LOS E	13.1	92.6	0.99	0.82	21.8
12	R	18	0.0	0.121	63.2	LOS E	1.1	7.4	0.89	0.70	22.0
Approach		1114	2.8	0.860	56.0	LOS D	22.6	163.2	0.89	0.87	23.5
All Vehicles		6307	4.8	1.065	82.4	LOS F	65.5	473.6	0.93	1.02	18.2

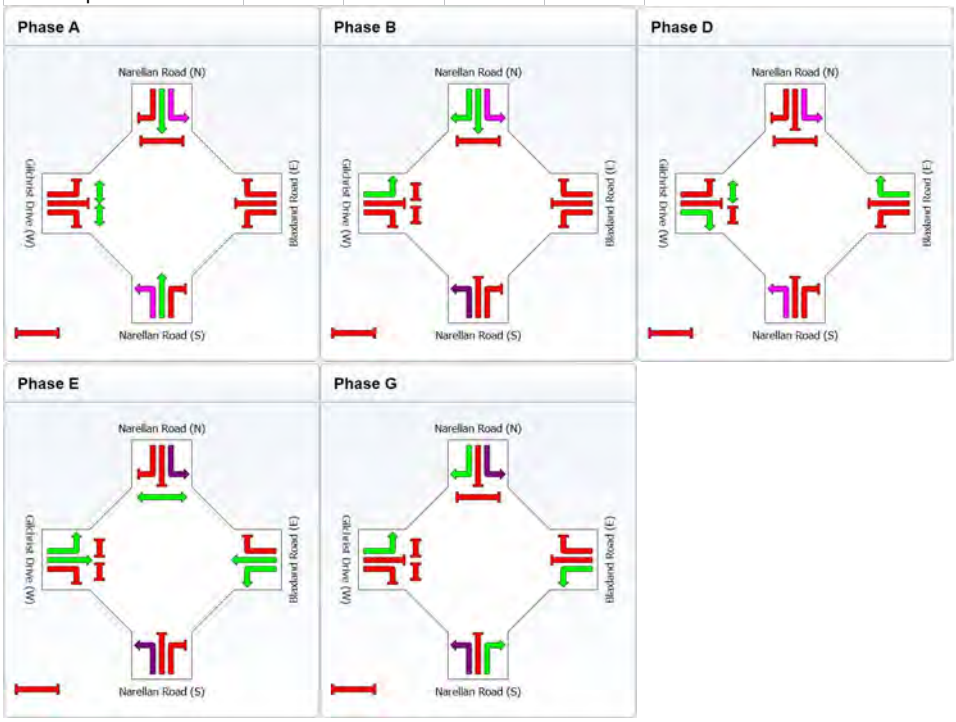
PHASING SUMMARY

Site: I-09 EX AM

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Existing Year 2013 AM Peak
Signals - Fixed Time Cycle Time = 139 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: TCS 1810
Input Sequence: A, D, E, G
Output Sequence: A, D, E, G
Phase Timing Results

Phase	A	D	E	G
Green Time (sec)	41	20	22	32
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	47	26	28	38
Phase Split	34 %	19 %	20 %	27 %



MOVEMENT SUMMARY

Site: I-09 EX PM

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Existing Year 2013 PM Peak
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	5	0.0	0.008	19.0	LOS B	0.1	1.0	0.43	0.63	39.6
2	T	1180	2.7	1.137	200.1	LOS F	76.9	551.0	1.00	1.66	9.1
3	R	247	1.3	1.104	192.5	LOS F	29.9	211.5	1.00	1.34	9.6
Approach		1432	2.4	1.137	198.1	LOS F	76.9	551.0	1.00	1.60	9.2
East: Blaxland Road (E)											
4	L	402	2.6	0.792	48.2	LOS D	22.0	157.5	0.99	0.90	25.8
5	T	602	2.2	1.000	103.9	LOS F	27.4	195.6	1.00	1.18	15.2
6	R	778	2.5	1.120	191.3	LOS F	50.2	359.0	1.00	1.33	9.7
Approach		1782	2.4	1.120	129.5	LOS F	50.2	359.0	1.00	1.18	13.1
North: Narellan Road (N)											
7	L	462	3.0	0.580	15.1	LOS B	11.5	82.6	0.44	0.72	42.5
8	T	952	3.0	0.797	44.7	LOS D	23.9	171.8	0.94	0.97	25.7
9	R	674	3.4	1.088	132.7	LOS F	48.7	350.7	0.99	1.13	13.0
Approach		2088	3.1	1.088	66.6	LOS E	48.7	350.7	0.85	0.97	21.0
West: Gilchrist Drive (W)											
10	L	777	3.1	1.000 [3]	49.2	LOS D	22.7	163.2	1.00	0.87	25.8
11	T	499	3.0	0.836	68.6	LOS E	18.1	129.8	1.00	0.95	20.0
12	R	65	0.0	0.421	58.6	LOS E	3.7	26.1	0.88	0.75	23.1
Approach		1341	2.9	1.000	56.9	LOS E	22.7	163.2	0.99	0.89	23.2
All Vehicles		6643	2.7	1.137	109.8	LOS F	76.9	551.0	0.95	1.15	14.8

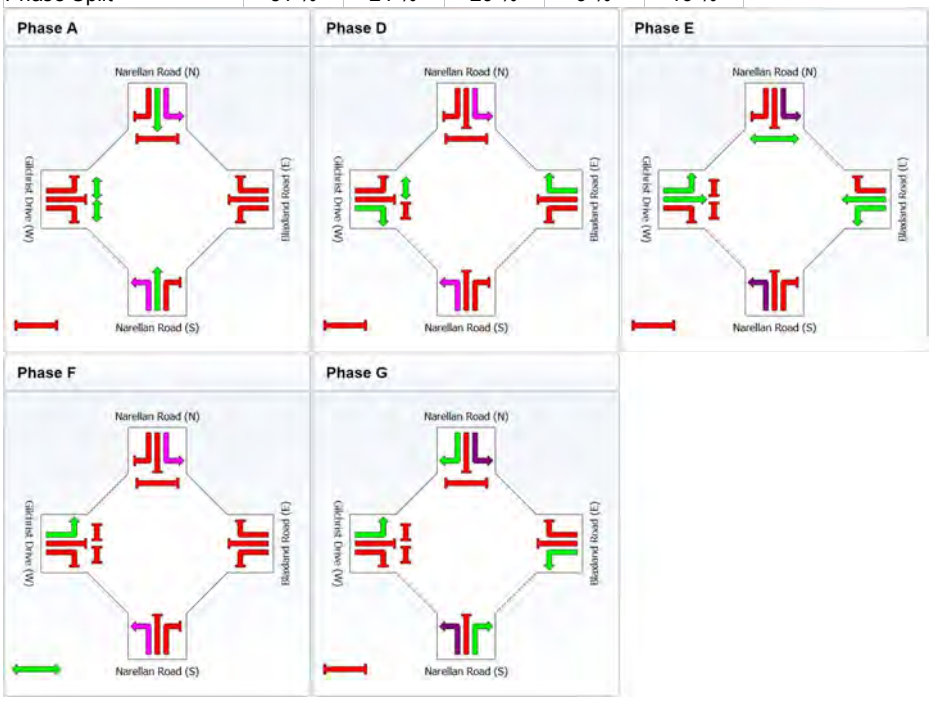
PHASING SUMMARY

Site: I-09 EX PM

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Existing Year 2013 PM Peak
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

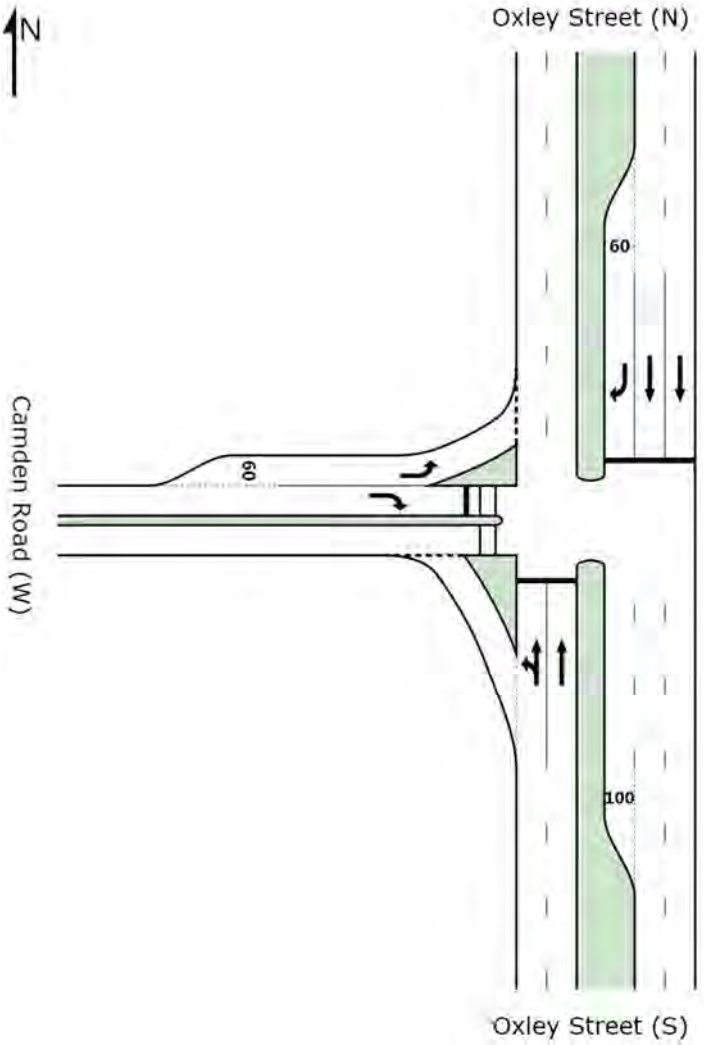
Phase times determined by the program
Sequence: TCS 1810
Input Sequence: A, D, E, F, G
Output Sequence: A, D, E, F, G
Phase Timing Results

Phase	A	D	E	F	G
Green Time (sec)	38	27	22	6	17
Yellow Time (sec)	4	4	4	4	4
All-Red Time (sec)	2	2	2	2	2
Phase Time (sec)	44	33	28	12	23
Phase Split	31 %	24 %	20 %	9 %	16 %



I-10 Intersection of Oxley Street and Camden Road

INTERSECTION LAYOUT



MOVEMENT SUMMARY

Site: I-10 EX AM

Mount Gilead TIA
I-10 Oxley Street / Blaxland Road
Existing Year 2013 AM Peak
Signals - Fixed Time Cycle Time = 115 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Oxley Street (S)											
1	L	222	1.9	0.602	11.5	LOS A	9.6	68.7	0.24	0.88	42.6
2	T	1423	2.2	0.602	2.5	LOS A	9.6	68.7	0.17	0.17	53.4
Approach		1645	2.2	0.602	3.7	LOS A	9.6	68.7	0.18	0.26	51.6
North: Oxley Street (N)											
8	T	800	2.6	0.233	0.2	LOS A	0.7	5.3	0.07	0.04	57.3
9	R	75	0.0	0.578	67.5	LOS E	4.3	30.3	1.00	0.78	12.3
Approach		875	2.4	0.578	6.0	LOS A	4.3	30.3	0.15	0.10	43.7
West: Camden Road (W)											
10	L	44	4.8	0.130	8.5	LOS A	0.3	2.0	0.17	0.63	35.7
12	R	66	3.2	0.600	69.3	LOS E	3.9	28.1	1.00	0.78	8.7
Approach		111	3.8	0.600	45.0	LOS D	3.9	28.1	0.67	0.72	12.7
All Vehicles		2631	2.3	0.602	6.2	LOS A	9.6	68.7	0.19	0.23	46.3

PHASING SUMMARY

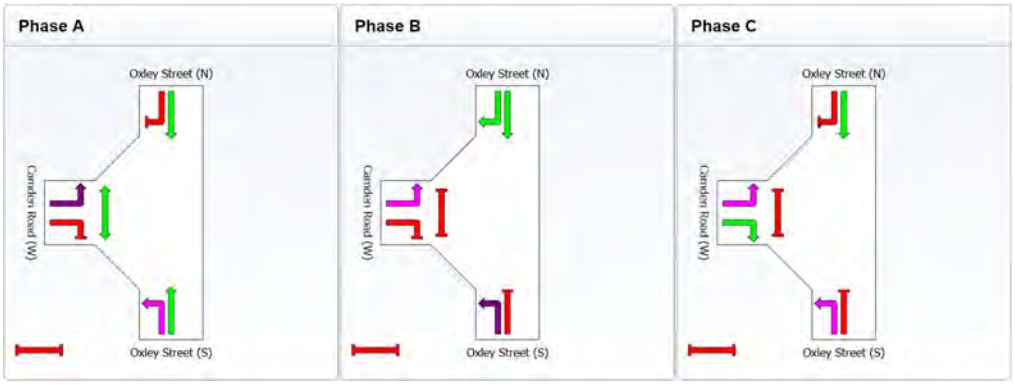
Site: I-10 EX AM

Mount Gilead TIA
I-10 Oxley Street / Blaxland Road
Existing Year 2013 AM Peak
Signals - Fixed Time Cycle Time = 115 seconds (Optimum Cycle Time - Minimum Delay)

Phase times determined by the program
Sequence: Signalised Seagull Ints
Input Sequence: A, B, C
Output Sequence: A, B, C

Phase Timing Results

Phase	A	B	C
Green Time (sec)	82	8	7
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	88	14	13
Phase Split	77 %	12 %	11 %



MOVEMENT SUMMARY

Site: I-10 EX PM

Mount Gilead TIA
I-10 Oxley Street / Blaxland Road
Existing Year 2013 PM Peak
Signals - Fixed Time Cycle Time = 60 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Oxley Street (S)											
1	L	164	0.0	0.653	21.7	LOS B	9.9	70.4	0.81	0.87	34.3
2	T	772	2.2	0.653	15.2	LOS B	10.4	73.8	0.80	0.70	35.1
Approach		936	1.8	0.653	16.4	LOS B	10.4	73.8	0.81	0.73	35.0
North: Oxley Street (N)											
8	T	1549	2.0	0.503	0.3	LOS A	1.1	7.9	0.10	0.06	56.0
9	R	65	1.6	0.355	37.4	LOS C	1.9	13.7	0.97	0.75	19.1
Approach		1615	2.0	0.503	1.8	LOS A	1.9	13.7	0.14	0.08	52.0
West: Camden Road (W)											
10	L	95	3.3	0.105	10.6	LOS A	0.8	6.0	0.41	0.68	32.3
12	R	296	0.0	0.683	32.6	LOS C	8.5	59.4	0.97	0.86	15.8
Approach		391	0.8	0.683	27.3	LOS B	8.5	59.4	0.83	0.82	18.2
All Vehicles		2941	1.8	0.683	9.8	LOS A	10.4	73.8	0.44	0.39	38.3

PHASING SUMMARY

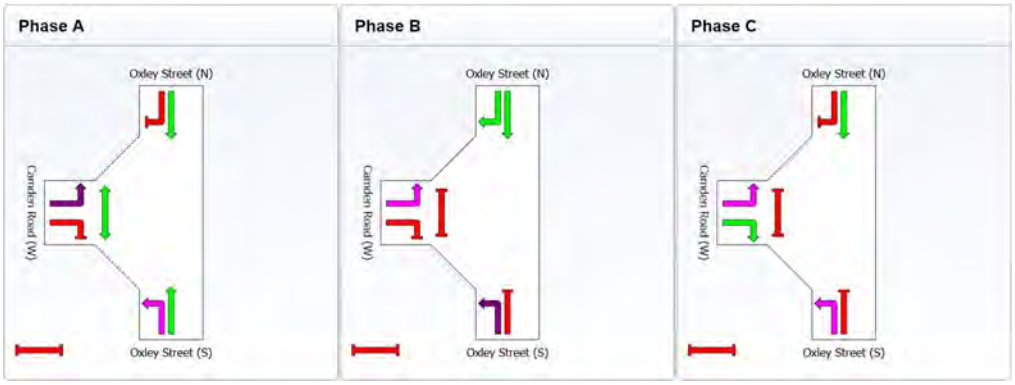
Site: I-10 EX PM

Mount Gilead TIA
I-10 Oxley Street / Blaxland Road
Existing Year 2013 PM Peak
Signals - Fixed Time Cycle Time = 60 seconds (Optimum Cycle Time - Minimum Delay)

Phase times determined by the program
Sequence: Signalised Seagull Ints
Input Sequence: A, B, C
Output Sequence: A, B, C

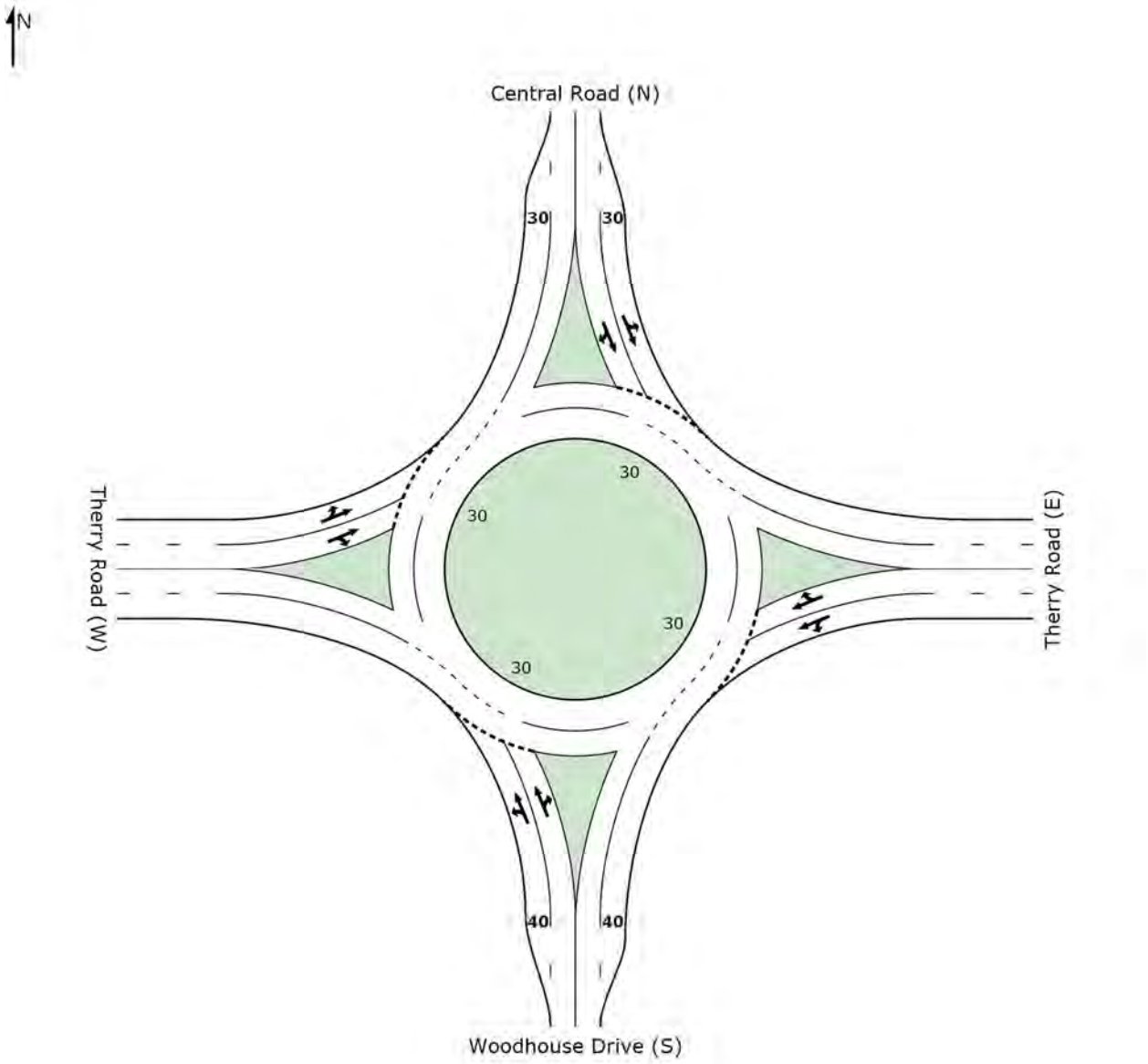
Phase Timing Results

Phase	A	B	C
Green Time (sec)	22	6	14
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	28	12	20
Phase Split	47 %	20 %	33 %



I-11 Intersection of Therry Road, Central Road and Woodhouse Drive

INTERSECTION LAYOUT



MOVEMENT SUMMARY

Site: I-11 EX AM

Mount Gilead TIA
I-11 Therry Road / Central Road / Woodhouse Drive
Existing Year 2013 AM Peak
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Woodhouse Drive (S)											
1	L	280	2.6	0.316	7.9	LOS A	1.5	10.9	0.56	0.68	40.5
2	T	293	0.0	0.502	6.5	LOS A	3.2	22.5	0.62	0.61	40.2
3	R	282	1.1	0.502	13.4	LOS A	3.2	22.5	0.62	0.88	37.8
Approach		855	1.2	0.502	9.2	LOS A	3.2	22.5	0.60	0.72	39.4
East: Therry Road (E)											
4	L	192	0.5	0.270	6.8	LOS A	1.5	10.9	0.49	0.60	46.5
5	T	243	0.4	0.270	5.7	LOS A	1.5	10.9	0.49	0.51	46.6
6	R	185	0.0	0.270	12.6	LOS A	1.5	10.5	0.50	0.77	42.7
Approach		620	0.3	0.270	8.1	LOS A	1.5	10.9	0.49	0.62	45.2
North: Central Road (N)											
7	L	80	9.2	0.085	8.0	LOS A	0.4	3.1	0.58	0.67	34.8
8	T	11	20.0	0.101	7.5	LOS A	0.5	3.6	0.60	0.63	34.2
9	R	67	10.9	0.101	14.2	LOS A	0.5	3.6	0.60	0.81	31.8
Approach		158	10.7	0.101	10.6	LOS A	0.5	3.6	0.59	0.73	33.3
West: Therry Road (W)											
10	L	167	4.4	0.383	9.7	LOS A	2.7	19.1	0.79	0.83	47.4
11	T	202	1.0	0.383	8.5	LOS A	2.7	19.1	0.79	0.77	46.8
12	R	244	1.3	0.383	15.9	LOS B	2.5	17.5	0.79	0.90	43.0
Approach		614	2.1	0.383	11.8	LOS A	2.7	19.1	0.79	0.84	45.3
All Vehicles		2246	1.9	0.502	9.7	LOS A	3.2	22.5	0.62	0.72	42.9

MOVEMENT SUMMARY

Site: I-11 EX PM

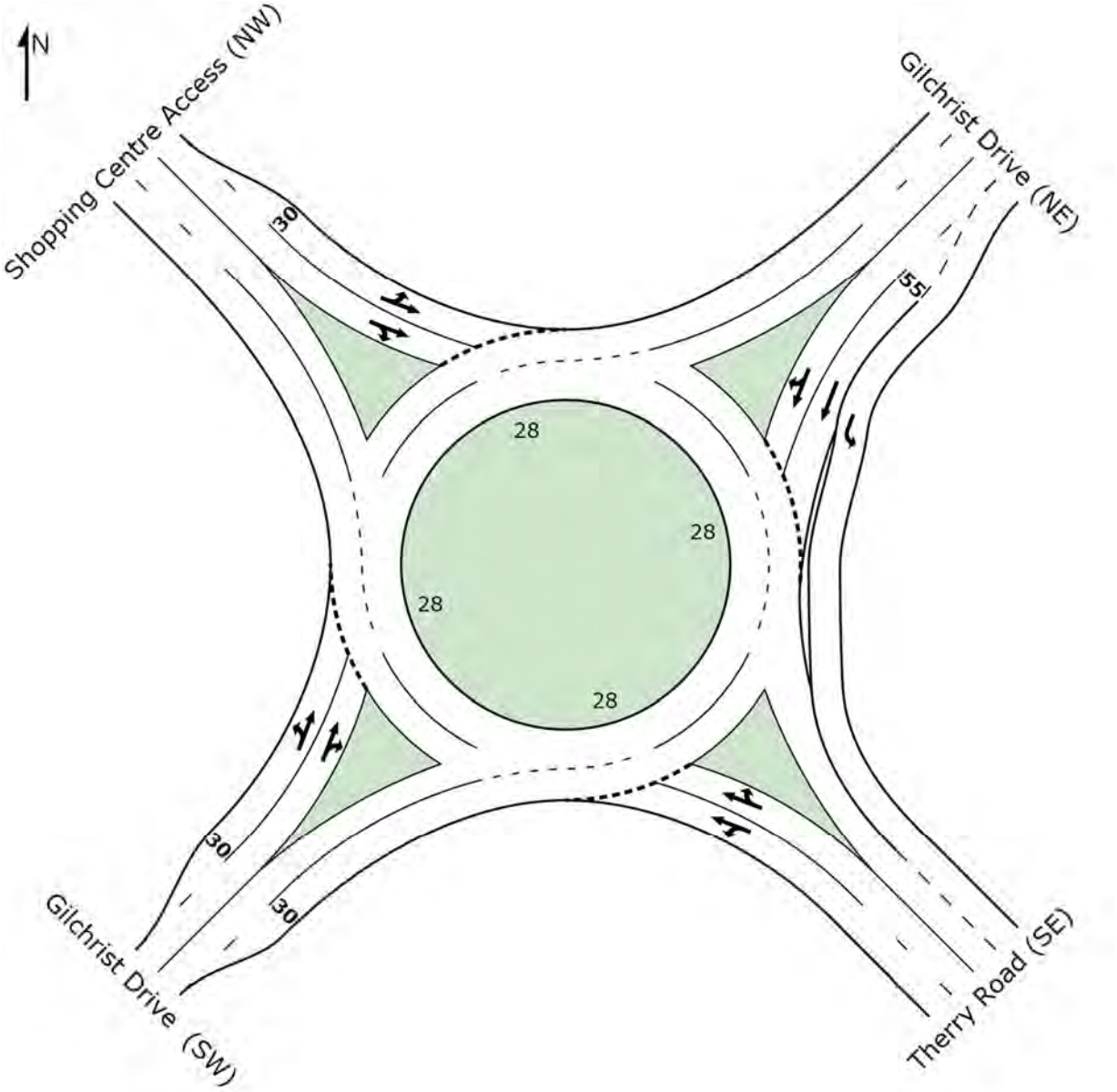
Mount Gilead TIA
I-11 Therry Road / Central Road / Woodhouse Drive
Existing Year 2013 PM Peak
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Woodhouse Drive (S)											
1	L	201	3.7	0.219	7.9	LOS A	1.1	7.9	0.57	0.69	40.4
2	T	84	0.0	0.235	6.2	LOS A	1.2	8.8	0.57	0.57	40.4
3	R	169	1.9	0.235	13.1	LOS A	1.2	8.8	0.57	0.81	37.5
Approach		455	2.3	0.235	9.5	LOS A	1.2	8.8	0.57	0.71	39.2
East: Therry Road (E)											
4	L	265	0.8	0.348	8.8	LOS A	2.2	15.8	0.71	0.76	44.8
5	T	280	1.1	0.348	8.0	LOS A	2.2	15.8	0.71	0.73	44.8
6	R	81	2.6	0.348	15.0	LOS B	2.1	14.9	0.71	0.91	41.6
Approach		626	1.2	0.348	9.3	LOS A	2.2	15.8	0.71	0.77	44.3
North: Central Road (N)											
7	L	225	0.0	0.285	8.5	LOS A	1.3	9.2	0.64	0.75	34.4
8	T	156	0.0	0.365	6.7	LOS A	1.9	13.5	0.65	0.62	34.2
9	R	211	4.0	0.365	13.7	LOS A	1.9	13.5	0.65	0.91	32.7
Approach		592	1.4	0.365	9.9	LOS A	1.9	13.5	0.65	0.77	33.6
West: Therry Road (W)											
10	L	58	12.7	0.309	7.3	LOS A	1.8	12.6	0.49	0.62	49.3
11	T	349	0.6	0.309	5.7	LOS A	1.8	12.6	0.49	0.52	49.5
12	R	302	3.5	0.309	12.8	LOS A	1.7	12.3	0.50	0.74	44.9
Approach		709	2.8	0.309	8.9	LOS A	1.8	12.6	0.49	0.62	47.3
All Vehicles		2382	1.9	0.365	9.4	LOS A	2.2	15.8	0.60	0.71	42.9

I-12 Intersection of Therry Road and Gilchrist Drive

INTERSECTION LAYOUT



MOVEMENT SUMMARY

Site: I-12 EX AM

Mount Gilead TIA
I-12 Therry Road / Gilchrest Drive / Shopping Centre Access
Existing Year 2013 AM Peak
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South East: Therry Road (SE)											
4	L	65	1.6	0.233	7.4	LOS A	1.1	7.6	0.47	0.65	49.2
5	T	162	0.0	0.233	6.1	LOS A	1.1	7.6	0.47	0.55	49.5
6	R	431	3.2	0.356	12.6	LOS A	1.9	13.6	0.49	0.74	44.6
Approach		658	2.2	0.356	10.5	LOS A	1.9	13.6	0.48	0.68	46.1
North East: Gilchrist Drive (NE)											
7	L	362	4.1	0.201	5.5	X	X	X	X	0.47	47.3
8	T	229	3.2	0.215	5.4	LOS A	1.1	8.0	0.36	0.47	44.4
9	R	119	0.0	0.215	11.9	LOS A	1.1	8.0	0.35	0.77	39.5
Approach		711	3.1	0.215	6.5	LOS A	1.1	8.0	0.17	0.52	44.7
North West: Shopping Centre Access (NW)											
10	L	66	3.2	0.085	9.3	LOS A	0.4	3.2	0.71	0.76	33.3
11	T	35	0.0	0.085	8.8	LOS A	0.4	3.2	0.70	0.75	33.8
12	R	20	0.0	0.085	15.5	LOS B	0.4	2.9	0.70	0.90	30.4
Approach		121	1.7	0.085	10.2	LOS A	0.4	3.2	0.71	0.78	32.8
South West: Gilchrist Drive (SW)											
1	L	205	0.0	0.464	8.7	LOS A	2.9	20.5	0.69	0.79	47.9
2	T	521	2.4	0.464	7.9	LOS A	2.9	20.5	0.69	0.73	47.6
3	R	143	0.7	0.464	14.9	LOS B	2.8	19.8	0.70	0.98	44.4
Approach		869	1.6	0.464	9.2	LOS A	2.9	20.5	0.69	0.79	47.1
All Vehicles		2359	2.2	0.464	8.8	LOS A	2.9	20.5	0.48	0.68	45.9

MOVEMENT SUMMARY

Site: I-12 EX PM

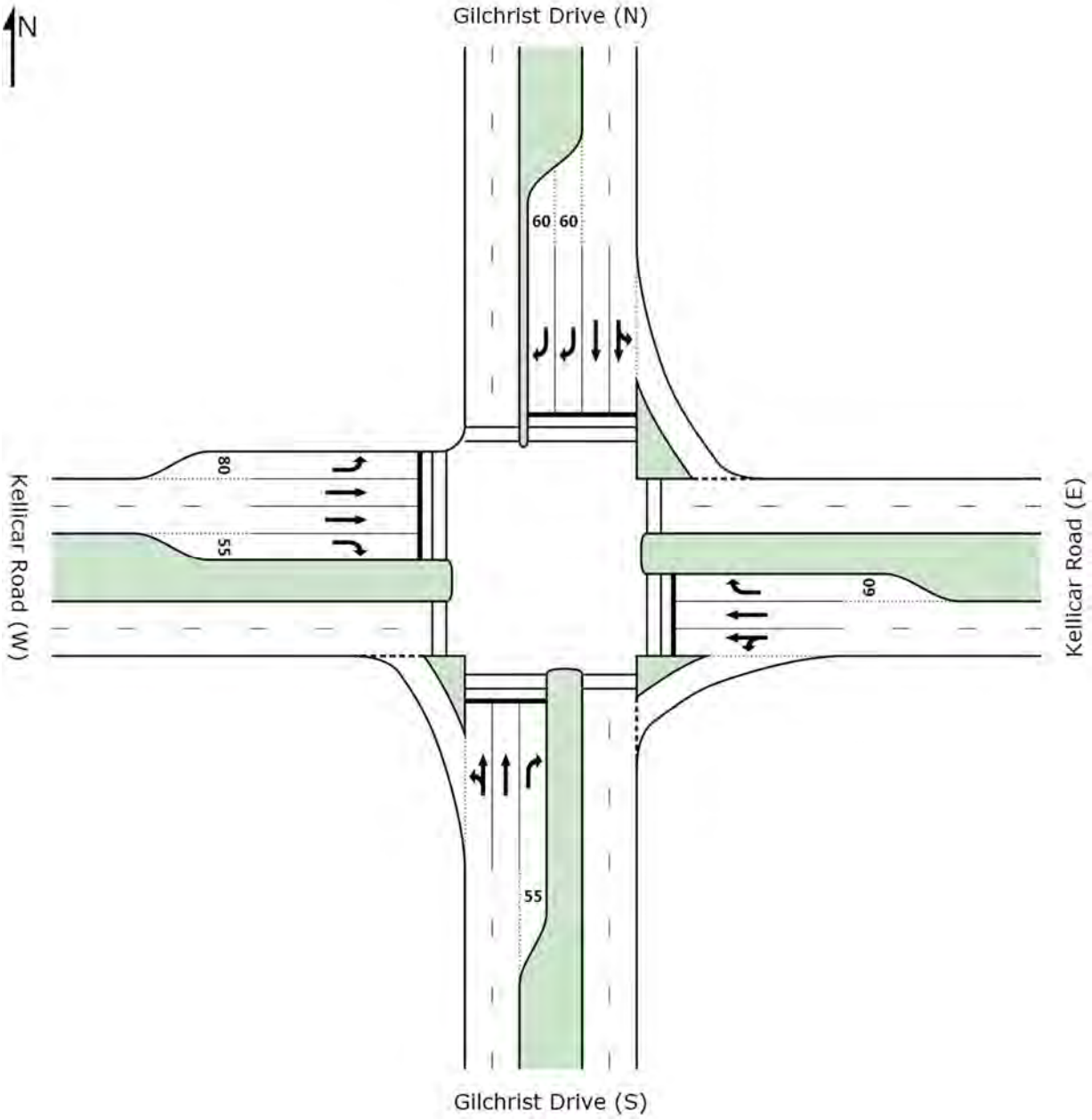
Mount Gilead TIA
I-12 Therry Road / Gilchrest Drive / Shopping Centre Access
Existing Year 2013 PM Peak
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South East: Therry Road (SE)											
4	L	79	0.0	0.325	9.4	LOS A	1.7	11.8	0.69	0.83	47.9
5	T	159	0.0	0.325	8.2	LOS A	1.7	11.8	0.69	0.74	47.8
6	R	427	3.9	0.456	14.9	LOS B	3.0	21.6	0.74	0.92	43.6
Approach		665	2.5	0.456	12.7	LOS A	3.0	21.6	0.72	0.87	45.0
North East: Gilchrist Drive (NE)											
7	L	446	3.5	0.246	5.4	X	X	X	X	0.47	47.3
8	T	560	2.6	0.463	6.2	LOS A	2.8	19.9	0.56	0.56	42.4
9	R	104	0.0	0.463	12.7	LOS A	2.8	19.9	0.58	0.87	39.7
Approach		1111	2.7	0.463	6.5	LOS A	2.8	19.9	0.34	0.55	43.9
North West: Shopping Centre Access (NW)											
10	L	126	0.8	0.274	8.4	LOS A	1.5	10.7	0.66	0.73	34.3
11	T	220	0.5	0.274	7.4	LOS A	1.5	10.7	0.66	0.66	34.3
12	R	138	0.0	0.274	14.3	LOS A	1.4	10.0	0.66	0.89	31.1
Approach		484	0.4	0.274	9.6	LOS A	1.5	10.7	0.66	0.75	33.2
South West: Gilchrist Drive (SW)											
1	L	45	0.0	0.204	7.7	LOS A	1.1	7.5	0.61	0.68	48.5
2	T	288	1.8	0.204	6.8	LOS A	1.1	7.5	0.61	0.61	48.4
3	R	39	0.0	0.204	13.6	LOS A	1.0	7.1	0.62	0.91	45.5
Approach		373	1.4	0.204	7.6	LOS A	1.1	7.5	0.61	0.65	48.1
All Vehicles		2633	2.1	0.463	8.8	LOS A	3.0	21.6	0.53	0.68	43.7

I-13 Intersection of Gilchrist Drive and Kellicar Road

INTERSECTION LAYOUT



MOVEMENT SUMMARY

Site: I-13 EX AM

Mount Gilead TIA
I-13 Narellan Road / Gilchrist Drive / Blaxland Road
Existing Year 2013 AM Peak
Signals - Fixed Time Cycle Time = 93 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Gilchrist Drive (S)											
1	L	107	7.8	0.804	45.0	LOS D	19.2	137.8	0.94	0.97	17.3
2	T	803	1.4	0.804	36.3	LOS C	19.5	138.2	0.95	0.90	17.8
3	R	123	3.4	0.451	48.1	LOS D	5.1	36.7	0.92	0.78	15.8
Approach		1034	2.3	0.804	38.6	LOS C	19.5	138.2	0.94	0.90	17.5
East: Kellicar Road (E)											
4	L	99	8.5	0.220	21.2	LOS B	3.0	22.2	0.73	0.77	31.5
5	T	112	1.9	0.220	28.8	LOS C	3.2	22.6	0.84	0.66	24.4
6	R	23	9.1	0.097	33.8	LOS C	0.8	5.7	0.88	0.70	24.1
Approach		234	5.4	0.220	26.1	LOS B	3.2	22.6	0.80	0.71	27.0
North: Gilchrist Drive (N)											
7	L	192	4.9	0.698	34.9	LOS C	15.3	110.2	0.93	0.91	31.6
8	T	626	1.7	0.698	30.2	LOS C	16.1	114.3	0.94	0.84	30.9
9	R	415	4.6	0.766	53.2	LOS D	9.9	71.7	1.00	0.90	24.5
Approach		1233	3.2	0.766	38.7	LOS C	16.1	114.3	0.96	0.87	28.5
West: Kellicar Road (W)											
10	L	320	5.9	0.569	26.4	LOS B	8.4	61.9	0.62	0.78	20.1
11	T	73	2.9	0.098	33.5	LOS C	1.3	9.1	0.79	0.59	16.1
12	R	62	6.8	0.177	33.7	LOS C	1.9	14.3	0.77	0.73	17.2
Approach		455	5.6	0.569	28.5	LOS C	8.4	61.9	0.67	0.75	18.9
All Vehicles		2955	3.4	0.804	36.1	LOS C	19.5	138.2	0.90	0.85	23.8

PHASING SUMMARY

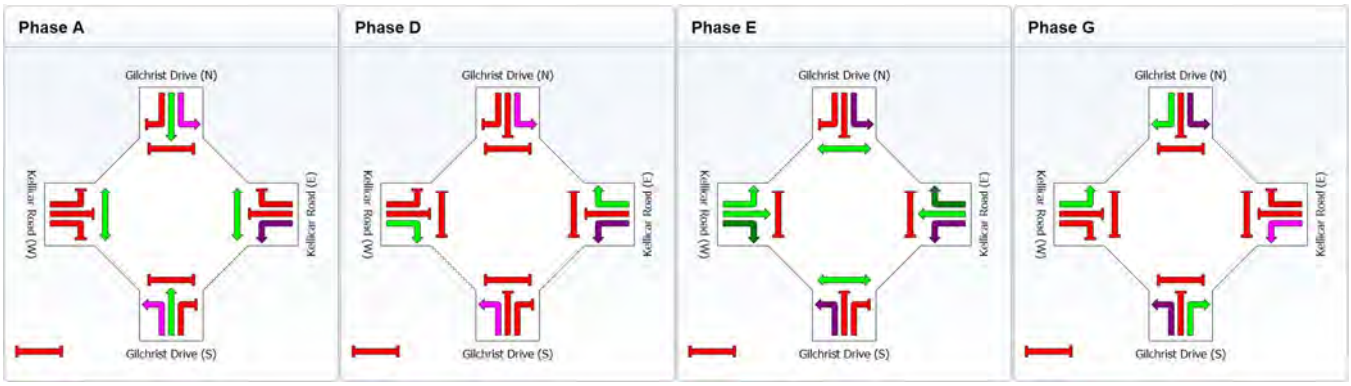
Site: I-13 EX AM

Mount Gilead TIA
I-13 Narellan Road / Gilchrist Drive / Blaxland Road
Existing Year 2013 AM Peak
Signals - Fixed Time Cycle Time = 93 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: TCS 2238
Input Sequence: A, D, E, G
Output Sequence: A, D, E, G

Phase Timing Results

Phase	A	D	E	G
Green Time (sec)	27	6	18	14
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	3	3	3	3
Phase Time (sec)	34	13	25	21
Phase Split	37 %	14 %	27 %	23 %



MOVEMENT SUMMARY

Site: I-13 EX PM

Mount Gilead TIA
I-13 Narellan Road / Gilchrist Drive / Blaxland Road
Existing Year 2013 PM Peak
Signals - Fixed Time Cycle Time = 118 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Gilchrist Drive (S)											
1	L	112	7.5	0.644	46.1	LOS D	17.0	123.2	0.83	0.92	16.9
2	T	669	2.5	0.644	37.2	LOS C	17.8	127.1	0.84	0.76	17.6
3	R	167	3.8	0.738	60.2	LOS E	9.1	65.8	0.94	0.85	13.3
Approach		948	3.3	0.738	42.3	LOS C	17.8	127.1	0.86	0.79	16.6
East: Kellicar Road (E)											
4	L	195	4.9	0.456	33.7	LOS C	8.9	64.5	0.84	0.87	24.4
5	T	232	0.0	0.456	40.6	LOS C	8.9	64.5	0.91	0.76	20.0
6	R	107	2.0	0.769	66.2	LOS E	6.8	48.3	1.00	0.94	15.3
Approach		534	2.2	0.769	43.2	LOS D	8.9	64.5	0.90	0.84	20.1
North: Gilchrist Drive (N)											
7	L	175	3.6	0.808	49.4	LOS D	26.3	189.1	0.98	0.95	26.3
8	T	801	2.6	0.808	42.6	LOS D	27.1	194.3	0.98	0.93	26.3
9	R	377	3.6	0.792	63.4	LOS E	11.1	79.8	0.99	0.90	22.0
Approach		1353	3.0	0.808	49.3	LOS D	27.1	194.3	0.98	0.92	24.9
West: Kellicar Road (W)											
10	L	560	4.1	0.815	30.4	LOS C	15.1	109.1	0.74	0.86	18.2
11	T	254	0.0	0.187	27.1	LOS B	4.2	29.7	0.62	0.50	18.7
12	R	131	6.5	0.394	40.2	LOS C	5.2	38.6	0.84	0.77	15.1
Approach		944	3.3	0.815	30.9	LOS C	15.1	109.1	0.72	0.75	17.8
All Vehicles		3779	3.1	0.815	42.1	LOS C	27.1	194.3	0.88	0.83	21.2

PHASING SUMMARY

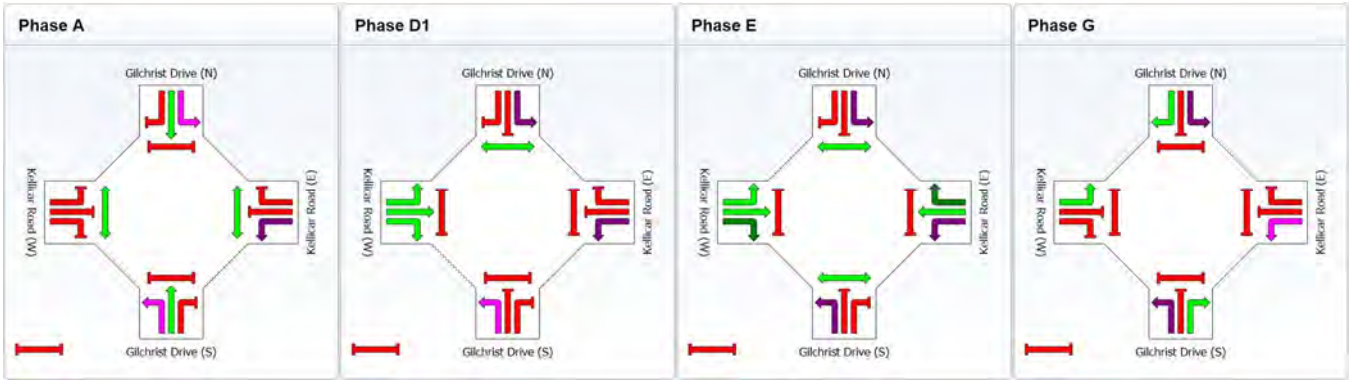
Site: I-13 EX PM

Mount Gilead TIA
I-13 Narellan Road / Gilchrist Drive / Blaxland Road
Existing Year 2013 PM Peak
Signals - Fixed Time Cycle Time = 118 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: TCS 2238
Input Sequence: A, D1, E, G
Output Sequence: A, D1, E, G

Phase Timing Results

Phase	A	D1	E	G
Green Time (sec)	37	11	23	19
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	3	3	3	3
Phase Time (sec)	44	18	30	26
Phase Split	37 %	15 %	25 %	22 %



Year 2021 – Future do-nothing conditions

I-01 Intersection of Appin Road and Church Street

MOVEMENT SUMMARY

Site: I-01 2021 DN AM

Mount Gilead TIA
I-01 Appin Road / Church Street
Future Year 2021 AM Peak Do-nothing scenario
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	85	3.7	0.115	12.6	LOS A	0.4	3.1	0.55	0.96	39.3
3	R	34	6.3	0.046	12.7	LOS A	0.2	1.3	0.54	0.91	39.2
Approach		119	4.4	0.115	12.6	LOS A	0.4	3.1	0.54	0.95	39.3
East: Church Street (E)											
4	L	57	1.9	0.346	6.5	LOS A	0.0	0.0	0.00	0.62	43.3
6	R	560	6.4	0.346	6.5	LOS A	0.0	0.0	0.00	0.60	43.4
Approach		617	6.0	0.346	6.5	NA	0.0	0.0	0.00	0.60	43.4
North: Appin Road (N)											
7	L	303	9.4	0.174	5.8	X	X	X	X	0.52	44.1
8	T	55	3.8	0.080	13.0	LOS A	0.3	2.1	0.56	0.96	39.0
Approach		358	8.5	0.174	6.9	LOS A	0.3	2.1	0.09	0.59	43.3
All Vehicles		1094	6.6	0.346	7.3	NA	0.4	3.1	0.09	0.64	42.9

MOVEMENT SUMMARY

Site: I-01 2021 DN PM

Mount Gilead TIA
I-01 Appin Road / Church Street
Future Year 2021 PM Peak Do-nothing scenario
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	100	2.1	0.107	11.3	LOS A	0.4	3.0	0.46	0.91	40.1
3	R	57	5.6	0.066	11.8	LOS A	0.3	1.9	0.49	0.90	39.8
Approach		157	3.4	0.107	11.4	LOS A	0.4	3.0	0.47	0.91	40.0
East: Church Street (E)											
4	L	74	4.3	0.265	6.5	LOS A	0.0	0.0	0.00	0.62	43.3
6	R	398	6.6	0.265	6.5	LOS A	0.0	0.0	0.00	0.60	43.4
Approach		472	6.3	0.265	6.5	NA	0.0	0.0	0.00	0.60	43.4
North: Appin Road (N)											
7	L	667	2.1	0.365	5.7	X	X	X	X	0.53	44.1
8	T	88	1.2	0.104	11.7	LOS A	0.4	2.8	0.50	0.93	39.8
Approach		756	1.9	0.365	6.4	LOS A	0.4	2.8	0.06	0.57	43.6
All Vehicles		1384	3.6	0.365	7.0	NA	0.4	3.0	0.09	0.62	43.1

I-02 Intersection of Appin Road, Kellerman Drive and Copperfield Drive

MOVEMENT SUMMARY

Site: I-02 2021 DN AM

Mount Gilead TIA
I-02 Appin Road / Kellerman Drive / Copperfield Drive
Future Year 2021 AM Peak Do-nothing scenario
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	52	0.0	0.732	11.8	LOS A	9.4	68.5	0.83	0.80	50.7
2	T	752	5.5	0.732	11.9	LOS A	9.4	68.5	0.83	0.79	51.1
3	R	3	0.0	0.732	16.5	LOS B	9.4	68.5	0.83	0.86	47.1
Approach		806	5.1	0.732	11.9	LOS A	9.4	68.5	0.83	0.79	51.1
East: Kellerman Drive (E)											
4	L	14	0.0	0.287	10.8	LOS A	1.7	12.9	0.65	0.75	49.2
5	T	155	9.5	0.287	8.8	LOS A	1.7	12.9	0.65	0.71	47.4
6	R	81	2.6	0.287	15.4	LOS B	1.7	12.9	0.65	0.85	45.1
Approach		249	6.8	0.287	11.0	LOS A	1.7	12.9	0.65	0.76	46.7
North: Appin Road (N)											
7	L	49	2.1	0.349	9.6	LOS A	2.6	19.4	0.44	0.62	56.3
8	T	327	10.9	0.349	10.4	LOS A	2.6	19.4	0.44	0.59	58.0
9	R	35	9.1	0.349	14.3	LOS A	2.6	19.4	0.44	0.78	52.8
Approach		412	9.7	0.349	10.6	LOS A	2.6	19.4	0.44	0.61	57.3
West: Copperfield Drive (W)											
10	L	127	3.3	0.465	15.5	LOS B	3.8	27.6	0.95	1.00	43.4
11	T	25	8.3	0.465	13.8	LOS A	3.8	27.6	0.95	1.01	42.7
12	R	108	1.9	0.465	20.9	LOS B	3.8	27.6	0.95	1.02	42.3
Approach		261	3.2	0.465	17.6	LOS B	3.8	27.6	0.95	1.01	42.8
All Vehicles		1728	6.2	0.732	12.3	LOS A	9.4	68.5	0.73	0.78	50.3

MOVEMENT SUMMARY

Site: I-02 2021 DN PM

Mount Gilead TIA
I-02 Appin Road / Kellerman Drive / Copperfield Drive
Future Year 2021 PM Peak Do-nothing scenario
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	26	4.0	0.452	9.3	LOS A	3.5	25.3	0.62	0.69	51.9
2	T	439	5.0	0.452	9.2	LOS A	3.5	25.3	0.62	0.66	52.5
3	R	20	0.0	0.452	13.9	LOS A	3.5	25.3	0.62	0.81	49.3
Approach		485	4.8	0.452	9.4	LOS A	3.5	25.3	0.62	0.67	52.4
East: Kellerman Drive (E)											
4	L	18	0.0	0.660	31.8	LOS C	6.8	50.2	1.00	1.18	34.7
5	T	138	6.1	0.660	29.7	LOS C	6.8	50.2	1.00	1.18	32.8
6	R	73	8.7	0.660	36.6	LOS C	6.8	50.2	1.00	1.18	32.5
Approach		228	6.5	0.660	32.1	LOS C	6.8	50.2	1.00	1.18	32.8
North: Appin Road (N)											
7	L	80	1.3	0.871	15.2	LOS B	18.0	128.0	1.00	0.81	51.3
8	T	922	1.5	0.871	15.5	LOS B	18.0	128.0	1.00	0.81	53.0
9	R	49	6.4	0.871	19.8	LOS B	18.0	128.0	1.00	0.81	48.0
Approach		1052	1.7	0.871	15.7	LOS B	18.0	128.0	1.00	0.81	52.6
West: Copperfield Drive (W)											
10	L	48	0.0	0.286	10.5	LOS A	1.8	13.1	0.70	0.76	47.6
11	T	75	5.6	0.286	8.9	LOS A	1.8	13.1	0.70	0.72	46.7
12	R	117	2.7	0.286	16.1	LOS B	1.8	13.1	0.70	0.84	45.9
Approach		240	3.1	0.286	12.7	LOS A	1.8	13.1	0.70	0.79	46.5
All Vehicles		2005	3.1	0.871	15.7	LOS B	18.0	128.0	0.87	0.81	48.6

I-03 Intersection of Appin Road, Kellerman Drive and Fitzgibbon Lane

MOVEMENT SUMMARY

Site: I-03 2021 DN AM

Mount Gilead TIA
I-03 Appin Road / Kellerman Drive / Fitzgibbon Lane
Future Year 2021 AM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	31	0.0	0.995	56.7	LOS E	21.4	155.0	1.00	0.86	28.0
2	T	982	4.4	0.995	79.3	LOS F	60.6	440.0	1.00	1.09	21.6
3	R	3	0.0	0.024	76.1	LOS F	0.2	1.4	0.95	0.64	20.9
Approach		1016	4.2	0.995	78.6	LOS F	60.6	440.0	1.00	1.08	21.7
East: Kellerman Drive (E)											
4	L	6	0.0	0.390	49.5	LOS D	2.6	18.2	0.78	0.80	21.8
5	T	128	0.0	0.994	88.4	LOS F	23.7	166.8	0.92	1.00	12.4
6	R	155	0.7	0.994	123.7	LOS F	23.7	166.8	1.00	1.22	11.5
Approach		289	0.4	0.994	106.4	LOS F	23.7	166.8	0.96	1.11	12.0
North: Appin Road (N)											
7	L	78	1.4	0.201	28.5	LOS C	6.9	50.8	0.58	0.89	37.3
8	T	376	10.6	0.282	20.1	LOS B	10.1	76.8	0.60	0.51	41.4
9	R	365	0.3	0.985	86.9	LOS F	24.8	173.8	1.00	1.07	18.4
Approach		819	5.1	0.985	50.7	LOS D	24.8	173.8	0.78	0.80	26.6
West: Fitzgibbon Lane (W)											
10	L	526	1.4	0.507	28.9	LOS C	21.5	152.5	0.66	0.83	31.0
11	T	120	2.6	0.604	45.9	LOS D	7.8	55.8	0.86	0.69	19.8
12	R	20	5.3	0.604	54.9	LOS D	7.8	55.8	0.86	0.82	20.5
Approach		666	1.7	0.604	32.7	LOS C	21.5	152.5	0.70	0.80	28.1
All Vehicles		2791	3.5	0.995	62.3	LOS E	60.6	440.0	0.86	0.93	22.5

MOVEMENT SUMMARY

Site: I-03 2021 DN PM

Mount Gilead TIA
I-03 Appin Road / Kellerman Drive / Fitzgibbon Lane
Future Year 2021 PM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	15	0.0	0.624	58.7	LOS E	12.3	89.5	0.90	0.90	27.1
2	T	484	4.6	0.624	50.0	LOS D	17.5	127.6	0.93	0.79	29.1
3	R	2	0.0	0.010	66.8	LOS E	0.1	0.9	0.89	0.63	23.0
Approach		501	4.4	0.624	50.4	LOS D	17.5	127.6	0.93	0.79	29.0
East: Kellerman Drive (E)											
4	L	7	0.0	0.257	58.5	LOS E	1.7	12.0	0.85	0.75	19.3
5	T	89	0.0	0.656	59.5	LOS E	9.2	64.6	0.96	0.78	16.4
6	R	72	0.0	0.656	72.1	LOS F	9.2	64.6	0.99	0.84	17.7
Approach		168	0.0	0.656	64.8	LOS E	9.2	64.6	0.97	0.80	17.1
North: Appin Road (N)											
7	L	177	1.2	0.470	30.4	LOS C	19.8	140.6	0.67	0.92	36.4
8	T	979	1.9	0.658	23.6	LOS B	32.7	232.5	0.74	0.67	38.5
9	R	448	0.5	0.652	29.2	LOS C	13.9	98.0	0.89	0.85	35.7
Approach		1604	1.4	0.658	25.9	LOS B	32.7	232.5	0.77	0.75	37.5
West: Fitzgibbon Lane (W)											
10	L	265	1.2	0.219	19.3	LOS B	7.1	50.0	0.43	0.77	37.5
11	T	117	2.7	0.641	56.1	LOS D	8.4	60.3	0.94	0.77	17.3
12	R	19	5.6	0.641	65.0	LOS E	8.4	60.3	0.94	0.82	18.2
Approach		401	1.8	0.641	32.2	LOS C	8.4	60.3	0.60	0.77	27.7
All Vehicles		2675	2.0	0.658	33.9	LOS C	32.7	232.5	0.79	0.76	32.4

I-04 Intersection of Appin Road and Woodland Road

MOVEMENT SUMMARY

Site: I-04 2021 DN AM

Mount Gilead TIA
I-04 Appin Road / Woodland Road
Future Year 2021 AM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	1564	3.6	0.653	8.7	LOS A	18.7	135.2	0.39	0.36	59.8
3	R	80	2.6	0.238	52.4	LOS D	4.2	29.9	0.81	0.77	27.1
Approach		1644	3.6	0.653	10.8	LOS A	18.7	135.2	0.41	0.38	56.9
East: Woodland Road (E)											
4	L	101	1.0	0.643	46.2	LOS D	6.5	46.1	0.76	0.79	18.6
6	R	355	3.3	0.643	56.2	LOS D	19.5	140.4	0.92	0.84	17.8
Approach		456	2.8	0.643	53.9	LOS D	19.5	140.4	0.89	0.83	17.9
North: Appin Road (N)											
7	L	141	4.5	0.198	20.2	LOS B	3.8	27.4	0.43	0.75	42.0
8	T	728	4.9	0.628	43.7	LOS D	19.7	143.6	0.85	0.74	28.9
Approach		869	4.8	0.628	39.9	LOS C	19.7	143.6	0.78	0.74	30.4
All Vehicles		2969	3.8	0.653	25.9	LOS B	19.7	143.6	0.59	0.55	39.0

MOVEMENT SUMMARY

Site: I-04 2021 DN PM

Mount Gilead TIA
I-04 Appin Road / Woodland Road
Future Year 2021 PM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	764	4.0	0.266	1.3	LOS A	1.7	12.3	0.07	0.06	76.0
3	R	96	0.0	0.555	77.7	LOS F	6.5	45.4	1.00	0.78	20.6
Approach		860	3.5	0.555	9.8	LOS A	6.5	45.4	0.18	0.14	60.1
East: Woodland Road (E)											
4	L	94	0.0	0.654	60.8	LOS E	6.7	47.3	0.89	0.80	15.1
6	R	197	4.3	0.654	70.1	LOS E	11.6	84.5	0.98	0.82	15.0
Approach		291	2.9	0.654	67.1	LOS E	11.6	84.5	0.95	0.82	15.1
North: Appin Road (N)											
7	L	368	2.0	0.365	12.8	LOS A	6.1	43.6	0.27	0.74	48.9
8	T	1528	1.4	0.651	10.5	LOS A	20.6	146.0	0.44	0.40	51.1
Approach		1897	1.5	0.651	11.0	LOS A	20.6	146.0	0.40	0.47	50.6
All Vehicles		3047	2.2	0.654	16.0	LOS B	20.6	146.0	0.39	0.41	46.8

I-05 Intersection of Appin Road and St Johns Road

MOVEMENT SUMMARY

Site: I-05 2021 DN AM

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Future Year 2021 AM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	1662	3.5	0.636	4.1	LOS A	11.4	82.0	0.22	0.21	68.7
3	R	287	2.6	0.667	45.0	LOS D	14.5	103.7	0.80	0.82	30.0
Approach		1949	3.3	0.667	10.1	LOS A	14.5	103.7	0.31	0.30	58.7
East: St Johns Road (E)											
4	L	215	2.0	0.757	24.7	LOS B	8.4	60.0	0.63	0.81	35.1
6	R	393	1.1	0.757	57.2	LOS E	20.3	143.7	0.92	0.86	22.0
Approach		607	1.4	0.757	45.7	LOS D	20.3	143.7	0.81	0.84	25.3
North: Appin Road (N)											
7	L	225	3.3	0.124	11.2	X	X	X	X	0.69	58.9
8	T	645	6.7	0.653	49.3	LOS D	18.5	137.3	0.90	0.77	29.4
Approach		871	5.8	0.653	39.4	LOS C	18.5	137.3	0.66	0.75	33.8
All Vehicles		3427	3.6	0.757	23.9	LOS B	20.3	143.7	0.49	0.51	42.3

MOVEMENT SUMMARY

Site: I-05 2021 DN PM

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Future Year 2021 PM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	832	2.8	0.287	1.3	LOS A	1.9	13.6	0.07	0.07	76.0
3	R	143	2.9	0.735	79.3	LOS F	10.0	71.9	1.00	0.84	20.4
Approach		975	2.8	0.735	12.8	LOS A	10.0	71.9	0.21	0.18	55.9
East: St Johns Road (E)											
4	L	156	0.7	0.743	37.9	LOS C	7.6	53.3	0.92	0.86	28.2
6	R	252	0.4	0.743	67.0	LOS E	14.1	98.9	0.99	0.86	19.7
Approach		407	0.5	0.743	55.9	LOS D	14.1	98.9	0.96	0.86	22.3
North: Appin Road (N)											
7	L	353	1.8	0.192	11.2	X	X	X	X	0.69	58.8
8	T	1756	1.7	0.759	12.5	LOS A	29.9	212.7	0.55	0.51	53.9
Approach		2108	1.7	0.759	12.3	LOS A	29.9	212.7	0.46	0.54	54.6
All Vehicles		3491	1.9	0.759	17.5	LOS B	29.9	212.7	0.45	0.48	48.5

I-06 Intersection of Appin Road and Therry Road

MOVEMENT SUMMARY

Site: I-06 2021 DN AM

Mount Gilead TIA
I-06 Appin Road / Therry Road
Future Year 2021 AM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	546	0.4	0.295	11.1	X	X	X	X	0.69	58.8
2	T	1533	3.8	0.806	23.8	LOS B	37.1	268.5	0.78	0.71	42.5
Approach		2079	2.9	0.806	20.5	LOS B	37.1	268.5	0.58	0.71	45.8
North: Appin Road (N)											
8	T	618	7.0	0.221	1.3	LOS A	1.3	9.6	0.07	0.06	76.1
9	R	298	1.1	0.808	72.1	LOS F	20.6	145.8	1.00	0.89	21.9
Approach		916	5.1	0.808	24.3	LOS B	20.6	145.8	0.37	0.33	43.8
West: Therry Road (W)											
10	L	447	1.9	0.244	7.6	X	X	X	X	0.60	47.4
12	R	261	1.6	0.452	67.6	LOS E	8.2	58.2	0.96	0.80	19.9
Approach		708	1.8	0.452	29.7	LOS C	8.2	58.2	0.35	0.67	30.5
All Vehicles		3703	3.2	0.808	23.2	LOS B	37.1	268.5	0.48	0.61	42.2

MOVEMENT SUMMARY

Site: I-06 2021 DN PM

Mount Gilead TIA
I-06 Appin Road / Therry Road
Future Year 2021 PM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	323	1.0	0.175	11.1	X	X	X	X	0.69	58.8
2	T	791	3.9	0.766	51.4	LOS D	24.2	174.7	0.94	0.83	28.7
Approach		1114	3.0	0.766	39.7	LOS C	24.2	174.7	0.67	0.79	33.6
North: Appin Road (N)											
8	T	1608	2.3	0.569	1.9	LOS A	5.8	41.6	0.12	0.11	74.1
9	R	408	1.0	0.780	45.2	LOS D	21.7	153.2	0.81	0.85	29.9
Approach		2017	2.0	0.780	10.7	LOS A	21.7	153.2	0.26	0.26	58.3
West: Therry Road (W)											
10	L	385	1.1	0.209	7.6	X	X	X	X	0.60	47.4
12	R	487	0.2	0.767	72.0	LOS F	16.6	116.6	1.00	0.88	19.0
Approach		873	0.6	0.767	43.5	LOS D	16.6	116.6	0.56	0.76	25.2
All Vehicles		4003	2.0	0.780	25.9	LOS B	24.2	174.7	0.44	0.52	40.3

I-07 Intersection of Appin Road, Narellan Road, Oxley Street and The Parkway

MOVEMENT SUMMARY

Site: I-07 2021 DN AM

Mount Gilead TIA
I-07 Appin Road / Oxley Street / Narellan Road / Kellicar Road
Future Year 2021 AM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 130 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	538	8.0	0.306	7.8	X	X	X	X	0.60	49.7
2	T	1414	2.1	0.975	69.6	LOS E	57.0	406.4	1.00	1.15	19.9
3	R	34	0.0	0.084	23.2	LOS B	0.9	6.6	0.63	0.71	36.7
Approach		1985	3.7	0.975	52.1	LOS D	57.0	406.4	0.72	0.99	24.1
East: The Parkway (E)											
4	L	24	4.3	0.013	7.7	X	X	X	X	0.60	37.8
5	T	265	1.2	0.990	100.0	LOS F	22.8	161.6	1.00	1.20	6.4
6	R	229	2.8	0.998	69.4	LOS E	14.8	106.1	1.00	0.83	9.2
Approach		519	2.0	0.998	82.2	LOS F	22.8	161.6	0.95	1.01	7.8
North: Oxley Street (N)											
7	L	128	4.9	0.072	7.7	X	X	X	X	0.60	46.7
8	T	631	2.3	0.435	32.2	LOS C	14.8	105.3	0.80	0.69	28.2
9	R	259	2.0	0.968	98.9	LOS F	21.3	151.6	1.00	1.07	12.6
Approach		1018	2.6	0.968	46.0	LOS D	21.3	151.6	0.75	0.77	22.8
West: Narellan Road (W)											
10	L	296	1.8	0.497	27.3	LOS B	9.3	66.0	0.57	0.74	30.6
11	T	246	0.4	0.930	74.0	LOS F	20.1	142.1	1.00	1.04	15.8
12	R	276	10.3	0.930	84.6	LOS F	20.1	142.1	1.00	1.00	17.0
Approach		818	4.2	0.930	60.7	LOS E	20.1	142.1	0.85	0.92	19.6
All Vehicles		4340	3.3	0.998	55.9	LOS D	57.0	406.4	0.78	0.93	20.8

MOVEMENT SUMMARY

Site: I-07 2021 DN PM

Mount Gilead TIA
I-07 Appin Road / Oxley Street / Narellan Road / Kellicar Road
Future Year 2021 PM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 110 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	334	5.7	0.187	7.7	X	X	X	X	0.60	49.8
2	T	793	1.9	0.905	55.9	LOS D	23.7	168.8	1.00	1.03	22.8
3	R	72	0.0	0.727	64.7	LOS E	4.3	29.8	1.00	0.90	21.7
Approach		1198	2.8	0.905	43.0	LOS D	23.7	168.8	0.72	0.90	26.8
East: The Parkway (E)											
4	L	27	3.8	0.015	7.7	X	X	X	X	0.60	37.8
5	T	195	2.7	0.932	70.5	LOS F	12.7	91.1	1.00	1.08	8.6
6	R	169	2.5	0.851	68.6	LOS E	10.1	72.2	1.00	0.96	9.3
Approach		392	2.7	0.932	65.3	LOS E	12.7	91.1	0.93	1.00	9.4
North: Oxley Street (N)											
7	L	385	2.2	0.211	7.6	X	X	X	X	0.60	46.7
8	T	1418	1.6	0.792	27.6	LOS B	32.6	231.3	0.92	0.84	29.9
9	R	299	0.7	0.890	67.8	LOS E	18.4	129.6	1.00	0.99	16.7
Approach		2102	1.6	0.890	29.6	LOS C	32.6	231.3	0.76	0.82	28.8
West: Narellan Road (W)											
10	L	200	1.6	0.204	11.9	LOS A	2.0	14.3	0.23	0.66	42.4
11	T	351	0.3	0.926	57.5	LOS E	29.1	204.8	1.00	1.07	18.6
12	R	563	2.2	0.926	67.2	LOS E	29.1	204.8	1.00	1.02	20.0
Approach		1114	1.5	0.926	54.2	LOS D	29.1	204.8	0.86	0.97	21.5
All Vehicles		4805	2.0	0.932	41.6	LOS C	32.6	231.3	0.79	0.89	24.6

MOVEMENT SUMMARY

Site: I-08 2021 DN AM

Mount Gilead TIA
I-08 Narellan Road / Kellicar Road
Future Year 2021 AM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 115 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	143	5.1	0.904	60.4	LOS E	31.1	226.9	1.00	1.02	19.7
2	T	871	4.8	0.904	52.4	LOS D	31.1	226.9	1.00	1.03	19.9
3	R	121	2.6	0.382	54.0	LOS D	5.8	41.7	0.89	0.78	20.6
Approach		1135	4.6	0.904	53.5	LOS D	31.1	226.9	0.99	1.00	19.9
East: Kellicar Road (E)											
4	L	22	0.0	0.701	56.5	LOS E	12.7	93.3	0.96	0.86	12.4
5	T	460	6.2	0.701	48.7	LOS D	12.7	93.5	0.96	0.82	12.6
6	R	384	6.0	0.886	71.5	LOS F	12.0	88.2	1.00	0.96	9.9
Approach		866	6.0	0.886	59.0	LOS E	12.7	93.5	0.98	0.88	11.2
North: Narellan Road (N)											
7	L	1027	2.4	0.895	20.9	LOS B	26.7	190.5	0.56	0.92	38.3
8	T	695	4.2	0.619	37.3	LOS C	15.7	113.7	0.85	0.74	28.5
9	R	295	2.5	0.929	74.1	LOS F	19.4	138.6	1.00	1.00	19.8
Approach		2017	3.0	0.929	34.3	LOS C	26.7	190.5	0.73	0.87	30.6
West: Kellicar Road (W)											
10	L	121	6.1	0.217	28.7	LOS C	3.4	24.7	0.53	0.74	23.0
11	T	623	4.7	0.902	60.6	LOS E	19.5	142.0	1.00	1.02	13.0
12	R	136	3.1	0.614	61.7	LOS E	7.4	52.9	0.98	0.80	13.5
Approach		880	4.7	0.902	56.4	LOS D	19.5	142.0	0.93	0.95	13.9
All Vehicles		4898	4.2	0.929	47.1	LOS D	31.1	226.9	0.87	0.92	21.5

MOVEMENT SUMMARY

Site: I-08 2021 DN PM

Mount Gilead TIA
I-08 Narellan Road / Kellicar Road
Future Year 2021 PM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 135 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	178	0.0	1.018	115.5	LOS F	46.0	327.8	1.00	1.23	11.9
2	T	782	3.5	1.018	107.4	LOS F	46.0	327.8	1.00	1.26	12.0
3	R	148	0.0	0.568	67.4	LOS E	9.1	63.5	0.96	0.80	17.7
Approach		1108	2.5	1.018	103.4	LOS F	46.0	327.8	0.99	1.19	12.5
East: Kellicar Road (E)											
4	L	27	0.0	1.020	117.8	LOS F	42.2	305.9	1.00	1.29	6.5
5	T	861	4.5	1.020	109.6	LOS F	42.2	305.9	1.00	1.28	6.6
6	R	726	2.0	1.030	126.4	LOS F	35.1	250.2	1.00	1.14	6.0
Approach		1615	3.3	1.030	117.3	LOS F	42.2	305.9	1.00	1.22	6.3
North: Narellan Road (N)											
7	L	551	2.3	0.521	9.3	LOS A	3.5	24.7	0.12	0.64	48.0
8	T	929	1.8	0.988	90.6	LOS F	40.3	286.6	1.00	1.19	16.7
9	R	258	1.8	1.000 [3]	103.4	LOS F	21.8	155.0	1.00	1.04	15.7
Approach		1738	1.9	1.000	66.7	LOS E	40.3	286.6	0.72	0.99	20.8
West: Kellicar Road (W)											
10	L	263	0.8	0.510	33.4	LOS C	9.4	66.5	0.59	0.77	20.8
11	T	574	5.5	0.664	51.1	LOS D	16.5	121.3	0.93	0.79	14.8
12	R	213	0.5	0.597	62.1	LOS E	12.4	87.4	0.93	0.82	13.4
Approach		1049	3.3	0.664	48.9	LOS D	16.5	121.3	0.84	0.79	15.6
All Vehicles		5511	2.7	1.030	85.5	LOS F	46.0	327.8	0.88	1.06	13.2

I-09 Intersection of Narellan Road, Gilchrist Drive and Blaxland Road

MOVEMENT SUMMARY

Site: I-09 2021 DN AM

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Future Year 2021 AM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 150 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	14	53.8	0.037	22.1	LOS B	0.4	4.1	0.46	0.65	38.4
2	T	1087	5.8	1.087	163.6	LOS F	66.0	484.9	1.00	1.46	10.7
3	R	294	2.4	1.005	126.1	LOS F	29.7	212.1	1.00	1.13	13.5
Approach		1395	5.4	1.087	154.3	LOS F	66.0	484.9	0.99	1.38	11.3
East: Blaxland Road (E)											
4	L	409	2.9	1.000 [3]	57.3	LOS E	25.0	179.5	1.00	0.87	23.3
5	T	632	2.2	1.130	205.8	LOS F	41.8	298.4	1.00	1.48	8.9
6	R	582	9.9	1.095	190.3	LOS F	36.4	276.5	1.00	1.28	9.7
Approach		1623	5.2	1.130	162.8	LOS F	41.8	298.4	1.00	1.26	10.9
North: Narellan Road (N)											
7	L	719	7.8	0.923	24.2	LOS B	21.9	163.2	0.68	0.90	36.4
8	T	1408	3.8	0.974	75.1	LOS F	63.4	458.2	1.00	1.11	19.0
9	R	839	4.8	1.118	117.9	LOS F	48.2	350.9	1.00	1.13	14.3
Approach		2965	5.0	1.118	74.8	LOS F	63.4	458.2	0.92	1.07	19.4
West: Gilchrist Drive (W)											
10	L	772	3.5	0.766	31.6	LOS C	13.9	100.4	0.79	0.85	32.4
11	T	448	1.4	0.791	70.9	LOS F	16.7	118.4	1.00	0.90	19.7
12	R	20	0.0	0.143	66.1	LOS E	1.2	8.7	0.89	0.70	21.4
Approach		1240	2.7	0.791	46.3	LOS D	16.7	118.4	0.87	0.87	26.1
All Vehicles		7223	4.8	1.130	105.1	LOS F	66.0	484.9	0.94	1.14	15.3

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-09 2021 DN PM

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Future Year 2021 PM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	5	0.0	0.008	18.2	LOS B	0.1	1.0	0.42	0.63	40.1
2	T	1586	2.7	1.239	283.7	LOS F	125.9	901.7	1.00	1.97	6.7
3	R	173	1.1	1.312	373.2	LOS F	30.0	212.2	1.00	1.65	5.4
Approach		1764	2.4	1.312	291.6	LOS F	125.9	901.7	1.00	1.93	6.6
East: Blaxland Road (E)											
4	L	449	2.8	0.960	49.9	LOS D	25.0	179.5	1.00	0.89	25.3
5	T	893	2.3	1.270	321.0	LOS F	74.1	528.6	1.00	1.90	6.0
6	R	654	2.5	1.213	268.5	LOS F	50.2	359.0	1.00	1.50	7.2
Approach		1997	2.5	1.270	242.8	LOS F	74.1	528.6	1.00	1.54	7.8
North: Narellan Road (N)											
7	L	516	3.1	0.618	15.3	LOS B	13.2	94.5	0.45	0.72	42.4
8	T	1283	3.1	0.897	50.1	LOS D	39.7	285.2	0.98	1.10	24.0
9	R	587	3.4	1.185	179.5	LOS F	48.7	350.9	1.00	1.22	10.2
Approach		2386	3.2	1.185	74.4	LOS F	48.7	350.9	0.87	1.05	19.4
West: Gilchrist Drive (W)											
10	L	755	3.1	1.000 [3]	50.7	LOS D	22.7	163.2	1.00	0.86	25.3
11	T	668	3.1	0.956	88.6	LOS F	28.9	207.8	1.00	1.13	16.9
12	R	73	0.0	0.496	65.0	LOS E	4.4	31.1	0.93	0.76	21.6
Approach		1496	3.0	1.000	68.3	LOS E	28.9	207.8	1.00	0.98	20.6
All Vehicles		7643	2.8	1.312	167.3	LOS F	125.9	901.7	0.96	1.37	10.6

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

I-10 Intersection of Oxley Street and Camden Road

MOVEMENT SUMMARY

Site: I-10 2021 DN AM

Mount Gilead TIA
I-10 Oxley Street / Blaxland Road
Future Year 2021 AM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 105 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Oxley Street (S)											
1	L	247	1.7	0.712	11.8	LOS A	12.7	90.1	0.29	0.89	42.4
2	T	1680	2.2	0.712	3.0	LOS A	12.7	90.1	0.24	0.23	52.2
Approach		1927	2.1	0.712	4.1	LOS A	12.7	90.1	0.24	0.31	50.7
North: Oxley Street (N)											
8	T	983	2.7	0.290	0.3	LOS A	0.9	6.4	0.07	0.04	57.1
9	R	83	0.0	0.672	64.2	LOS E	4.5	31.7	1.00	0.82	12.8
Approach		1066	2.5	0.672	5.2	LOS A	4.5	31.7	0.15	0.10	45.0
West: Camden Road (W)											
10	L	48	4.3	0.153	9.3	LOS A	0.4	3.0	0.23	0.65	34.5
12	R	74	2.9	0.709	66.3	LOS E	4.1	29.3	1.00	0.83	9.0
Approach		122	3.4	0.709	43.7	LOS D	4.1	29.3	0.70	0.76	13.0
All Vehicles		3116	2.3	0.712	6.0	LOS A	12.7	90.1	0.23	0.26	46.3

MOVEMENT SUMMARY

Site: I-10 2021 DN PM

Mount Gilead TIA
I-10 Oxley Street / Blaxland Road
Future Year 2021 PM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 75 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Oxley Street (S)											
1	L	183	0.0	0.703	23.5	LOS B	15.2	107.9	0.79	0.89	33.1
2	T	979	2.2	0.703	16.2	LOS B	15.3	109.0	0.78	0.70	34.5
Approach		1162	1.8	0.703	17.3	LOS B	15.3	109.0	0.78	0.73	34.3
North: Oxley Street (N)											
8	T	1832	2.0	0.566	0.4	LOS A	1.8	13.1	0.12	0.06	55.5
9	R	73	1.4	0.494	46.6	LOS D	2.8	19.5	1.00	0.76	16.4
Approach		1904	1.9	0.566	2.1	LOS A	2.8	19.5	0.15	0.09	50.9
West: Camden Road (W)											
10	L	105	3.0	0.175	11.9	LOS A	1.3	9.3	0.43	0.69	30.6
12	R	329	0.0	0.700	37.2	LOS C	11.5	80.8	0.96	0.87	14.3
Approach		435	0.7	0.700	31.1	LOS C	11.5	80.8	0.84	0.82	16.6
All Vehicles		3501	1.7	0.703	10.8	LOS A	15.3	109.0	0.44	0.39	37.2

I-11 Intersection of Therry Road, Central Road and Woodhouse Drive

MOVEMENT SUMMARY

Site: I-11 2021 DN AM

Mount Gilead TIA
I-11 Therry Road / Central Road / Woodhouse Drive
Future Year 2021 AM Peak Do-nothing scenario
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Woodhouse Drive (S)											
1	L	312	2.4	0.365	8.2	LOS A	1.8	13.1	0.61	0.71	40.1
2	T	326	0.0	0.578	7.3	LOS A	4.3	30.0	0.69	0.71	39.4
3	R	314	1.0	0.578	14.2	LOS A	4.3	30.0	0.69	0.93	37.0
Approach		952	1.1	0.578	9.8	LOS A	4.3	30.0	0.66	0.78	38.7
East: Therry Road (E)											
4	L	214	0.5	0.311	7.0	LOS A	1.9	13.3	0.54	0.62	46.1
5	T	271	0.4	0.311	5.9	LOS A	1.9	13.3	0.54	0.54	46.1
6	R	207	0.0	0.311	12.9	LOS A	1.8	12.8	0.54	0.78	42.5
Approach		692	0.3	0.311	8.3	LOS A	1.9	13.3	0.54	0.64	44.9
North: Central Road (N)											
7	L	88	8.3	0.099	8.2	LOS A	0.5	3.8	0.63	0.70	34.4
8	T	11	20.0	0.117	7.9	LOS A	0.6	4.3	0.64	0.66	33.6
9	R	74	10.0	0.117	14.5	LOS B	0.6	4.3	0.64	0.83	31.4
Approach		173	9.8	0.117	10.9	LOS A	0.6	4.3	0.63	0.75	32.9
West: Therry Road (W)											
10	L	185	4.0	0.476	11.7	LOS A	3.9	28.2	0.89	0.94	46.0
11	T	225	0.9	0.476	10.6	LOS A	3.9	28.2	0.89	0.93	45.8
12	R	272	1.2	0.476	18.5	LOS B	3.7	25.9	0.87	1.01	41.1
Approach		682	1.9	0.476	14.0	LOS A	3.9	28.2	0.88	0.96	43.8
All Vehicles		2498	1.7	0.578	10.6	LOS A	4.3	30.0	0.69	0.79	42.1

MOVEMENT SUMMARY

Site: I-11 2021 DN PM

Mount Gilead TIA
I-11 Therry Road / Central Road / Woodhouse Drive
Future Year 2021 PM Peak Do-nothing scenario
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Woodhouse Drive (S)											
1	L	223	3.3	0.257	8.3	LOS A	1.3	9.6	0.62	0.72	40.0
2	T	94	0.0	0.275	6.5	LOS A	1.5	10.8	0.62	0.60	39.8
3	R	189	1.7	0.275	13.4	LOS A	1.5	10.8	0.62	0.83	37.3
Approach		506	2.1	0.275	9.9	LOS A	1.5	10.8	0.62	0.74	38.8
East: Therry Road (E)											
4	L	296	0.7	0.419	9.7	LOS A	2.9	20.7	0.79	0.83	44.3
5	T	312	1.0	0.419	9.1	LOS A	2.9	20.7	0.78	0.83	44.2
6	R	91	2.3	0.419	16.3	LOS B	2.8	19.9	0.78	0.96	40.6
Approach		698	1.1	0.419	10.3	LOS A	2.9	20.7	0.78	0.84	43.7
North: Central Road (N)											
7	L	252	0.0	0.340	9.0	LOS A	1.7	11.6	0.69	0.80	33.9
8	T	174	0.0	0.429	7.4	LOS A	2.5	17.7	0.71	0.70	33.5
9	R	234	3.6	0.429	14.4	LOS A	2.5	17.7	0.71	0.97	32.0
Approach		659	1.3	0.429	10.5	LOS A	2.5	17.7	0.70	0.83	33.0
West: Therry Road (W)											
10	L	64	11.5	0.355	7.5	LOS A	2.1	15.3	0.54	0.64	49.0
11	T	389	0.5	0.355	6.0	LOS A	2.1	15.3	0.54	0.54	49.1
12	R	338	3.7	0.355	13.1	LOS A	2.1	15.0	0.55	0.76	44.7
Approach		792	2.8	0.355	9.2	LOS A	2.1	15.3	0.55	0.64	47.0
All Vehicles		2655	1.8	0.429	9.9	LOS A	2.9	20.7	0.66	0.76	42.4

I-12 Intersection of Therry Road and Gilchrist Drive

MOVEMENT SUMMARY

Site: I-12 2021 DN AM

Mount Gilead TIA
I-12 Therry Road / Gilchrist Drive / Shopping Centre Access
Future Year 2021 AM Peak Do-nothing scenario
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South East: Therry Road (SE)											
4	L	73	1.4	0.267	7.6	LOS A	1.3	8.9	0.50	0.67	49.0
5	T	180	0.0	0.267	6.3	LOS A	1.3	8.9	0.50	0.57	49.3
6	R	480	3.3	0.406	12.8	LOS A	2.3	16.3	0.54	0.76	44.4
Approach		733	2.3	0.406	10.7	LOS A	2.3	16.3	0.52	0.70	45.9
North East: Gilchrist Drive (NE)											
7	L	404	4.2	0.224	5.5	X	X	X	X	0.47	47.3
8	T	255	2.9	0.243	5.5	LOS A	1.3	9.3	0.39	0.48	44.0
9	R	133	0.0	0.243	12.0	LOS A	1.3	9.3	0.39	0.77	39.4
Approach		792	3.1	0.243	6.6	LOS A	1.3	9.3	0.19	0.52	44.6
North West: Shopping Centre Access (NW)											
10	L	74	2.9	0.106	10.1	LOS A	0.6	4.2	0.76	0.80	32.8
11	T	39	0.0	0.106	9.7	LOS A	0.6	4.2	0.75	0.80	32.8
12	R	22	0.0	0.106	16.4	LOS B	0.5	3.7	0.75	0.93	29.5
Approach		135	1.6	0.106	11.0	LOS A	0.6	4.2	0.76	0.82	32.1
South West: Gilchrist Drive (SW)											
1	L	229	0.0	0.547	9.8	LOS A	4.0	28.2	0.76	0.92	47.5
2	T	582	2.5	0.547	9.1	LOS A	4.0	28.2	0.76	0.87	47.1
3	R	159	0.7	0.547	16.2	LOS B	3.8	26.8	0.76	1.03	43.3
Approach		971	1.6	0.547	10.5	LOS A	4.0	28.2	0.76	0.91	46.5
All Vehicles		2629	2.2	0.547	9.4	LOS A	4.0	28.2	0.52	0.73	45.5

MOVEMENT SUMMARY

Site: I-12 2021 DN PM

Mount Gilead TIA
I-12 Therry Road / Gilchrist Drive / Shopping Centre Access
Future Year 2021 PM Peak Do-nothing scenario
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South East: Therry Road (SE)											
4	L	88	0.0	0.392	10.5	LOS A	2.2	15.7	0.75	0.91	47.2
5	T	177	0.0	0.392	9.3	LOS A	2.2	15.7	0.75	0.86	47.4
6	R	477	4.0	0.546	16.4	LOS B	4.2	30.5	0.82	1.01	42.4
Approach		742	2.6	0.546	14.0	LOS A	4.2	30.5	0.80	0.96	43.9
North East: Gilchrist Drive (NE)											
7	L	498	3.6	0.275	5.4	X	X	X	X	0.47	47.3
8	T	625	2.7	0.533	6.7	LOS A	3.6	26.0	0.62	0.61	41.8
9	R	116	0.0	0.533	13.2	LOS A	3.6	26.0	0.64	0.90	39.3
Approach		1239	2.8	0.533	6.8	LOS A	3.6	26.0	0.37	0.58	43.5
North West: Shopping Centre Access (NW)											
10	L	140	0.8	0.329	8.9	LOS A	1.9	13.6	0.72	0.78	33.8
11	T	245	0.4	0.329	7.9	LOS A	1.9	13.6	0.72	0.71	33.6
12	R	154	0.0	0.329	14.9	LOS B	1.8	12.6	0.72	0.93	30.5
Approach		539	0.4	0.329	10.2	LOS A	1.9	13.6	0.72	0.79	32.6
South West: Gilchrist Drive (SW)											
1	L	51	0.0	0.243	8.0	LOS A	1.3	9.4	0.66	0.71	48.2
2	T	321	1.6	0.243	7.1	LOS A	1.3	9.4	0.67	0.64	48.0
3	R	43	0.0	0.243	14.0	LOS A	1.2	8.8	0.67	0.93	45.2
Approach		415	1.3	0.243	8.0	LOS A	1.3	9.4	0.67	0.68	47.7
All Vehicles		2935	2.1	0.546	9.4	LOS A	4.2	30.5	0.59	0.73	43.1

I-13 Intersection of Gilchrist Drive and Kellicar Road

MOVEMENT SUMMARY

Site: I-13 2021 DN AM

Mount Gilead TIA
I-13 Narellan Road / Gilchrist Drive / Blaxland Road
Future Year 2021 AM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 100 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Gilchrist Drive (S)											
1	L	119	7.1	0.816	45.7	LOS D	22.7	163.1	0.93	0.98	17.1
2	T	897	1.5	0.816	36.7	LOS C	23.1	164.0	0.94	0.90	17.7
3	R	137	3.1	0.520	50.2	LOS D	6.0	43.2	0.92	0.79	15.3
Approach		1153	2.3	0.816	39.2	LOS C	23.1	164.0	0.93	0.90	17.3
East: Kellicar Road (E)											
4	L	109	7.7	0.261	24.1	LOS B	3.9	28.9	0.77	0.78	29.5
5	T	124	1.7	0.261	32.5	LOS C	3.9	28.9	0.87	0.68	22.9
6	R	25	8.3	0.126	38.0	LOS C	0.9	6.9	0.92	0.71	22.4
Approach		259	4.9	0.261	29.5	LOS C	3.9	28.9	0.83	0.73	25.2
North: Gilchrist Drive (N)											
7	L	215	5.4	0.715	35.8	LOS C	18.3	131.6	0.92	0.92	31.2
8	T	700	1.8	0.715	30.9	LOS C	19.2	136.5	0.94	0.84	30.7
9	R	462	4.6	0.803	57.2	LOS E	12.0	87.2	1.00	0.92	23.5
Approach		1377	3.3	0.803	40.5	LOS C	19.2	136.5	0.96	0.88	27.9
West: Kellicar Road (W)											
10	L	358	5.9	0.687	29.2	LOS C	10.8	79.7	0.66	0.80	18.7
11	T	81	2.6	0.117	37.4	LOS C	1.6	11.2	0.81	0.61	14.9
12	R	68	6.2	0.215	37.7	LOS C	2.4	17.8	0.81	0.73	15.8
Approach		507	5.4	0.687	31.6	LOS C	10.8	79.7	0.71	0.76	17.6
All Vehicles		3296	3.4	0.816	37.8	LOS C	23.1	164.0	0.90	0.85	23.2

MOVEMENT SUMMARY

Site: I-13 2021 DN PM

Mount Gilead TIA
I-13 Narellan Road / Gilchrist Drive / Blaxland Road
Future Year 2021 PM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 95 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Gilchrist Drive (S)											
1	L	123	6.8	0.709	39.5	LOS C	16.1	116.0	0.86	0.93	19.0
2	T	747	2.5	0.709	30.9	LOS C	16.7	119.3	0.87	0.79	19.8
3	R	185	3.4	0.809	56.6	LOS E	9.1	65.5	1.00	0.91	14.0
Approach		1056	3.2	0.809	36.4	LOS C	16.7	119.3	0.89	0.83	18.3
East: Kellicar Road (E)											
4	L	219	5.3	0.496	27.9	LOS B	8.1	58.5	0.82	0.86	27.2
5	T	258	0.0	0.496	32.8	LOS C	8.1	58.5	0.91	0.76	22.7
6	R	119	1.8	0.930	79.0	LOS F	7.6	54.0	1.00	1.12	13.3
Approach		596	2.3	0.930	40.2	LOS C	8.1	58.5	0.90	0.87	21.0
North: Gilchrist Drive (N)											
7	L	195	3.2	0.891	52.4	LOS D	28.3	203.1	1.00	1.08	25.4
8	T	893	2.6	0.891	45.0	LOS D	28.7	205.4	1.00	1.07	25.5
9	R	421	3.8	0.921	68.7	LOS E	12.0	86.7	1.00	1.08	20.9
Approach		1508	3.0	0.921	52.5	LOS D	28.7	205.4	1.00	1.08	24.0
West: Kellicar Road (W)											
10	L	624	4.0	0.897	32.1	LOS C	18.0	130.6	0.85	0.90	17.5
11	T	283	0.0	0.216	23.1	LOS B	4.0	28.0	0.64	0.52	20.6
12	R	144	5.8	0.513	36.4	LOS C	5.1	37.3	0.90	0.78	16.3
Approach		1052	3.2	0.897	30.2	LOS C	18.0	130.6	0.80	0.78	18.1
All Vehicles		4212	3.0	0.930	41.2	LOS C	28.7	205.4	0.91	0.91	21.4

Year 2021 – Future conditions with development (850 dwellings)

I-01 Intersection of Appin Road and Church Street

MOVEMENT SUMMARY

Site: I-01 2021 850D AM

Mount Gilead TIA
I-01 Appin Road / Church Street
Interim year 2021 with 850 dwellings development AM
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	86	3.7	0.117	12.7	LOS A	0.4	3.2	0.55	0.96	39.2
3	R	34	6.3	0.047	12.8	LOS A	0.2	1.3	0.54	0.92	39.1
Approach		120	4.4	0.117	12.7	LOS A	0.4	3.2	0.55	0.95	39.2
East: Church Street (E)											
4	L	57	1.9	0.350	6.5	LOS A	0.0	0.0	0.00	0.62	43.3
6	R	566	6.3	0.350	6.5	LOS A	0.0	0.0	0.00	0.60	43.4
Approach		623	5.9	0.350	6.5	NA	0.0	0.0	0.00	0.60	43.4
North: Appin Road (N)											
7	L	329	8.6	0.188	5.8	X	X	X	X	0.53	44.1
8	T	58	3.6	0.085	13.1	LOS A	0.3	2.2	0.56	0.97	38.9
Approach		387	7.9	0.188	6.9	LOS A	0.3	2.2	0.08	0.59	43.3
All Vehicles		1131	6.4	0.350	7.3	NA	0.4	3.2	0.09	0.64	42.9

MOVEMENT SUMMARY

Site: I-01 2021 850D PM

Mount Gilead TIA
I-01 Appin Road / Church Street
Interim year 2021 with 850 dwellings development PM
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	103	2.0	0.114	11.4	LOS A	0.4	3.2	0.48	0.92	40.0
3	R	57	5.6	0.068	12.0	LOS A	0.3	1.9	0.50	0.91	39.7
Approach		160	3.3	0.114	11.6	LOS A	0.4	3.2	0.49	0.91	39.9
East: Church Street (E)											
4	L	74	4.3	0.279	6.5	LOS A	0.0	0.0	0.00	0.62	43.3
6	R	424	6.2	0.279	6.5	LOS A	0.0	0.0	0.00	0.60	43.4
Approach		498	5.9	0.279	6.5	NA	0.0	0.0	0.00	0.60	43.4
North: Appin Road (N)											
7	L	674	2.0	0.368	5.7	X	X	X	X	0.53	44.1
8	T	89	1.2	0.109	11.9	LOS A	0.4	2.9	0.51	0.94	39.7
Approach		763	1.9	0.368	6.4	LOS A	0.4	2.9	0.06	0.58	43.5
All Vehicles		1421	3.5	0.368	7.0	NA	0.4	3.2	0.09	0.62	43.0

I-02 Intersection of Appin Road, Kellerman Drive and Copperfield Drive

MOVEMENT SUMMARY

Site: I-02 2021 850D AM

Mount Gilead TIA
I-02 Appin Road / Kellerman Drive / Copperfield Drive
Interim year 2021 with 850 dwellings development AM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	80	0.0	1.203	199.8	LOS F	172.5	1245.8	1.00	4.15	9.4
2	T	1281	3.9	1.203	199.8	LOS F	172.5	1245.8	1.00	4.15	9.9
3	R	3	0.0	1.203	204.4	LOS F	172.5	1245.8	1.00	4.15	9.7
Approach		1364	3.7	1.203	199.8	LOS F	172.5	1245.8	1.00	4.15	9.9
East: Kellerman Drive (E)											
4	L	14	0.0	0.333	12.1	LOS A	2.1	15.9	0.76	0.83	48.2
5	T	155	9.5	0.333	10.1	LOS A	2.1	15.9	0.76	0.80	46.7
6	R	81	2.6	0.333	16.7	LOS B	2.1	15.9	0.76	0.89	44.1
Approach		249	6.8	0.333	12.4	LOS A	2.1	15.9	0.76	0.83	45.8
North: Appin Road (N)											
7	L	49	2.1	0.461	9.7	LOS A	3.9	29.3	0.51	0.62	55.9
8	T	467	9.7	0.461	10.5	LOS A	3.9	29.3	0.51	0.60	57.4
9	R	35	9.1	0.461	14.4	LOS A	3.9	29.3	0.51	0.77	52.8
Approach		552	9.0	0.461	10.7	LOS A	3.9	29.3	0.51	0.61	57.0
West: Copperfield Drive (W)											
10	L	127	3.3	0.866	64.8	LOS E	12.9	92.7	1.00	1.46	22.5
11	T	25	8.3	0.866	63.2	LOS E	12.9	92.7	1.00	1.46	21.7
12	R	116	1.8	0.866	70.3	LOS E	12.9	92.7	1.00	1.46	23.2
Approach		268	3.1	0.866	67.0	LOS E	12.9	92.7	1.00	1.46	22.7
All Vehicles		2434	5.1	1.203	123.1	LOS F	172.5	1245.8	0.86	2.71	14.9

MOVEMENT SUMMARY

Site: I-02 2021 850D PM

Mount Gilead TIA
I-02 Appin Road / Kellerman Drive / Copperfield Drive
Interim year 2021 with 850 dwellings development PM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	34	3.1	0.575	9.5	LOS A	5.1	37.3	0.69	0.70	51.5
2	T	579	5.5	0.575	9.4	LOS A	5.1	37.3	0.69	0.68	52.0
3	R	20	0.0	0.575	14.0	LOS A	5.1	37.3	0.69	0.80	49.3
Approach		633	5.2	0.575	9.6	LOS A	5.1	37.3	0.69	0.68	51.9
East: Kellerman Drive (E)											
4	L	18	0.0	0.924	105.0	LOS F	15.6	115.6	1.00	1.64	17.0
5	T	138	6.1	0.924	102.9	LOS F	15.6	115.6	1.00	1.64	15.6
6	R	73	8.7	0.924	109.7	LOS F	15.6	115.6	1.00	1.63	16.4
Approach		228	6.5	0.924	105.2	LOS F	15.6	115.6	1.00	1.63	16.0
North: Appin Road (N)											
7	L	80	1.3	1.331	313.5	LOS F	276.0	1960.6	1.00	4.96	6.4
8	T	1452	1.6	1.331	313.9	LOS F	276.0	1960.6	1.00	4.96	7.1
9	R	49	6.4	1.331	318.1	LOS F	276.0	1960.6	1.00	4.94	6.6
Approach		1581	1.7	1.331	314.0	LOS F	276.0	1960.6	1.00	4.96	7.1
West: Copperfield Drive (W)											
10	L	48	0.0	0.375	11.9	LOS A	2.6	18.8	0.82	0.86	46.5
11	T	75	5.6	0.375	10.3	LOS A	2.6	18.8	0.82	0.83	45.8
12	R	145	2.2	0.375	17.5	LOS B	2.6	18.8	0.82	0.90	44.8
Approach		268	2.7	0.375	14.5	LOS A	2.6	18.8	0.82	0.87	45.4
All Vehicles		2711	3.0	1.331	195.7	LOS F	276.0	1960.6	0.91	3.28	10.4

I-03 Intersection of Appin Road, Kellerman Drive and Fitzgibbon Lane

MOVEMENT SUMMARY

Site: I-03 2021 850D AM

Mount Gilead TIA
I-03 Appin Road / Kellerman Drive / Fitzgibbon Lane
Interim year 2021 with 850 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	59	0.0	1.000 [3]	49.2	LOS D	21.7	155.6	1.00	0.87	30.8
2	T	1483	3.5	1.302	263.0	LOS F	195.3	1408.6	1.00	1.89	8.3
3	R	3	0.0	0.034	80.3	LOS F	0.2	1.5	0.97	0.63	20.1
Approach		1545	3.4	1.302	254.5	LOS F	195.3	1408.6	1.00	1.85	8.6
East: Kellerman Drive (E)											
4	L	6	0.0	0.525	53.3	LOS D	3.6	24.9	0.82	0.80	20.8
5	T	128	0.0	1.338	228.5	LOS F	40.9	287.7	0.92	1.26	5.7
6	R	155	0.7	1.338	401.3	LOS F	40.9	287.7	1.00	1.82	4.0
Approach		289	0.4	1.338	317.1	LOS F	40.9	287.7	0.96	1.55	4.7
North: Appin Road (N)											
7	L	78	1.4	0.276	25.7	LOS B	9.9	73.4	0.55	0.95	39.5
8	T	609	9.7	0.387	17.5	LOS B	15.0	111.4	0.58	0.51	43.1
9	R	264	0.3	1.175	221.1	LOS F	30.2	212.2	1.00	1.30	8.6
Approach		952	5.4	1.175	74.7	LOS F	30.2	212.2	0.70	0.77	20.8
West: Fitzgibbon Lane (W)											
10	L	526	1.4	0.626	39.9	LOS C	27.0	191.1	0.82	0.86	25.9
11	T	120	2.6	0.660	50.9	LOS D	8.7	62.5	0.90	0.75	18.5
12	R	27	3.8	0.660	59.8	LOS E	8.7	62.5	0.90	0.84	19.2
Approach		674	1.7	0.660	42.7	LOS D	27.0	191.1	0.84	0.84	24.0
All Vehicles		3460	3.4	1.338	169.0	LOS F	195.3	1408.6	0.88	1.33	10.9

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-03 2021 850D PM

Mount Gilead TIA
I-03 Appin Road / Kellerman Drive / Fitzgibbon Lane
Interim year 2021 with 850 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	22	0.0	0.756	60.0	LOS E	15.9	115.7	0.91	0.94	26.6
2	T	617	5.1	0.756	51.2	LOS D	24.0	175.5	0.95	0.84	28.6
3	R	2	0.0	0.026	81.6	LOS F	0.1	1.0	0.98	0.61	19.9
Approach		641	4.9	0.756	51.6	LOS D	24.0	175.5	0.95	0.84	28.5
East: Kellerman Drive (E)											
4	L	7	0.0	0.269	59.5	LOS E	1.8	12.6	0.86	0.75	19.1
5	T	89	0.0	0.687	60.9	LOS E	9.3	65.3	0.96	0.79	16.1
6	R	72	0.0	0.687	73.9	LOS F	9.3	65.3	1.00	0.85	17.4
Approach		168	0.0	0.687	66.3	LOS E	9.3	65.3	0.97	0.81	16.8
North: Appin Road (N)											
7	L	177	1.2	0.573	25.0	LOS B	26.6	188.8	0.63	0.97	40.2
8	T	1480	1.9	0.803	18.9	LOS B	48.7	346.8	0.75	0.70	41.8
9	R	448	0.5	0.794	43.7	LOS D	21.5	151.2	0.91	0.92	28.9
Approach		2105	1.6	0.803	24.7	LOS B	48.7	346.8	0.77	0.77	38.2
West: Fitzgibbon Lane (W)											
10	L	265	1.2	0.227	20.6	LOS B	7.5	53.1	0.46	0.77	36.5
11	T	117	2.7	0.794	64.8	LOS E	11.3	80.6	0.98	0.90	15.6
12	R	47	2.2	0.794	73.6	LOS F	11.3	80.6	0.98	0.92	16.4
Approach		429	1.7	0.794	38.5	LOS C	11.3	80.6	0.66	0.82	25.0
All Vehicles		3344	2.1	0.803	33.7	LOS C	48.7	346.8	0.80	0.79	32.7

I-04 Intersection of Appin Road and Woodland Road

MOVEMENT SUMMARY

Site: I-04 2021 850D AM

Mount Gilead TIA
I-04 Appin Road / Woodland Road
Interim year 2021 with 850 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	2035	3.2	0.785	5.6	LOS A	22.4	160.9	0.36	0.34	64.9
3	R	108	1.9	0.300	46.5	LOS D	5.3	37.5	0.76	0.78	29.3
Approach		2143	3.1	0.785	7.6	LOS A	22.4	160.9	0.38	0.36	61.5
East: Woodland Road (E)											
4	L	108	1.0	0.769	59.2	LOS E	8.6	60.7	0.84	0.86	15.5
6	R	355	3.3	0.769	65.4	LOS E	21.1	151.9	0.98	0.88	15.8
Approach		463	2.7	0.769	64.0	LOS E	21.1	151.9	0.95	0.87	15.8
North: Appin Road (N)											
7	L	141	4.5	0.216	23.9	LOS B	4.4	31.7	0.49	0.76	39.2
8	T	853	5.2	0.753	47.2	LOS D	25.1	183.2	0.92	0.81	27.6
Approach		994	5.1	0.753	43.9	LOS D	25.1	183.2	0.86	0.80	28.8
All Vehicles		3600	3.6	0.785	24.9	LOS B	25.1	183.2	0.58	0.55	40.1

MOVEMENT SUMMARY

Site: I-04 2021 850D PM

Mount Gilead TIA
I-04 Appin Road / Woodland Road
Interim year 2021 with 850 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	888	4.4	0.301	1.2	LOS A	2.1	15.0	0.08	0.07	76.2
3	R	103	0.0	0.778	85.1	LOS F	7.5	52.5	1.00	0.85	19.3
Approach		992	3.9	0.778	9.9	LOS A	7.5	52.5	0.17	0.15	59.8
East: Woodland Road (E)											
4	L	122	0.0	0.787	67.5	LOS E	8.8	61.7	0.90	0.88	14.0
6	R	197	4.3	0.787	77.4	LOS F	12.9	93.7	0.99	0.88	13.9
Approach		319	2.6	0.787	73.6	LOS F	12.9	93.7	0.96	0.88	13.9
North: Appin Road (N)											
7	L	368	2.0	0.348	12.1	LOS A	5.5	38.9	0.24	0.74	49.7
8	T	1999	1.5	0.796	8.2	LOS A	28.8	203.9	0.47	0.44	53.6
Approach		2367	1.6	0.796	8.8	LOS A	28.8	203.9	0.43	0.49	53.0
All Vehicles		3678	2.3	0.796	14.7	LOS B	28.8	203.9	0.41	0.43	47.9

I-05 Intersection of Appin Road and St Johns Road

MOVEMENT SUMMARY

Site: I-05 2021 850D AM

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Interim year 2021 with 850 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	2062	3.2	0.830	8.6	LOS A	32.8	236.0	0.52	0.49	59.0
3	R	357	2.1	0.841	57.9	LOS E	22.0	156.8	0.85	0.89	25.5
Approach		2419	3.0	0.841	15.9	LOS B	32.8	236.0	0.57	0.55	50.3
East: St Johns Road (E)											
4	L	232	1.8	0.855	45.2	LOS D	9.0	64.2	0.32	0.82	25.4
6	R	393	1.1	0.828	67.2	LOS E	27.0	191.0	1.00	0.92	19.7
Approach		624	1.3	0.855	59.0	LOS E	27.0	191.0	0.75	0.88	21.5
North: Appin Road (N)											
7	L	225	3.3	0.124	11.2	X	X	X	X	0.69	58.9
8	T	751	6.7	0.827	58.0	LOS E	24.9	184.7	0.99	0.90	26.6
Approach		976	5.9	0.827	47.2	LOS D	24.9	184.7	0.76	0.85	30.4
All Vehicles		4019	3.5	0.855	30.2	LOS C	32.8	236.0	0.64	0.67	37.7

MOVEMENT SUMMARY

Site: I-05 2021 850D PM

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Interim year 2021 with 850 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	937	3.3	0.324	1.4	LOS A	2.2	16.2	0.08	0.07	75.8
3	R	160	2.6	0.878	88.5	LOS F	12.2	87.1	1.00	0.93	18.8
Approach		1097	3.2	0.878	14.1	LOS A	12.2	87.1	0.21	0.20	54.3
East: St Johns Road (E)											
4	L	225	0.5	0.908	38.5	LOS C	10.4	73.4	0.69	0.83	27.9
6	R	252	0.4	0.906	87.3	LOS F	19.6	137.9	1.00	0.99	16.3
Approach		477	0.4	0.908	64.3	LOS E	19.6	137.9	0.85	0.92	20.3
North: Appin Road (N)											
7	L	353	1.8	0.192	11.2	X	X	X	X	0.69	58.8
8	T	2156	1.8	0.921	23.2	LOS B	61.7	438.7	0.82	0.82	42.8
Approach		2508	1.8	0.921	21.5	LOS B	61.7	438.7	0.70	0.80	44.5
All Vehicles		4082	2.0	0.921	24.5	LOS B	61.7	438.7	0.59	0.65	42.0

I-06 Intersection of Appin Road and Therry Road

MOVEMENT SUMMARY

Site: I-06 2021 850D AM

Mount Gilead TIA
I-06 Appin Road / Therry Road
Interim year 2021 with 850 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	646	0.7	0.350	11.1	X	X	X	X	0.69	58.8
2	T	1833	3.5	0.922	35.1	LOS C	60.3	435.0	0.92	0.93	35.3
Approach		2479	2.8	0.922	28.9	LOS C	60.3	435.0	0.68	0.87	39.4
North: Appin Road (N)											
8	T	697	6.9	0.249	1.3	LOS A	1.5	11.2	0.07	0.06	76.0
9	R	298	1.1	0.905	85.6	LOS F	23.2	163.8	1.00	0.97	19.3
Approach		995	5.2	0.905	26.6	LOS B	23.2	163.8	0.35	0.33	42.1
West: Therry Road (W)											
10	L	447	1.9	0.244	7.6	X	X	X	X	0.60	47.4
12	R	287	2.2	0.500	68.1	LOS E	9.1	65.0	0.96	0.81	19.8
Approach		735	2.0	0.500	31.3	LOS C	9.1	65.0	0.38	0.68	29.8
All Vehicles		4208	3.2	0.922	28.7	LOS C	60.3	435.0	0.55	0.71	38.3

MOVEMENT SUMMARY

Site: I-06 2021 850D PM

Mount Gilead TIA
I-06 Appin Road / Therry Road
Interim year 2021 with 850 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	349	1.5	0.190	11.1	X	X	X	X	0.69	58.8
2	T	869	4.1	0.822	53.9	LOS D	28.0	202.9	0.97	0.89	27.8
Approach		1219	3.4	0.822	41.6	LOS C	28.0	202.9	0.69	0.83	32.7
North: Appin Road (N)											
8	T	1908	2.2	0.702	2.8	LOS A	10.8	77.0	0.18	0.17	71.5
9	R	408	1.0	0.816	52.3	LOS D	24.0	169.2	0.86	0.88	27.3
Approach		2317	2.0	0.816	11.5	LOS A	24.0	169.2	0.30	0.30	56.8
West: Therry Road (W)											
10	L	385	1.1	0.209	7.6	X	X	X	X	0.60	47.4
12	R	587	0.5	0.794	70.4	LOS E	20.1	141.4	1.00	0.90	19.4
Approach		973	0.8	0.794	45.5	LOS D	20.1	141.4	0.60	0.78	24.7
All Vehicles		4508	2.1	0.822	27.0	LOS B	28.0	202.9	0.47	0.54	39.6

I-07 Intersection of Appin Road, Narellan Road, Oxley Street and The Parkway

MOVEMENT SUMMARY

Site: I-07 2021 850D AM

Mount Gilead TIA
I-07 Appin Road / Oxley Street / Narellan Road / The Parkway
Interim year 2021 with 850 dwellings development AM
Signals - Fixed Time Cycle Time = 135 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	626	7.2	0.355	7.8	X	X	X	X	0.60	49.7
2	T	1626	2.1	1.037	105.3	LOS F	81.8	582.5	1.00	1.33	15.0
3	R	34	0.0	0.085	23.0	LOS B	0.9	6.6	0.62	0.71	36.8
Approach		2286	3.5	1.037	77.4	LOS F	81.8	582.5	0.72	1.12	18.8
East: The Parkway (E)											
4	L	24	4.3	0.013	7.7	X	X	X	X	0.60	37.8
5	T	273	1.2	1.061	147.7	LOS F	29.1	205.9	1.00	1.36	4.5
6	R	221	2.8	1.000 [3]	71.9	LOS F	14.8	106.1	1.00	0.83	8.9
Approach		519	2.0	1.061	108.8	LOS F	29.1	205.9	0.95	1.10	6.1
North: Oxley Street (N)											
7	L	128	4.9	0.072	7.7	X	X	X	X	0.60	46.7
8	T	687	2.8	0.440	30.7	LOS C	16.1	115.5	0.77	0.67	28.9
9	R	259	2.0	1.059	155.1	LOS F	27.5	195.8	1.00	1.22	8.7
Approach		1074	2.8	1.059	57.9	LOS E	27.5	195.8	0.73	0.79	19.9
West: Narellan Road (W)											
10	L	296	1.8	0.539	30.7	LOS C	10.4	74.1	0.62	0.75	28.9
11	T	246	0.4	1.012	108.6	LOS F	26.1	185.5	1.00	1.21	11.9
12	R	300	10.2	1.012	119.4	LOS F	26.1	185.5	1.00	1.13	13.0
Approach		842	4.4	1.012	85.1	LOS F	26.1	185.5	0.86	1.02	15.5
All Vehicles		4721	3.3	1.061	77.8	LOS F	81.8	582.5	0.78	1.03	16.8

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-07 2021 850D PM

Mount Gilead TIA
I-07 Appin Road / Oxley Street / Narellan Road / The Parkway
Interim year 2021 with 850 dwellings development PM
Signals - Fixed Time Cycle Time = 130 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	358	5.9	0.201	7.8	X	X	X	X	0.60	49.8
2	T	848	2.2	0.820	51.2	LOS D	25.6	183.0	0.97	0.90	24.0
3	R	72	0.0	0.988	124.3	LOS F	6.7	47.0	1.00	1.12	13.6
Approach		1278	3.1	0.988	43.1	LOS D	25.6	183.0	0.70	0.83	26.8
East: The Parkway (E)											
4	L	27	3.8	0.015	7.7	X	X	X	X	0.60	37.8
5	T	195	2.7	0.944	83.8	LOS F	15.0	107.6	1.00	1.09	7.5
6	R	169	2.5	0.862	79.3	LOS F	11.9	84.9	1.00	0.95	8.2
Approach		392	2.7	0.944	76.5	LOS F	15.0	107.6	0.93	1.00	8.3
North: Oxley Street (N)											
7	L	385	2.2	0.211	7.6	X	X	X	X	0.60	46.7
8	T	1631	1.7	0.872	37.7	LOS C	49.7	353.1	0.97	0.94	25.6
9	R	299	0.7	0.956	93.2	LOS F	24.0	169.1	1.00	1.05	13.2
Approach		2315	1.6	0.956	39.9	LOS C	49.7	353.1	0.81	0.90	24.6
West: Narellan Road (W)											
10	L	200	1.6	0.222	12.2	LOS A	2.2	15.8	0.21	0.65	42.0
11	T	351	0.3	0.997	91.5	LOS F	44.3	312.5	1.00	1.19	13.5
12	R	652	2.3	0.997	101.4	LOS F	44.3	312.5	1.00	1.12	14.8
Approach		1202	1.6	0.997	83.7	LOS F	44.3	312.5	0.87	1.06	16.0
All Vehicles		5186	2.1	0.997	53.6	LOS D	49.7	353.1	0.81	0.93	21.2

I-08 Intersection of Narellan Road and Hurley Street

MOVEMENT SUMMARY

Site: I-08 2021 850D AM

Mount Gilead TIA
I-08 Narellan Road / Kellicar Road
Interim year 2021 with 850 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	155	4.8	0.839	54.1	LOS D	34.1	248.2	0.94	0.93	21.2
2	T	935	4.6	0.839	46.2	LOS D	34.2	248.8	0.95	0.88	21.5
3	R	133	2.4	0.424	64.4	LOS E	7.8	55.9	0.90	0.79	18.3
Approach		1222	4.4	0.839	49.2	LOS D	34.2	248.8	0.94	0.88	21.0
East: Kellicar Road (E)											
4	L	25	0.0	0.722	67.4	LOS E	15.6	114.5	0.97	0.86	10.7
5	T	460	6.2	0.722	59.6	LOS E	15.6	114.6	0.97	0.84	10.8
6	R	384	6.0	0.889	83.7	LOS F	14.4	105.7	1.00	0.94	8.6
Approach		869	5.9	0.889	70.5	LOS E	15.6	114.6	0.99	0.88	9.7
North: Narellan Road (N)											
7	L	1027	2.4	0.956	27.1	LOS B	29.7	212.2	0.49	0.92	34.6
8	T	712	4.3	0.547	37.7	LOS C	17.4	126.6	0.77	0.67	28.4
9	R	295	2.5	0.942	78.9	LOS F	21.7	155.0	1.00	0.92	19.0
Approach		2034	3.1	0.956	38.3	LOS C	29.7	212.2	0.66	0.83	29.0
West: Kellicar Road (W)											
10	L	121	6.1	0.257	34.9	LOS C	4.3	31.4	0.55	0.75	20.3
11	T	623	4.7	0.922	75.4	LOS F	24.0	174.6	1.00	1.03	11.0
12	R	139	3.0	0.629	72.9	LOS F	9.1	65.4	0.98	0.81	11.8
Approach		883	4.6	0.922	69.4	LOS E	24.0	174.6	0.94	0.96	11.9
All Vehicles		5008	4.2	0.956	52.0	LOS D	34.2	248.8	0.83	0.87	20.2

MOVEMENT SUMMARY

Site: I-08 2021 850D PM

Mount Gilead TIA
I-08 Narellan Road / Kellicar Road
Interim year 2021 with 850 dwellings development PM
Signals - Fixed Time Cycle Time = 130 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	181	0.0	1.032	122.2	LOS F	47.5	338.7	1.00	1.28	11.3
2	T	799	3.6	1.032	114.1	LOS F	47.5	338.7	1.00	1.31	11.5
3	R	152	0.0	0.624	67.0	LOS E	9.2	64.1	0.98	0.81	17.7
Approach		1132	2.5	1.032	109.1	LOS F	47.5	338.7	1.00	1.24	12.0
East: Kellicar Road (E)											
4	L	39	0.0	1.027	120.3	LOS F	42.5	307.7	1.00	1.32	6.3
5	T	861	4.5	1.027	112.0	LOS F	42.5	307.7	1.00	1.32	6.4
6	R	726	2.0	1.032	125.0	LOS F	34.3	244.5	1.00	1.16	6.1
Approach		1626	3.3	1.032	118.0	LOS F	42.5	307.7	1.00	1.25	6.3
North: Narellan Road (N)											
7	L	551	2.3	0.495	9.7	LOS A	4.2	29.9	0.15	0.64	47.5
8	T	1008	1.8	1.065	137.8	LOS F	52.6	373.7	1.00	1.45	12.3
9	R	244	1.8	1.017	117.7	LOS F	21.8	154.9	1.00	1.13	14.2
Approach		1802	1.9	1.065	95.9	LOS F	52.6	373.7	0.74	1.16	16.3
West: Kellicar Road (W)											
10	L	263	0.8	0.505	33.3	LOS C	9.3	65.5	0.60	0.78	20.8
11	T	574	5.5	0.660	49.2	LOS D	15.9	116.7	0.92	0.78	15.2
12	R	224	0.5	0.630	60.6	LOS E	12.8	89.8	0.94	0.82	13.6
Approach		1061	3.3	0.660	47.7	LOS D	15.9	116.7	0.85	0.79	15.9
All Vehicles		5621	2.7	1.065	95.9	LOS F	52.6	373.7	0.89	1.13	12.1

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

I-09 Intersection of Narellan Road, Gilchrist Drive and Blaxland Road

MOVEMENT SUMMARY

Site: I-09 2021 850D AM

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Interim year 2021 with 850 dwellings development AM
Signals - Fixed Time Cycle Time = 150 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	14	53.8	0.037	22.1	LOS B	0.4	4.1	0.46	0.65	38.4
2	T	1128	5.7	1.127	196.1	LOS F	74.8	549.0	1.00	1.59	9.2
3	R	317	2.3	1.000 [3]	111.1	LOS F	29.7	212.2	1.00	1.05	14.9
Approach		1459	5.3	1.127	176.0	LOS F	74.8	549.0	0.99	1.46	10.2
East: Blaxland Road (E)											
4	L	416	2.9	1.000 [3]	56.3	LOS D	25.0	179.5	1.00	0.87	23.5
5	T	629	2.2	1.125	201.4	LOS F	41.2	293.6	1.00	1.47	9.0
6	R	582	9.9	1.095	190.3	LOS F	36.4	276.5	1.00	1.28	9.7
Approach		1627	5.2	1.125	160.3	LOS F	41.2	293.6	1.00	1.25	11.0
North: Narellan Road (N)											
7	L	719	7.8	0.944	25.1	LOS B	22.3	166.7	0.71	0.91	35.8
8	T	1441	3.8	1.034	113.0	LOS F	77.2	558.5	1.00	1.29	14.3
9	R	818	4.8	1.116	119.7	LOS F	48.2	350.9	1.00	1.13	14.1
Approach		2978	5.1	1.116	93.6	LOS F	77.2	558.5	0.93	1.15	16.7
West: Gilchrist Drive (W)											
10	L	772	3.5	0.801	37.0	LOS C	16.2	116.5	0.79	0.89	30.0
11	T	448	1.4	0.791	70.9	LOS F	16.7	118.4	1.00	0.90	19.7
12	R	20	0.0	0.143	66.1	LOS E	1.2	8.7	0.89	0.70	21.4
Approach		1240	2.7	0.801	49.7	LOS D	16.7	118.4	0.87	0.89	25.1
All Vehicles		7304	4.7	1.127	117.5	LOS F	77.2	558.5	0.95	1.19	14.1

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-09 2021 850D PM

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Interim year 2021 with 850 dwellings development PM
Signals - Fixed Time Cycle Time = 150 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	5	0.0	0.007	17.8	LOS B	0.1	1.0	0.40	0.63	40.4
2	T	1497	2.8	1.250	298.9	LOS F	124.1	889.5	1.00	1.95	6.4
3	R	279	1.1	1.033	143.3	LOS F	30.0	211.9	1.00	1.18	12.2
Approach		1781	2.4	1.250	273.7	LOS F	124.1	889.5	1.00	1.83	7.0
East: Blaxland Road (E)											
4	L	466	2.7	0.768	47.7	LOS D	26.8	191.9	0.96	0.88	25.9
5	T	891	2.3	1.260	317.1	LOS F	75.1	536.0	1.00	1.83	6.1
6	R	656	2.5	1.191	254.6	LOS F	50.2	359.0	1.00	1.42	7.6
Approach		2014	2.5	1.260	234.3	LOS F	75.1	536.0	0.99	1.48	8.0
North: Narellan Road (N)											
7	L	516	3.1	0.700	21.6	LOS B	17.8	127.7	0.56	0.78	37.9
8	T	1366	3.0	1.155	217.2	LOS F	97.3	699.0	1.00	1.63	8.5
9	R	551	3.4	1.199	192.4	LOS F	48.7	350.9	1.00	1.21	9.6
Approach		2434	3.2	1.199	170.1	LOS F	97.3	699.0	0.91	1.35	10.5
West: Gilchrist Drive (W)											
10	L	744	3.1	1.000 [3]	51.7	LOS D	22.7	163.2	1.00	0.86	25.0
11	T	680	3.1	0.967	97.6	LOS F	31.9	229.6	1.00	1.14	15.7
12	R	73	0.0	0.525	68.4	LOS E	4.7	33.0	0.92	0.76	20.9
Approach		1496	3.0	1.000	73.3	LOS F	31.9	229.6	1.00	0.99	19.6
All Vehicles		7724	2.8	1.260	192.0	LOS F	124.1	889.5	0.97	1.42	9.5

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-09 2021 850D AM RMS Upgrade

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Interim year 2021 with 850 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	14	53.8	0.040	19.0	LOS B	0.3	3.5	0.41	0.64	40.7
2	T	1074	5.7	0.596	40.1	LOS C	19.0	139.4	0.81	0.70	27.5
3	R	372	2.3	0.547	64.0	LOS E	11.6	82.9	0.96	0.82	21.9
Approach		1459	5.3	0.596	46.0	LOS D	19.0	139.4	0.84	0.73	25.9
East: Blaxland Road (E)											
4	L	461	2.9	1.000 [3]	50.3	LOS D	25.0	179.5	1.00	0.88	25.2
5	T	585	2.2	0.891	71.1	LOS F	21.6	154.0	1.00	0.99	19.6
6	R	582	9.9	1.175	252.2	LOS F	41.2	312.9	1.00	1.46	7.6
Approach		1627	5.2	1.175	130.0	LOS F	41.2	312.9	1.00	1.13	13.0
North: Narellan Road (N)											
7	L	719	7.8	0.610	18.1	LOS B	22.5	168.3	0.60	0.82	40.4
8	T	1484	3.8	1.191	241.6	LOS F	108.3	783.3	1.00	1.84	7.7
9	R	775	4.8	1.162	238.6	LOS F	53.8	391.7	1.00	1.48	8.0
Approach		2978	5.1	1.191	186.8	LOS F	108.3	783.3	0.90	1.50	9.8
West: Gilchrist Drive (W)											
10	L	767	3.5	1.000 [3]	49.7	LOS D	22.6	163.2	1.00	0.87	25.6
11	T	453	1.4	0.685	59.6	LOS E	14.8	104.8	0.99	0.84	21.9
12	R	20	0.0	0.137	63.6	LOS E	1.2	8.3	0.90	0.70	22.0
Approach		1240	2.7	1.000	53.5	LOS D	22.6	163.2	1.00	0.85	24.1
All Vehicles		7304	4.7	1.191	123.4	LOS F	108.3	783.3	0.93	1.15	13.6

MOVEMENT SUMMARY

Site: I-09 2021 850D PM RMS Upgrade

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Interim year 2021 with 850 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	5	0.0	0.011	20.8	LOS B	0.2	1.1	0.46	0.63	38.3
2	T	1403	2.8	1.102	142.5	LOS F	57.8	414.1	1.00	1.37	12.0
3	R	373	1.1	0.944	97.3	LOS F	15.4	108.8	1.00	1.05	16.4
Approach		1781	2.4	1.102	132.7	LOS F	57.8	414.1	1.00	1.30	12.7
East: Blaxland Road (E)											
4	L	466	2.7	0.919	49.4	LOS D	25.1	179.5	1.00	0.91	25.4
5	T	710	2.3	1.082	160.1	LOS F	40.3	287.4	1.00	1.41	10.9
6	R	838	2.5	1.085	164.0	LOS F	50.2	359.0	1.00	1.26	11.0
Approach		2014	2.5	1.085	136.1	LOS F	50.2	359.0	1.00	1.23	12.6
North: Narellan Road (N)											
7	L	516	3.1	0.420	16.5	LOS B	14.2	102.0	0.49	0.73	41.4
8	T	1053	3.0	0.941	65.5	LOS E	33.4	239.6	1.00	1.19	20.7
9	R	864	3.4	1.112	196.1	LOS F	54.4	391.7	1.00	1.37	9.5
Approach		2434	3.2	1.112	101.5	LOS F	54.4	391.7	0.89	1.16	15.8
West: Gilchrist Drive (W)											
10	L	801	3.1	1.000 [3]	47.7	LOS D	22.7	163.2	1.00	0.87	26.2
11	T	623	3.1	0.962	91.7	LOS F	27.2	195.4	1.00	1.15	16.5
12	R	73	0.0	0.456	55.8	LOS D	4.0	28.3	0.86	0.74	23.9
Approach		1496	3.0	1.000	66.4	LOS E	27.2	195.4	0.99	0.98	21.0
All Vehicles		7724	2.8	1.112	110.9	LOS F	57.8	414.1	0.96	1.18	14.7

I-10 Intersection of Oxley Street and Camden Road

MOVEMENT SUMMARY

Site: I-10 2021 850D AM

Mount Gilead TIA
I-10 Oxley Street / Camden Road
Interim year 2021 with 850 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Oxley Street (S)											
1	L	247	1.7	0.744	12.2	LOS A	18.4	131.0	0.29	0.90	42.0
2	T	1893	2.2	0.744	3.2	LOS A	18.4	131.0	0.23	0.22	51.8
Approach		2140	2.1	0.744	4.3	LOS A	18.4	131.0	0.24	0.30	50.4
North: Oxley Street (N)											
8	T	1039	2.9	0.297	0.3	LOS A	1.3	9.1	0.07	0.04	57.0
9	R	83	0.0	0.697	82.1	LOS F	6.0	41.7	1.00	0.82	10.5
Approach		1122	2.7	0.697	6.3	LOS A	6.0	41.7	0.14	0.10	43.0
West: Camden Road (W)											
10	L	48	4.3	0.182	9.5	LOS A	0.5	3.9	0.21	0.65	34.1
12	R	74	2.9	0.709	83.8	LOS F	5.3	38.3	1.00	0.83	7.4
Approach		122	3.4	0.709	54.3	LOS D	5.3	38.3	0.69	0.75	10.9
All Vehicles		3384	2.4	0.744	6.7	LOS A	18.4	131.0	0.22	0.25	45.3

MOVEMENT SUMMARY

Site: I-10 2021 850D PM

Mount Gilead TIA
I-10 Oxley Street / Camden Road
Interim year 2021 with 850 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Oxley Street (S)											
1	L	183	0.0	0.616	27.6	LOS B	23.4	165.9	0.63	0.89	30.2
2	T	1035	2.4	0.616	19.3	LOS B	23.4	165.9	0.61	0.55	32.7
Approach		1218	2.1	0.616	20.6	LOS B	23.4	165.9	0.61	0.60	32.3
North: Oxley Street (N)											
8	T	2044	2.0	0.581	0.4	LOS A	3.9	27.5	0.12	0.07	55.3
9	R	73	1.4	0.615	80.9	LOS F	5.1	36.3	1.00	0.79	10.7
Approach		2117	1.9	0.615	3.2	LOS A	5.1	36.3	0.15	0.09	48.4
West: Camden Road (W)											
10	L	105	3.0	0.265	11.9	LOS A	1.8	13.2	0.32	0.67	30.7
12	R	329	0.0	0.606	53.8	LOS D	19.3	135.0	0.92	0.85	10.7
Approach		435	0.7	0.606	43.7	LOS D	19.3	135.0	0.77	0.80	12.8
All Vehicles		3769	1.8	0.616	13.5	LOS A	23.4	165.9	0.37	0.34	34.4

I-11 Intersection of Therry Road, Central Road and Woodhouse Drive

MOVEMENT SUMMARY

Site: I-11 2021 850D AM

Mount Gilead TIA
I-11 Therry Road / Central Road / Woodhouse Drive
Interim year 2021 with 850 dwellings development AM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Woodhouse Drive (S)											
1	L	312	2.4	0.387	8.6	LOS A	2.0	14.2	0.65	0.76	39.8
2	T	326	0.0	0.607	7.9	LOS A	4.7	32.9	0.74	0.78	38.9
3	R	314	1.0	0.607	14.8	LOS B	4.7	32.9	0.74	0.98	36.4
Approach		952	1.1	0.607	10.4	LOS A	4.7	32.9	0.71	0.84	38.2
East: Therry Road (E)											
4	L	214	0.5	0.356	7.1	LOS A	2.3	15.9	0.56	0.63	46.1
5	T	371	0.9	0.356	6.0	LOS A	2.3	15.9	0.56	0.54	46.0
6	R	207	0.0	0.356	12.9	LOS A	2.2	15.2	0.57	0.80	42.7
Approach		792	0.5	0.356	8.1	LOS A	2.3	15.9	0.56	0.63	45.0
North: Central Road (N)											
7	L	88	8.3	0.101	8.3	LOS A	0.5	3.9	0.64	0.71	34.3
8	T	11	20.0	0.120	8.0	LOS A	0.6	4.4	0.65	0.67	33.5
9	R	74	10.0	0.120	14.6	LOS B	0.6	4.4	0.65	0.84	31.3
Approach		173	9.8	0.120	11.0	LOS A	0.6	4.4	0.65	0.76	32.8
West: Therry Road (W)											
10	L	185	4.0	0.501	12.2	LOS A	4.3	31.1	0.90	0.96	45.6
11	T	252	1.7	0.501	11.1	LOS A	4.3	31.1	0.90	0.96	45.4
12	R	272	1.2	0.501	18.9	LOS B	4.0	28.4	0.89	1.03	40.8
Approach		708	2.1	0.501	14.4	LOS A	4.3	31.1	0.90	0.99	43.5
All Vehicles		2624	1.8	0.607	10.8	LOS A	4.7	32.9	0.71	0.81	42.0

MOVEMENT SUMMARY

Site: I-11 2021 850D PM

Mount Gilead TIA
I-11 Therry Road / Central Road / Woodhouse Drive
Interim year 2021 with 850 dwellings development PM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Woodhouse Drive (S)											
1	L	223	3.3	0.263	8.4	LOS A	1.4	9.8	0.63	0.73	39.9
2	T	94	0.0	0.279	6.6	LOS A	1.6	11.0	0.63	0.60	39.7
3	R	189	1.7	0.279	13.5	LOS A	1.6	11.0	0.63	0.84	37.3
Approach		506	2.1	0.279	10.0	LOS A	1.6	11.0	0.63	0.75	38.7
East: Therry Road (E)											
4	L	296	0.7	0.437	9.9	LOS A	3.2	22.5	0.80	0.84	44.2
5	T	338	1.6	0.437	9.4	LOS A	3.2	22.5	0.79	0.84	44.1
6	R	91	2.3	0.437	16.5	LOS B	3.0	21.6	0.79	0.97	40.4
Approach		724	1.3	0.437	10.5	LOS A	3.2	22.5	0.80	0.86	43.6
North: Central Road (N)											
7	L	252	0.0	0.361	9.5	LOS A	1.8	12.7	0.72	0.85	33.6
8	T	174	0.0	0.451	7.9	LOS A	2.7	19.4	0.74	0.75	33.1
9	R	234	3.6	0.451	14.8	LOS B	2.7	19.4	0.74	0.98	31.6
Approach		659	1.3	0.451	11.0	LOS A	2.7	19.4	0.73	0.87	32.6
West: Therry Road (W)											
10	L	64	11.5	0.400	7.6	LOS A	2.5	18.0	0.56	0.64	48.9
11	T	489	0.9	0.400	6.1	LOS A	2.5	18.0	0.56	0.55	48.9
12	R	338	3.7	0.400	13.2	LOS A	2.4	17.5	0.57	0.78	44.8
Approach		892	2.7	0.400	8.9	LOS A	2.5	18.0	0.57	0.64	47.2
All Vehicles		2781	1.9	0.451	10.0	LOS A	3.2	22.5	0.68	0.77	42.6

I-12 Intersection of Therry Road and Gilchrist Drive

MOVEMENT SUMMARY

Site: I-12 2021 850D AM

Mount Gilead TIA
I-12 Therry Road / Gilcrist Drive / Shopping Centre Access
Interim year 2021 with 850 dwellings development AM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South East: Therry Road (SE)											
4	L	73	1.4	0.296	7.7	LOS A	1.4	10.1	0.52	0.68	48.9
5	T	203	0.0	0.296	6.4	LOS A	1.4	10.1	0.52	0.58	49.2
6	R	556	3.0	0.469	12.9	LOS A	2.8	20.0	0.57	0.77	44.3
Approach		832	2.2	0.469	10.9	LOS A	2.8	20.0	0.55	0.71	45.7
North East: Gilchrist Drive (NE)											
7	L	424	4.2	0.235	5.5	X	X	X	X	0.47	47.3
8	T	255	2.9	0.244	5.6	LOS A	1.3	9.4	0.39	0.48	44.0
9	R	133	0.0	0.244	12.0	LOS A	1.3	9.4	0.39	0.77	39.4
Approach		812	3.1	0.244	6.6	LOS A	1.3	9.4	0.19	0.52	44.6
North West: Shopping Centre Access (NW)											
10	L	74	2.9	0.119	10.8	LOS A	0.7	4.9	0.80	0.83	31.9
11	T	44	0.0	0.119	10.6	LOS A	0.7	4.9	0.79	0.83	31.7
12	R	22	0.0	0.119	17.4	LOS B	0.6	4.3	0.78	0.94	28.7
Approach		140	1.5	0.119	11.8	LOS A	0.7	4.9	0.79	0.85	31.2
South West: Gilchrist Drive (SW)											
1	L	229	0.0	0.586	10.8	LOS A	4.6	32.4	0.81	0.99	46.8
2	T	582	2.5	0.586	10.2	LOS A	4.6	32.4	0.81	0.96	46.4
3	R	159	0.7	0.586	17.4	LOS B	4.3	30.4	0.81	1.06	42.5
Approach		971	1.6	0.586	11.5	LOS A	4.6	32.4	0.81	0.98	45.7
All Vehicles		2754	2.2	0.586	9.9	LOS A	4.6	32.4	0.55	0.76	45.1

MOVEMENT SUMMARY

Site: I-12 2021 850D PM

Mount Gilead TIA
I-12 Therry Road / Gilcrist Drive / Shopping Centre Access
Interim year 2021 with 850 dwellings development PM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South East: Therry Road (SE)											
4	L	88	0.0	0.403	10.6	LOS A	2.3	16.4	0.76	0.91	47.0
5	T	182	0.0	0.403	9.5	LOS A	2.3	16.4	0.76	0.88	47.4
6	R	497	4.0	0.571	16.8	LOS B	4.6	33.2	0.83	1.03	42.1
Approach		767	2.6	0.571	14.3	LOS A	4.6	33.2	0.81	0.98	43.7
North East: Gilchrist Drive (NE)											
7	L	574	3.3	0.316	5.4	X	X	X	X	0.47	47.3
8	T	625	2.7	0.541	6.9	LOS A	3.8	26.9	0.63	0.63	41.6
9	R	116	0.0	0.541	13.4	LOS A	3.8	26.9	0.66	0.91	39.1
Approach		1315	2.7	0.541	6.8	LOS A	3.8	26.9	0.36	0.59	43.6
North West: Shopping Centre Access (NW)											
10	L	140	0.8	0.351	9.0	LOS A	2.1	14.8	0.74	0.79	33.7
11	T	268	0.4	0.351	8.1	LOS A	2.1	14.8	0.74	0.73	33.4
12	R	154	0.0	0.351	15.1	LOS B	2.0	13.7	0.74	0.94	30.4
Approach		562	0.4	0.351	10.2	LOS A	2.1	14.8	0.74	0.80	32.5
South West: Gilchrist Drive (SW)											
1	L	51	0.0	0.248	8.1	LOS A	1.4	9.7	0.68	0.71	48.1
2	T	321	1.6	0.248	7.2	LOS A	1.4	9.7	0.68	0.65	47.9
3	R	43	0.0	0.248	14.1	LOS A	1.3	9.1	0.68	0.94	45.1
Approach		415	1.3	0.248	8.1	LOS A	1.4	9.7	0.68	0.69	47.6
All Vehicles		3059	2.1	0.571	9.5	LOS A	4.6	33.2	0.59	0.74	43.0

I-13 Intersection of Gilchrist Drive and Kellicar Road

MOVEMENT SUMMARY

Site: I-13 2021 850D AM

Mount Gilead TIA
I-13 Narellan Road / Gilchrist Drive / Blaxland Road
Interim year 2021 with 850 dwellings development AM
Signals - Fixed Time Cycle Time = 100 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Gilchrist Drive (S)											
1	L	195	4.9	0.841	43.6	LOS D	24.9	178.6	0.93	1.00	17.6
2	T	897	1.5	0.841	36.3	LOS C	25.4	179.8	0.94	0.93	17.7
3	R	137	3.1	0.502	51.4	LOS D	6.1	44.1	0.93	0.79	15.0
Approach		1228	2.2	0.841	39.1	LOS C	25.4	179.8	0.94	0.93	17.4
East: Kellicar Road (E)											
4	L	109	7.7	0.262	23.6	LOS B	3.9	28.5	0.76	0.79	29.8
5	T	124	1.7	0.262	32.4	LOS C	3.9	28.5	0.86	0.68	22.9
6	R	25	8.3	0.128	38.0	LOS C	0.9	6.9	0.92	0.71	22.4
Approach		259	4.9	0.262	29.3	LOS C	3.9	28.5	0.83	0.73	25.3
North: Gilchrist Drive (N)											
7	L	215	5.4	0.695	34.9	LOS C	17.9	128.9	0.91	0.91	31.6
8	T	700	1.8	0.695	29.8	LOS C	18.8	134.0	0.92	0.82	31.2
9	R	462	4.6	0.856	61.6	LOS E	12.6	91.7	1.00	0.97	22.4
Approach		1377	3.3	0.856	41.3	LOS C	18.8	134.0	0.95	0.89	27.6
West: Kellicar Road (W)											
10	L	358	5.9	0.702	30.5	LOS C	11.3	83.0	0.68	0.81	18.2
11	T	81	2.6	0.117	37.4	LOS C	1.6	11.2	0.81	0.61	14.9
12	R	88	6.0	0.277	38.2	LOS C	3.2	23.5	0.82	0.75	15.7
Approach		527	5.4	0.702	32.9	LOS C	11.3	83.0	0.73	0.76	17.1
All Vehicles		3392	3.4	0.856	38.3	LOS C	25.4	179.8	0.90	0.87	22.9

MOVEMENT SUMMARY

Site: I-13 2021 850D PM

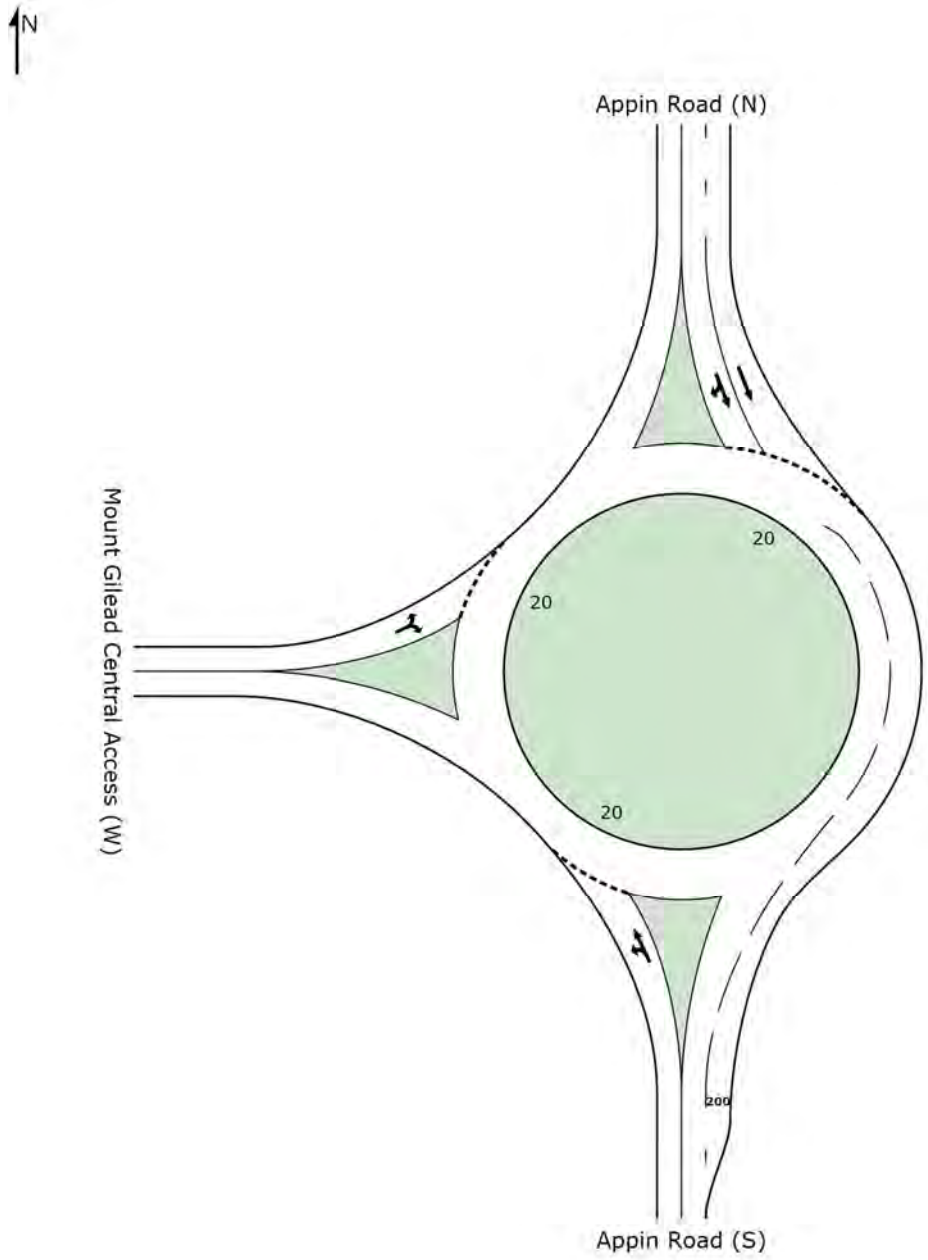
Mount Gilead TIA
I-13 Narellan Road / Gilchrist Drive / Blaxland Road
Interim year 2021 with 850 dwellings development PM
Signals - Fixed Time Cycle Time = 95 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Gilchrist Drive (S)											
1	L	143	6.6	0.723	39.2	LOS C	16.6	120.1	0.87	0.94	19.0
2	T	747	2.5	0.723	31.0	LOS C	17.2	123.3	0.88	0.80	19.7
3	R	185	3.4	0.809	56.6	LOS E	9.1	65.5	1.00	0.91	14.0
Approach		1076	3.2	0.809	36.5	LOS C	17.2	123.3	0.90	0.84	18.3
East: Kellicar Road (E)											
4	L	219	5.3	0.505	28.0	LOS B	8.1	58.8	0.83	0.86	27.2
5	T	258	0.0	0.505	33.1	LOS C	8.3	58.8	0.91	0.77	22.6
6	R	119	1.8	0.930	79.0	LOS F	7.6	54.0	1.00	1.12	13.3
Approach		596	2.3	0.930	40.4	LOS C	8.3	58.8	0.90	0.87	21.0
North: Gilchrist Drive (N)											
7	L	195	3.2	0.891	52.4	LOS D	28.3	203.1	1.00	1.08	25.4
8	T	893	2.6	0.891	45.0	LOS D	28.7	205.4	1.00	1.07	25.5
9	R	421	3.8	0.921	68.7	LOS E	12.0	86.7	1.00	1.08	20.9
Approach		1508	3.0	0.921	52.5	LOS D	28.7	205.4	1.00	1.08	24.0
West: Kellicar Road (W)											
10	L	624	4.0	0.897	32.1	LOS C	18.0	130.6	0.85	0.90	17.5
11	T	283	0.0	0.216	23.1	LOS B	4.0	28.0	0.64	0.52	20.6
12	R	220	4.3	0.780	44.9	LOS D	8.5	61.5	0.98	0.95	13.9
Approach		1127	3.1	0.897	32.3	LOS C	18.0	130.6	0.82	0.81	17.3
All Vehicles		4307	3.0	0.930	41.6	LOS C	28.7	205.4	0.91	0.92	21.2

I-0B Intersection of Appin Road and Mount Gilead Central Access

INTERSECTION LAYOUT



MOVEMENT SUMMARY

Site: I-0B 2021 850 AM - Roundabout

Mount Gilead TIA
I-0B Appin Road / Mount Gilead Central Access
Interim year 2021 with 850 dwellings development AM - Roundabout
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	2	0.0	0.756	9.0	LOS A	11.8	85.7	0.42	0.54	56.7
2	T	1201	4.3	0.756	9.9	LOS A	11.8	85.7	0.42	0.51	58.2
Approach		1203	4.3	0.756	9.9	LOS A	11.8	85.7	0.42	0.51	58.2
North: Appin Road (N)											
8	T	553	8.2	0.183	9.4	LOS A	1.5	10.9	0.08	0.56	61.1
9	R	44	7.1	0.183	13.0	LOS A	1.4	10.5	0.09	0.86	52.9
Approach		597	8.1	0.183	9.7	LOS A	1.5	10.9	0.09	0.58	60.5
West: Mount Gilead Central Access (W)											
10	L	167	1.9	0.448	25.3	LOS B	3.9	28.0	1.00	1.09	23.9
12	R	8	0.0	0.448	30.7	LOS C	3.9	28.0	1.00	1.09	23.5
Approach		176	1.8	0.448	25.5	LOS B	3.9	28.0	1.00	1.09	23.9
All Vehicles		1976	5.2	0.756	11.2	LOS A	11.8	85.7	0.37	0.58	55.8

MOVEMENT SUMMARY

Site: I-0B 2021 850 PM - Roundabout

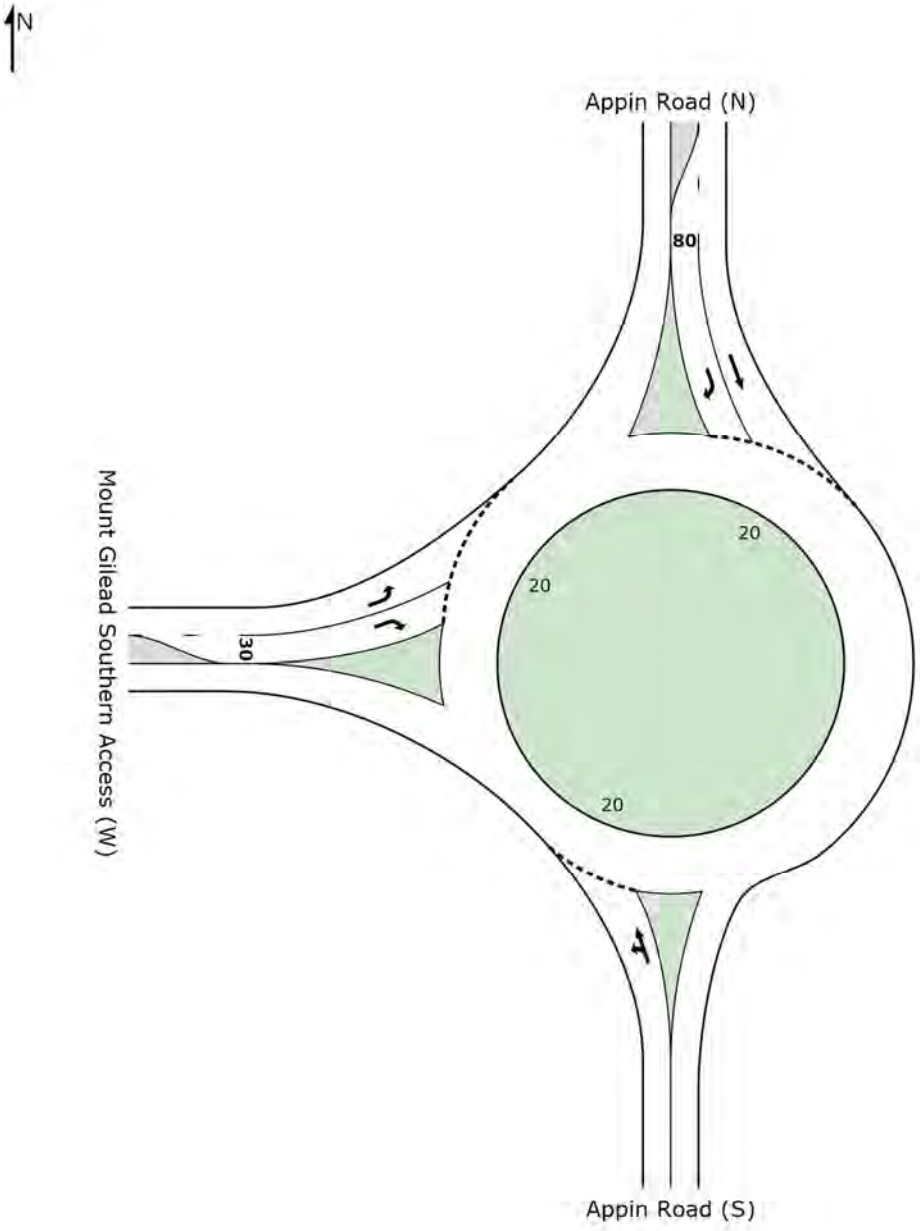
Mount Gilead TIA
I-0B Appin Road / Mount Gilead Central Access
Interim year 2021 with 850 dwellings development PM - Roundabout
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	8	0.0	0.469	9.8	LOS A	3.7	27.5	0.50	0.63	56.2
2	T	592	5.7	0.469	10.7	LOS A	3.7	27.5	0.50	0.61	57.5
Approach		600	5.6	0.469	10.6	LOS A	3.7	27.5	0.50	0.61	57.5
North: Appin Road (N)											
8	T	1448	1.7	0.469	9.1	LOS A	4.9	34.9	0.05	0.57	61.4
9	R	167	1.9	0.469	12.8	LOS A	4.9	34.8	0.05	0.87	52.9
Approach		1616	1.7	0.469	9.5	LOS A	4.9	34.9	0.05	0.60	60.5
West: Mount Gilead Central Access (W)											
10	L	44	7.1	0.060	9.8	LOS A	0.4	2.7	0.70	0.67	38.2
12	R	2	0.0	0.060	15.1	LOS B	0.4	2.7	0.70	0.76	34.6
Approach		46	6.8	0.060	10.0	LOS A	0.4	2.7	0.70	0.67	38.0
All Vehicles		2262	2.8	0.469	9.8	LOS A	4.9	34.9	0.18	0.60	59.4

I-0C Intersection of Appin Road and Mount Gilead Southern Access

INTERSECTION LAYOUT



MOVEMENT SUMMARY

Site: I-0C 2021 850D AM

Mount Gilead TIA
I-0C Appin Road / Mount Gilead Southern Access
Interim year 2021 with 850 dwellings development AM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	5	0.0	0.589	7.9	LOS A	5.2	38.2	0.43	0.59	53.0
2	T	808	5.1	0.589	8.3	LOS A	5.2	38.2	0.43	0.54	54.0
Approach		814	5.0	0.589	8.3	LOS A	5.2	38.2	0.43	0.54	54.0
North: Appin Road (N)											
8	T	458	8.3	0.273	7.6	LOS A	2.0	14.7	0.13	0.51	56.4
9	R	103	7.1	0.107	11.6	LOS A	0.5	3.8	0.13	0.66	49.2
Approach		561	8.1	0.273	8.4	LOS A	2.0	14.7	0.13	0.54	55.0
West: Mount Gilead Southern Access (W)											
10	L	392	1.9	0.469	12.3	LOS A	4.0	28.8	0.90	0.92	31.4
12	R	20	0.0	0.037	16.8	LOS B	0.2	1.5	0.75	0.77	29.0
Approach		412	1.8	0.469	12.5	LOS A	4.0	28.8	0.89	0.91	31.3
All Vehicles		1786	5.2	0.589	9.3	LOS A	5.2	38.2	0.44	0.63	50.7

MOVEMENT SUMMARY

Site: I-0C 2021 850D PM

Mount Gilead TIA
I-0C Appin Road / Mount Gilead Southern Access
Interim year 2021 with 850 dwellings development PM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	20	0.0	0.527	10.3	LOS A	4.2	30.5	0.72	0.79	51.3
2	T	494	4.7	0.527	10.7	LOS A	4.2	30.5	0.72	0.77	51.9
Approach		514	4.5	0.527	10.7	LOS A	4.2	30.5	0.72	0.77	51.9
North: Appin Road (N)											
8	T	1059	1.6	0.580	7.3	LOS A	6.3	44.6	0.08	0.52	56.8
9	R	392	1.9	0.326	11.6	LOS A	1.9	13.6	0.41	0.49	47.9
Approach		1451	1.7	0.580	8.4	LOS A	6.3	44.6	0.17	0.51	54.2
West: Mount Gilead Southern Access (W)											
10	L	103	7.1	0.100	8.4	LOS A	0.6	4.7	0.62	0.65	35.4
12	R	5	0.0	0.008	13.9	LOS A	0.0	0.3	0.61	0.66	31.8
Approach		108	6.8	0.100	8.7	LOS A	0.6	4.7	0.62	0.65	35.1
All Vehicles		2073	2.6	0.580	9.0	LOS A	6.3	44.6	0.33	0.58	53.0

Year 2026 – Future do-nothing conditions

I-01 Intersection of Appin Road and Church Street

MOVEMENT SUMMARY

Site: I-01 2026 DN AM

Mount Gilead TIA
I-01 Appin Road / Church Street
Future Year 2026 AM Peak Do-nothing scenario
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	96	3.3	0.136	13.0	LOS A	0.5	3.6	0.57	0.98	39.0
3	R	36	5.9	0.052	13.0	LOS A	0.2	1.4	0.56	0.93	39.0
Approach		132	4.0	0.136	13.0	LOS A	0.5	3.6	0.56	0.97	39.0
East: Church Street (E)											
4	L	60	1.8	0.368	6.5	LOS A	0.0	0.0	0.00	0.62	43.3
6	R	596	6.4	0.368	6.5	LOS A	0.0	0.0	0.00	0.60	43.4
Approach		656	5.9	0.368	6.5	NA	0.0	0.0	0.00	0.60	43.4
North: Appin Road (N)											
7	L	345	9.5	0.198	5.8	X	X	X	X	0.52	44.1
8	T	62	3.4	0.097	13.5	LOS A	0.3	2.5	0.58	0.98	38.7
Approach		407	8.5	0.198	7.0	LOS A	0.3	2.5	0.09	0.59	43.2
All Vehicles		1195	6.6	0.368	7.4	NA	0.5	3.6	0.09	0.64	42.8

MOVEMENT SUMMARY

Site: I-01 2026 DN PM

Mount Gilead TIA
I-01 Appin Road / Church Street
Future Year 2026 PM Peak Do-nothing scenario
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	112	1.9	0.127	11.6	LOS A	0.5	3.5	0.49	0.93	39.9
3	R	60	5.3	0.074	12.1	LOS A	0.3	2.1	0.51	0.92	39.6
Approach		172	3.1	0.127	11.8	LOS A	0.5	3.5	0.50	0.92	39.8
East: Church Street (E)											
4	L	77	4.1	0.293	6.5	LOS A	0.0	0.0	0.00	0.62	43.3
6	R	443	6.7	0.293	6.5	LOS A	0.0	0.0	0.00	0.60	43.4
Approach		520	6.3	0.293	6.5	NA	0.0	0.0	0.00	0.60	43.4
North: Appin Road (N)											
7	L	709	2.1	0.388	5.7	X	X	X	X	0.53	44.1
8	T	94	1.1	0.118	12.1	LOS A	0.4	3.2	0.53	0.95	39.5
Approach		803	2.0	0.388	6.4	LOS A	0.4	3.2	0.06	0.58	43.5
All Vehicles		1495	3.6	0.388	7.1	NA	0.5	3.5	0.09	0.63	43.0

I-02 Intersection of Appin Road, Kellerman Drive and Copperfield Drive

MOVEMENT SUMMARY

Site: I-02 2026 DN AM

Mount Gilead TIA
I-02 Appin Road / Kellerman Drive / Copperfield Drive
Future Year 2026 AM Peak Do-nothing scenario
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	54	0.0	0.789	13.4	LOS A	12.1	88.0	0.91	0.87	49.0
2	T	799	5.4	0.789	13.5	LOS A	12.1	88.0	0.91	0.87	49.8
3	R	3	0.0	0.789	18.1	LOS B	12.1	88.0	0.91	0.90	45.7
Approach		856	5.0	0.789	13.5	LOS A	12.1	88.0	0.91	0.87	49.8
East: Kellerman Drive (E)											
4	L	15	0.0	0.320	11.3	LOS A	2.0	14.9	0.70	0.78	48.9
5	T	163	9.7	0.320	9.3	LOS A	2.0	14.9	0.70	0.75	47.0
6	R	85	2.5	0.320	15.9	LOS B	2.0	14.9	0.70	0.87	44.7
Approach		263	6.8	0.320	11.6	LOS A	2.0	14.9	0.70	0.79	46.3
North: Appin Road (N)											
7	L	52	2.0	0.394	9.7	LOS A	3.1	23.1	0.47	0.62	56.0
8	T	374	11.0	0.394	10.5	LOS A	3.1	23.1	0.47	0.59	57.7
9	R	37	8.6	0.394	14.4	LOS A	3.1	23.1	0.47	0.77	52.8
Approach		462	9.8	0.394	10.7	LOS A	3.1	23.1	0.47	0.61	57.1
West: Copperfield Drive (W)											
10	L	134	3.1	0.541	18.3	LOS B	4.9	35.5	1.00	1.09	41.2
11	T	26	8.0	0.541	16.7	LOS B	4.9	35.5	1.00	1.09	40.4
12	R	114	1.9	0.541	23.8	LOS B	4.9	35.5	1.00	1.09	40.4
Approach		274	3.1	0.541	20.4	LOS B	4.9	35.5	1.00	1.09	40.7
All Vehicles		1855	6.2	0.789	13.6	LOS A	12.1	88.0	0.79	0.82	49.2

MOVEMENT SUMMARY

Site: I-02 2026 DN PM

Mount Gilead TIA
I-02 Appin Road / Kellerman Drive / Copperfield Drive
Future Year 2026 PM Peak Do-nothing scenario
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	27	3.8	0.503	9.5	LOS A	4.1	29.5	0.66	0.71	51.7
2	T	488	5.0	0.503	9.4	LOS A	4.1	29.5	0.66	0.68	52.3
3	R	21	0.0	0.503	14.0	LOS A	4.1	29.5	0.66	0.82	49.2
Approach		537	4.7	0.503	9.6	LOS A	4.1	29.5	0.66	0.69	52.1
East: Kellerman Drive (E)											
4	L	19	0.0	0.773	48.4	LOS D	9.4	69.0	1.00	1.31	28.0
5	T	144	5.8	0.773	46.3	LOS D	9.4	69.0	1.00	1.31	26.2
6	R	76	8.3	0.773	53.2	LOS D	9.4	69.0	1.00	1.31	26.6
Approach		239	6.2	0.773	48.7	LOS D	9.4	69.0	1.00	1.31	26.5
North: Appin Road (N)											
7	L	84	1.3	0.934	20.5	LOS B	27.5	195.6	1.00	0.93	45.6
8	T	980	1.5	0.934	20.8	LOS B	27.5	195.6	1.00	0.93	47.5
9	R	52	6.1	0.934	25.1	LOS B	27.5	195.6	1.00	0.93	43.2
Approach		1116	1.7	0.934	21.0	LOS B	27.5	195.6	1.00	0.93	47.2
West: Copperfield Drive (W)											
10	L	51	0.0	0.317	10.9	LOS A	2.1	15.1	0.75	0.80	47.4
11	T	78	5.4	0.317	9.3	LOS A	2.1	15.1	0.75	0.77	46.4
12	R	123	2.6	0.317	16.6	LOS B	2.1	15.1	0.75	0.86	45.6
Approach		252	2.9	0.317	13.2	LOS A	2.1	15.1	0.75	0.82	46.1
All Vehicles		2143	3.1	0.934	20.3	LOS B	27.5	195.6	0.89	0.90	44.4

I-03 Intersection of Appin Road, Kellerman Drive and Fitzgibbon Lane

MOVEMENT SUMMARY

Site: I-03 2026 DN AM

Mount Gilead TIA
I-03 Appin Road / Kellerman Drive / Fitzgibbon Lane
Future Year 2026 AM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	32	0.0	1.000 [3]	56.7	LOS E	21.5	155.5	1.00	0.86	28.0
2	T	1045	4.4	1.094	126.9	LOS F	85.3	620.0	1.00	1.29	15.3
3	R	3	0.0	0.024	76.1	LOS F	0.2	1.4	0.95	0.64	20.9
Approach		1080	4.3	1.094	124.7	LOS F	85.3	620.0	1.00	1.28	15.5
East: Kellerman Drive (E)											
4	L	6	0.0	0.420	48.0	LOS D	2.8	19.7	0.77	0.81	22.3
5	T	135	0.0	1.070	117.8	LOS F	29.4	206.7	0.91	1.09	9.9
6	R	162	0.6	1.070	174.0	LOS F	29.4	206.7	1.00	1.39	8.6
Approach		303	0.3	1.070	146.4	LOS F	29.4	206.7	0.96	1.24	9.2
North: Appin Road (N)											
7	L	82	1.3	0.240	30.1	LOS C	8.4	62.1	0.61	0.90	36.4
8	T	445	10.6	0.337	21.8	LOS B	12.4	94.1	0.63	0.55	39.9
9	R	368	0.3	1.068	133.6	LOS F	30.2	212.1	1.00	1.16	13.2
Approach		895	5.3	1.068	68.5	LOS E	30.2	212.1	0.78	0.83	22.0
West: Fitzgibbon Lane (W)											
10	L	553	1.3	0.532	29.3	LOS C	23.1	163.3	0.67	0.83	30.8
11	T	126	2.5	0.624	44.4	LOS D	8.1	57.8	0.85	0.69	20.2
12	R	21	5.0	0.624	53.3	LOS D	8.1	57.8	0.85	0.83	20.9
Approach		700	1.7	0.624	32.7	LOS C	23.1	163.3	0.71	0.81	28.1
All Vehicles		2978	3.6	1.094	88.4	LOS F	85.3	620.0	0.86	1.03	17.7

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-03 2026 DN PM

Mount Gilead TIA
I-03 Appin Road / Kellerman Drive / Fitzgibbon Lane
Future Year 2026 PM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	16	0.0	0.680	58.5	LOS E	13.6	98.8	0.91	0.90	27.2
2	T	539	4.5	0.680	50.1	LOS D	19.9	144.7	0.94	0.80	29.0
3	R	2	0.0	0.010	65.8	LOS E	0.1	0.9	0.88	0.63	23.2
Approach		557	4.3	0.680	50.4	LOS D	19.9	144.7	0.94	0.80	29.0
East: Kellerman Drive (E)											
4	L	7	0.0	0.277	58.6	LOS E	1.8	12.9	0.85	0.76	19.3
5	T	94	0.0	0.707	61.0	LOS E	9.8	68.7	0.96	0.80	16.1
6	R	75	0.0	0.707	74.5	LOS F	9.8	68.7	1.00	0.86	17.3
Approach		176	0.0	0.707	66.6	LOS E	9.8	68.7	0.97	0.82	16.8
North: Appin Road (N)											
7	L	185	1.1	0.505	31.5	LOS C	21.8	154.6	0.69	0.92	35.8
8	T	1040	1.9	0.707	25.1	LOS B	36.4	258.9	0.78	0.71	37.5
9	R	472	0.4	0.699	30.1	LOS C	15.3	107.3	0.91	0.86	35.2
Approach		1697	1.4	0.707	27.2	LOS B	36.4	258.9	0.81	0.77	36.7
West: Fitzgibbon Lane (W)											
10	L	279	1.1	0.233	19.8	LOS B	7.7	54.1	0.44	0.77	37.1
11	T	123	2.6	0.676	57.1	LOS E	9.0	64.5	0.94	0.79	17.1
12	R	20	5.3	0.676	66.0	LOS E	9.0	64.5	0.94	0.84	18.0
Approach		422	1.7	0.676	32.9	LOS C	9.0	64.5	0.61	0.78	27.4
All Vehicles		2852	2.0	0.707	35.0	LOS C	36.4	258.9	0.81	0.78	31.9

I-04 Intersection of Appin Road and Woodland Road

MOVEMENT SUMMARY

Site: I-04 2026 DN AM

Mount Gilead TIA
I-04 Appin Road / Woodland Road
Future Year 2026 AM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	1663	3.6	0.687	8.4	LOS A	20.3	146.4	0.40	0.37	60.2
3	R	84	2.5	0.253	53.4	LOS D	4.4	31.8	0.82	0.77	26.8
Approach		1747	3.6	0.687	10.5	LOS A	20.3	146.4	0.42	0.39	57.2
East: Woodland Road (E)											
4	L	106	1.0	0.693	49.1	LOS D	7.3	51.6	0.78	0.81	17.8
6	R	374	3.4	0.693	57.8	LOS E	20.9	150.7	0.94	0.85	17.4
Approach		480	2.9	0.693	55.9	LOS D	20.9	150.7	0.91	0.84	17.5
North: Appin Road (N)											
7	L	148	4.3	0.205	19.8	LOS B	3.9	28.4	0.42	0.75	42.3
8	T	831	4.9	0.684	42.8	LOS D	22.8	166.4	0.87	0.76	29.2
Approach		979	4.8	0.684	39.4	LOS C	22.8	166.4	0.80	0.76	30.6
All Vehicles		3206	3.8	0.693	26.1	LOS B	22.8	166.4	0.61	0.57	38.8

MOVEMENT SUMMARY

Site: I-04 2026 DN PM

Mount Gilead TIA
I-04 Appin Road / Woodland Road
Future Year 2026 PM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	852	4.0	0.299	1.4	LOS A	2.0	14.3	0.08	0.07	75.8
3	R	101	0.0	0.635	79.7	LOS F	7.0	48.9	1.00	0.80	20.2
Approach		953	3.5	0.635	9.7	LOS A	7.0	48.9	0.17	0.14	60.2
East: Woodland Road (E)											
4	L	99	0.0	0.663	59.3	LOS E	6.8	48.1	0.88	0.81	15.4
6	R	206	4.1	0.663	69.4	LOS E	12.3	89.4	0.98	0.83	15.1
Approach		305	2.8	0.663	66.1	LOS E	12.3	89.4	0.95	0.82	15.2
North: Appin Road (N)											
7	L	386	1.9	0.377	12.6	LOS A	6.3	44.6	0.26	0.74	49.1
8	T	1624	1.4	0.692	11.0	LOS A	23.6	166.8	0.47	0.43	50.4
Approach		2011	1.5	0.692	11.3	LOS A	23.6	166.8	0.43	0.49	50.2
All Vehicles		3268	2.2	0.692	15.9	LOS B	23.6	166.8	0.40	0.42	46.8

I-05 Intersection of Appin Road and St Johns Road

MOVEMENT SUMMARY

Site: I-05 2026 DN AM

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Future Year 2026 AM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	1767	3.5	0.763	11.9	LOS A	29.5	212.7	0.54	0.50	54.7
3	R	302	2.4	0.766	56.9	LOS E	18.0	128.7	0.89	0.86	25.8
Approach		2069	3.3	0.766	18.4	LOS B	29.5	212.7	0.59	0.55	47.7
East: St Johns Road (E)											
4	L	225	1.9	0.766	24.3	LOS B	5.7	40.6	0.32	0.76	35.4
6	R	413	1.0	0.746	56.8	LOS E	25.5	179.8	0.97	0.87	22.1
Approach		638	1.3	0.766	45.3	LOS D	25.5	179.8	0.74	0.83	25.4
North: Appin Road (N)											
7	L	237	3.1	0.130	11.2	X	X	X	X	0.69	58.9
8	T	736	6.7	0.766	53.0	LOS D	22.8	168.9	0.95	0.84	28.1
Approach		973	5.8	0.766	42.8	LOS D	22.8	168.9	0.72	0.80	32.2
All Vehicles		3680	3.6	0.766	29.5	LOS C	29.5	212.7	0.65	0.67	38.0

MOVEMENT SUMMARY

Site: I-05 2026 DN PM

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Future Year 2026 PM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	927	2.8	0.320	1.3	LOS A	2.2	15.9	0.08	0.07	75.8
3	R	151	2.8	0.772	80.6	LOS F	10.7	76.6	1.00	0.86	20.2
Approach		1078	2.8	0.772	12.4	LOS A	10.7	76.6	0.21	0.18	56.4
East: St Johns Road (E)											
4	L	163	0.6	0.780	40.5	LOS C	7.8	55.1	0.94	0.88	27.1
6	R	264	0.4	0.780	68.8	LOS E	15.1	105.9	0.99	0.88	19.4
Approach		427	0.5	0.780	58.0	LOS E	15.1	105.9	0.97	0.88	21.7
North: Appin Road (N)											
7	L	371	1.7	0.202	11.2	X	X	X	X	0.69	58.8
8	T	1866	1.7	0.807	13.2	LOS A	35.3	250.6	0.61	0.57	52.8
Approach		2237	1.7	0.807	12.8	LOS A	35.3	250.6	0.51	0.59	53.7
All Vehicles		3742	1.9	0.807	17.9	LOS B	35.3	250.6	0.48	0.51	48.0

I-06 Intersection of Appin Road and Therry Road

MOVEMENT SUMMARY

Site: I-06 2026 DN AM

Mount Gilead TIA
I-06 Appin Road / Therry Road
Future Year 2026 AM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	574	0.4	0.310	11.1	X	X	X	X	0.69	58.8
2	T	1631	3.9	0.857	27.2	LOS B	44.4	321.1	0.84	0.80	40.0
Approach		2204	3.0	0.857	23.0	LOS B	44.4	321.1	0.62	0.77	43.6
North: Appin Road (N)											
8	T	704	7.0	0.252	1.3	LOS A	1.5	11.4	0.07	0.06	76.0
9	R	313	1.0	0.848	75.5	LOS F	22.5	158.9	1.00	0.92	21.2
Approach		1017	5.2	0.848	24.1	LOS B	22.5	158.9	0.36	0.33	44.0
West: Therry Road (W)											
10	L	469	1.8	0.256	7.6	X	X	X	X	0.60	47.4
12	R	274	1.5	0.474	67.8	LOS E	8.6	61.3	0.96	0.80	19.9
Approach		743	1.7	0.474	29.8	LOS C	8.6	61.3	0.35	0.68	30.5
All Vehicles		3964	3.3	0.857	24.6	LOS B	44.4	321.1	0.50	0.64	41.1

MOVEMENT SUMMARY

Site: I-06 2026 DN PM

Mount Gilead TIA
I-06 Appin Road / Therry Road
Future Year 2026 PM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	340	0.9	0.184	11.1	X	X	X	X	0.69	58.8
2	T	881	3.8	0.831	54.6	LOS D	28.7	207.4	0.97	0.90	27.6
Approach		1221	3.0	0.831	42.5	LOS C	28.7	207.4	0.70	0.84	32.3
North: Appin Road (N)											
8	T	1709	2.3	0.605	2.0	LOS A	6.7	47.7	0.13	0.12	73.8
9	R	429	1.0	0.828	50.7	LOS D	24.8	175.3	0.83	0.88	27.9
Approach		2139	2.0	0.828	11.8	LOS A	24.8	175.3	0.27	0.27	56.8
West: Therry Road (W)											
10	L	404	1.0	0.219	7.6	X	X	X	X	0.60	47.4
12	R	513	0.2	0.806	74.2	LOS F	18.0	126.0	1.00	0.90	18.6
Approach		917	0.6	0.806	44.8	LOS D	18.0	126.0	0.56	0.77	24.8
All Vehicles		4277	2.0	0.831	27.6	LOS B	28.7	207.4	0.45	0.54	39.1

I-07 Intersection of Appin Road, Narellan Road, Oxley Street and The Parkway

MOVEMENT SUMMARY

Site: I-07 2026 DN AM

Mount Gilead TIA
I-07 Appin Road / Oxley Street / Narellan Road / Kellicar Road
Future Year 2026 AM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 135 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	573	8.1	0.326	7.8	X	X	X	X	0.60	49.7
2	T	1503	2.1	1.034	106.2	LOS F	74.8	533.0	1.00	1.33	14.9
3	R	36	0.0	0.094	24.9	LOS B	1.1	7.4	0.67	0.71	35.7
Approach		2112	3.7	1.034	78.1	LOS F	74.8	533.0	0.72	1.12	18.7
East: The Parkway (E)											
4	L	25	4.2	0.014	7.7	X	X	X	X	0.60	37.8
5	T	296	1.1	1.036	129.2	LOS F	29.6	209.5	1.00	1.31	5.1
6	R	226	2.6	1.000 [3]	69.6	LOS E	14.8	106.1	1.00	0.83	9.2
Approach		547	1.9	1.036	99.0	LOS F	29.6	209.5	0.95	1.08	6.6
North: Oxley Street (N)											
7	L	135	4.7	0.075	7.7	X	X	X	X	0.60	46.7
8	T	721	2.3	0.497	34.3	LOS C	18.0	128.6	0.82	0.71	27.3
9	R	269	1.9	1.044	143.5	LOS F	27.5	195.8	1.00	1.19	9.3
Approach		1125	2.5	1.044	57.2	LOS E	27.5	195.8	0.76	0.81	20.0
West: Narellan Road (W)											
10	L	311	1.7	0.563	30.9	LOS C	11.0	78.3	0.62	0.76	28.8
11	T	261	0.4	1.017	110.8	LOS F	27.9	198.1	1.00	1.22	11.8
12	R	315	10.4	1.017	121.6	LOS F	27.9	198.1	1.00	1.14	12.8
Approach		886	4.4	1.017	86.6	LOS F	27.9	198.1	0.87	1.03	15.3
All Vehicles		4671	3.3	1.044	77.2	LOS F	74.8	533.0	0.79	1.02	16.8

X: Not applicable for Continuous movement.
3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-07 2026 DN PM

Mount Gilead TIA
I-07 Appin Road / Oxley Street / Narellan Road / Kellicar Road
Future Year 2026 PM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 135 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	372	5.7	0.208	7.8	X	X	X	X	0.60	49.8
2	T	884	1.9	0.885	60.2	LOS E	30.3	215.9	1.00	0.99	21.8
3	R	75	0.0	0.919	104.3	LOS F	6.6	46.2	1.00	1.07	15.6
Approach		1331	2.8	0.919	48.0	LOS D	30.3	215.9	0.72	0.89	25.2
East: The Parkway (E)											
4	L	28	3.7	0.016	7.7	X	X	X	X	0.60	37.8
5	T	206	2.6	0.968	94.0	LOS F	17.3	123.5	1.00	1.13	6.8
6	R	178	2.4	0.877	82.9	LOS F	13.1	93.2	1.00	0.96	7.9
Approach		413	2.6	0.968	83.3	LOS F	17.3	123.5	0.93	1.02	7.7
North: Oxley Street (N)											
7	L	404	2.1	0.221	7.6	X	X	X	X	0.60	46.7
8	T	1506	1.6	0.811	31.6	LOS C	41.6	295.3	0.92	0.84	28.1
9	R	314	0.7	0.955	94.7	LOS F	26.0	182.7	1.00	1.04	13.0
Approach		2224	1.6	0.955	36.1	LOS C	41.6	295.3	0.76	0.83	26.0
West: Narellan Road (W)											
10	L	211	1.5	0.239	13.2	LOS A	2.8	19.6	0.24	0.66	41.0
11	T	372	0.3	0.946	71.7	LOS F	38.4	270.9	1.00	1.07	16.1
12	R	599	2.3	0.946	81.5	LOS F	38.4	270.9	1.00	1.02	17.4
Approach		1181	1.5	0.946	66.3	LOS E	38.4	270.9	0.86	0.97	18.8
All Vehicles		5148	2.0	0.968	49.9	LOS D	41.6	295.3	0.79	0.89	22.1

MOVEMENT SUMMARY

Site: I-07 2026 DN AM RMS Upgrade

Mount Gilead TIA
I-07 Appin Road / Oxley Street / Narellan Road / The Parkway
Ultimate year 2026 with no development - RMS Upgrade
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	573	8.1	0.701	15.8	LOS B	15.5	116.1	0.48	0.75	42.1
2	T	1503	2.1	0.994	81.0	LOS F	68.6	488.6	1.00	1.18	18.1
3	R	36	0.0	0.091	23.2	LOS B	1.0	7.1	0.63	0.71	36.8
Approach		2112	3.7	0.994	62.3	LOS E	68.6	488.6	0.85	1.06	21.6
East: The Parkway (E)											
4	L	25	4.2	0.014	7.7	X	X	X	X	0.60	37.8
5	T	306	1.1	0.586	62.3	LOS E	10.1	71.1	0.99	0.80	9.5
6	R	216	2.6	1.000 [3]	73.5	LOS F	14.8	106.1	1.00	0.83	8.8
Approach		547	1.9	1.000	64.2	LOS E	14.8	106.1	0.95	0.80	9.5
North: Oxley Street (N)											
7	L	135	4.7	0.164	9.5	LOS A	1.4	10.3	0.21	0.65	44.3
8	T	719	2.3	0.476	33.7	LOS C	18.1	129.3	0.80	0.70	27.6
9	R	276	1.9	0.958	99.4	LOS F	23.6	168.1	1.00	1.05	12.6
Approach		1129	2.5	0.958	46.9	LOS D	23.6	168.1	0.78	0.78	22.6
West: Narellan Road (W)											
10	L	311	1.7	0.557	29.5	LOS C	10.8	76.5	0.59	0.75	29.5
11	T	261	0.4	0.738	64.4	LOS E	13.7	96.0	1.00	0.85	17.4
12	R	315	10.4	0.738	74.4	LOS F	12.6	94.0	0.99	0.85	18.7
Approach		886	4.4	0.738	55.7	LOS D	13.7	96.0	0.85	0.82	20.8
All Vehicles		4675	3.3	1.000	57.5	LOS E	68.6	488.6	0.85	0.91	20.5

MOVEMENT SUMMARY

Site: I-07 2026 DN PM RMS Upgrade

Mount Gilead TIA
I-07 Appin Road / Oxley Street / Narellan Road / The Parkway
Ultimate year 2026 with no development - RMS Upgrade
Signals - Fixed Time Cycle Time = 135 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	372	5.7	0.471	13.9	LOS A	8.2	60.2	0.41	0.71	43.6
2	T	884	1.9	0.815	51.4	LOS D	27.3	194.0	0.96	0.89	23.9
3	R	75	0.0	0.775	75.3	LOS F	5.6	39.2	0.99	0.96	19.6
Approach		1331	2.8	0.815	42.3	LOS C	27.3	194.0	0.81	0.84	27.0
East: The Parkway (E)											
4	L	28	3.7	0.016	7.7	X	X	X	X	0.60	37.8
5	T	206	2.6	0.454	61.1	LOS E	6.5	46.4	0.98	0.77	9.7
6	R	178	2.4	0.822	77.5	LOS F	12.5	89.1	1.00	0.91	8.4
Approach		413	2.6	0.822	64.5	LOS E	12.5	89.1	0.92	0.82	9.5
North: Oxley Street (N)											
7	L	404	2.1	0.574	11.8	LOS A	7.1	50.5	0.36	0.70	41.5
8	T	1506	1.6	0.732	25.5	LOS B	37.3	265.0	0.83	0.76	31.2
9	R	314	0.7	0.818	68.2	LOS E	21.2	148.9	1.00	0.91	16.7
Approach		2224	1.6	0.818	29.1	LOS C	37.3	265.0	0.77	0.77	29.2
West: Narellan Road (W)											
10	L	211	1.5	0.232	12.5	LOS A	2.5	17.7	0.22	0.66	41.7
11	T	372	0.3	0.805	57.3	LOS E	21.5	150.8	0.99	0.90	18.8
12	R	599	2.3	0.805	66.9	LOS E	20.4	145.4	0.99	0.89	20.0
Approach		1181	1.5	0.805	54.2	LOS D	21.5	150.8	0.85	0.85	21.5
All Vehicles		5148	2.0	0.822	41.1	LOS C	37.3	265.0	0.81	0.81	24.9

I-08 Intersection of Narellan Road and Hurley Street

MOVEMENT SUMMARY

Site: I-08 2026 DN AM

Mount Gilead TIA
I-08 Narellan Road / Kellicar Road
Future Year 2026 AM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 130 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	151	4.9	0.880	58.5	LOS E	34.5	251.8	0.98	0.97	20.1
2	T	926	4.9	0.880	50.6	LOS D	34.5	251.8	0.98	0.96	20.3
3	R	127	2.5	0.395	59.6	LOS E	6.9	49.3	0.89	0.79	19.3
Approach		1204	4.6	0.880	52.5	LOS D	34.5	251.8	0.97	0.95	20.2
East: Kellicar Road (E)											
4	L	23	0.0	0.769	65.3	LOS E	15.8	116.2	0.99	0.89	11.0
5	T	488	6.3	0.769	57.4	LOS E	15.8	116.2	0.99	0.88	11.1
6	R	403	6.0	0.920	83.0	LOS F	14.6	107.5	1.00	0.98	8.7
Approach		915	6.0	0.920	68.9	LOS E	15.8	116.2	0.99	0.92	9.9
North: Narellan Road (N)											
7	L	1080	2.3	1.000 [3]	15.4	LOS B	31.4	223.9	0.72	0.96	42.4
8	T	792	4.3	0.646	39.1	LOS C	19.8	143.3	0.84	0.74	27.8
9	R	309	2.4	0.958	76.3	LOS F	21.7	155.0	1.00	0.93	19.4
Approach		2181	3.0	1.000	32.6	LOS C	31.4	223.9	0.81	0.87	31.3
West: Kellicar Road (W)											
10	L	127	5.8	0.252	32.3	LOS C	4.1	30.2	0.55	0.75	21.3
11	T	655	4.7	0.978	87.4	LOS F	26.6	193.4	1.00	1.15	9.8
12	R	142	3.0	0.635	68.4	LOS E	8.7	62.4	0.98	0.81	12.4
Approach		924	4.6	0.978	76.9	LOS F	26.6	193.4	0.93	1.04	11.0
All Vehicles		5224	4.2	1.000	51.4	LOS D	34.5	251.8	0.90	0.93	20.4

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-08 2026 DN PM

Mount Gilead TIA
I-08 Narellan Road / Kellicar Road
Future Year 2026 PM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 130 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	187	0.0	1.082	159.2	LOS F	58.7	419.2	1.00	1.43	9.1
2	T	872	3.5	1.082	151.1	LOS F	58.7	419.2	1.00	1.48	9.2
3	R	156	0.0	0.682	69.0	LOS E	9.7	67.7	0.99	0.83	17.4
Approach		1215	2.5	1.082	141.8	LOS F	58.7	419.2	1.00	1.39	9.7
East: Kellicar Road (E)											
4	L	28	0.0	1.076	155.5	LOS F	50.7	367.7	1.00	1.48	5.0
5	T	914	4.5	1.076	147.3	LOS F	50.7	367.7	1.00	1.48	5.1
6	R	763	2.1	1.084	163.9	LOS F	41.6	296.5	1.00	1.26	4.7
Approach		1705	3.3	1.084	154.9	LOS F	50.7	367.7	1.00	1.38	4.9
North: Narellan Road (N)											
7	L	579	2.4	0.512	10.7	LOS A	5.7	41.0	0.19	0.67	46.6
8	T	1025	1.8	1.051	127.2	LOS F	51.6	366.9	1.00	1.40	13.0
9	R	233	1.7	1.033	128.2	LOS F	21.8	154.6	1.00	1.16	13.3
Approach		1837	1.9	1.051	90.6	LOS F	51.6	366.9	0.75	1.14	17.0
West: Kellicar Road (W)											
10	L	277	0.8	0.541	34.4	LOS C	10.1	71.3	0.62	0.78	20.4
11	T	603	5.6	0.695	49.7	LOS D	17.0	124.5	0.94	0.80	15.1
12	R	223	0.5	0.627	60.6	LOS E	12.7	89.3	0.94	0.82	13.6
Approach		1103	3.3	0.695	48.1	LOS D	17.0	124.5	0.86	0.80	15.8
All Vehicles		5860	2.7	1.084	111.9	LOS F	58.7	419.2	0.89	1.20	10.7

I-09 Intersection of Narellan Road, Gilchrist Drive and Blaxland Road

MOVEMENT SUMMARY

Site: I-09 2026 DN AM

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Future Year 2026 AM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 135 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	14	53.8	0.028	16.6	LOS B	0.3	3.1	0.37	0.64	42.5
2	T	1190	5.9	0.824	38.9	LOS C	34.4	251.4	0.91	0.85	27.7
3	R	274	2.3	1.066	159.6	LOS F	29.7	212.1	1.00	1.28	11.2
Approach		1478	5.4	1.066	61.1	LOS E	34.4	251.4	0.92	0.92	21.8
East: Blaxland Road (E)											
4	L	443	3.0	1.000 [3]	52.3	LOS D	25.0	179.5	1.00	0.87	24.6
5	T	693	2.2	1.121	190.1	LOS F	42.2	303.3	1.00	1.52	9.5
6	R	576	10.0	1.265	311.1	LOS F	47.2	359.0	1.00	1.61	6.3
Approach		1712	5.2	1.265	195.1	LOS F	47.2	359.0	1.00	1.39	9.4
North: Narellan Road (N)											
7	L	756	7.8	0.944	24.7	LOS B	21.9	163.2	0.69	0.91	36.1
8	T	1919	3.8	1.323	352.6	LOS F	170.4	1231.5	1.00	2.23	5.6
9	R	565	4.8	1.235	198.7	LOS F	48.2	350.9	1.00	1.27	9.4
Approach		3240	5.0	1.323	249.3	LOS F	170.4	1231.5	0.93	1.76	7.6
West: Gilchrist Drive (W)											
10	L	736	3.5	1.000 [3]	51.7	LOS D	22.6	163.2	1.00	0.86	25.0
11	T	545	1.3	0.873	69.5	LOS E	19.8	140.2	1.00	1.00	19.9
12	R	21	0.0	0.141	63.3	LOS E	1.2	8.6	0.91	0.70	22.0
Approach		1302	2.7	1.000	59.3	LOS E	22.6	163.2	1.00	0.92	22.5
All Vehicles		7732	4.7	1.323	169.3	LOS F	170.4	1231.5	0.95	1.37	10.5

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-09 2026 DN PM

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Future Year 2026 PM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	5	0.0	0.008	17.8	LOS B	0.1	0.9	0.41	0.63	40.4
2	T	1797	2.7	1.320	354.0	LOS F	160.2	1147.6	1.00	2.19	5.5
3	R	140	1.1	1.516	556.4	LOS F	30.0	212.2	1.00	1.76	3.7
Approach		1942	2.4	1.516	367.6	LOS F	160.2	1147.6	1.00	2.16	5.4
East: Blaxland Road (E)											
4	L	468	2.9	1.000 [3]	49.4	LOS D	26.6	190.9	1.00	0.88	25.4
5	T	1047	2.3	1.340	382.8	LOS F	95.9	684.3	1.00	2.06	5.1
6	R	591	2.4	1.280	325.3	LOS F	50.2	359.0	1.00	1.61	6.1
Approach		2106	2.5	1.340	292.6	LOS F	95.9	684.3	1.00	1.67	6.6
North: Narellan Road (N)											
7	L	542	3.1	0.649	15.4	LOS B	14.1	101.0	0.46	0.73	42.3
8	T	1425	3.1	0.945	60.7	LOS E	51.1	367.3	1.00	1.19	21.5
9	R	553	3.3	1.245	206.4	LOS F	48.7	350.9	1.00	1.27	9.1
Approach		2520	3.2	1.245	82.9	LOS F	51.1	367.3	0.88	1.11	18.0
West: Gilchrist Drive (W)											
10	L	755	3.1	1.000 [3]	50.7	LOS D	22.7	163.2	1.00	0.86	25.3
11	T	741	3.2	0.952	85.7	LOS F	31.9	229.1	1.00	1.12	17.2
12	R	77	0.0	0.541	68.5	LOS E	4.9	34.0	0.95	0.76	20.9
Approach		1573	2.9	1.000	68.0	LOS E	31.9	229.1	1.00	0.98	20.6
All Vehicles		8141	2.8	1.516	202.2	LOS F	160.2	1147.6	0.96	1.48	9.1

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-09 2026 DN AM RMS Upgrade

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Future Year 2026 AM Peak Do-nothing scenario with RMS Upgrade
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	14	53.8	0.038	18.2	LOS B	0.3	3.5	0.39	0.64	41.2
2	T	1092	5.9	0.554	34.8	LOS C	18.0	132.6	0.74	0.65	29.6
3	R	373	2.3	0.649	68.4	LOS E	12.2	86.7	0.99	0.82	21.0
Approach		1478	5.4	0.649	43.2	LOS D	18.0	132.6	0.80	0.69	26.8
East: Blaxland Road (E)											
4	L	444	3.0	1.000 [3]	52.3	LOS D	25.0	179.5	1.00	0.88	24.6
5	T	689	2.2	1.058	142.1	LOS F	36.8	263.8	1.00	1.35	11.9
6	R	579	10.0	1.250	301.0	LOS F	47.2	359.0	1.00	1.56	6.5
Approach		1712	5.2	1.250	172.6	LOS F	47.2	359.0	1.00	1.30	10.4
North: Narellan Road (N)											
7	L	756	7.8	0.647	20.9	LOS B	22.5	167.7	0.64	0.87	38.5
8	T	1791	3.8	1.301	336.2	LOS F	156.2	1128.6	1.00	2.15	5.8
9	R	693	4.8	1.227	296.3	LOS F	53.8	391.7	1.00	1.60	6.6
Approach		3240	5.0	1.301	254.1	LOS F	156.2	1128.6	0.92	1.74	7.5
West: Gilchrist Drive (W)											
10	L	738	3.5	1.000 [3]	51.7	LOS D	22.6	163.2	1.00	0.86	25.0
11	T	543	1.3	0.827	66.3	LOS E	19.4	137.6	1.00	0.94	20.5
12	R	21	0.0	0.145	64.7	LOS E	1.3	8.8	0.91	0.70	21.8
Approach		1302	2.7	1.000	58.0	LOS E	22.6	163.2	1.00	0.89	22.9
All Vehicles		7732	4.7	1.301	162.7	LOS F	156.2	1128.6	0.93	1.30	10.9

MOVEMENT SUMMARY

Site: I-09 2026 DN PM RMS Upgrade

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Future Year 2026 PM Peak Do-nothing scenario with RMS Upgrade
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	5	0.0	0.011	21.2	LOS B	0.2	1.1	0.47	0.63	38.0
2	T	1549	2.7	1.117	146.3	LOS F	66.5	476.2	1.00	1.40	11.7
3	R	387	1.1	0.981	110.4	LOS F	17.2	121.7	1.00	1.11	15.0
Approach		1942	2.4	1.117	138.8	LOS F	66.5	476.2	1.00	1.34	12.3
East: Blaxland Road (E)											
4	L	473	2.9	0.866	44.1	LOS D	25.0	179.5	1.00	0.88	27.1
5	T	876	2.3	1.196	255.5	LOS F	64.2	458.4	1.00	1.75	7.4
6	R	757	2.4	1.133	201.6	LOS F	50.2	359.0	1.00	1.35	9.2
Approach		2106	2.5	1.196	188.7	LOS F	64.2	458.4	1.00	1.41	9.6
North: Narellan Road (N)											
7	L	542	3.1	0.454	18.0	LOS B	16.3	117.2	0.53	0.75	40.3
8	T	1154	3.1	1.010	68.2	LOS E	39.4	283.1	1.00	1.13	20.1
9	R	824	3.3	1.136	216.2	LOS F	54.4	391.7	1.00	1.42	8.7
Approach		2520	3.2	1.136	105.8	LOS F	54.4	391.7	0.90	1.14	15.3
West: Gilchrist Drive (W)											
10	L	809	3.1	1.000 [3]	47.2	LOS D	22.7	163.2	1.00	0.87	26.4
11	T	687	3.2	0.945	84.5	LOS F	29.0	208.8	1.00	1.11	17.4
12	R	77	0.0	0.501	59.8	LOS E	4.5	31.3	0.89	0.75	22.9
Approach		1573	2.9	1.000	64.1	LOS E	29.0	208.8	0.99	0.97	21.4
All Vehicles		8141	2.8	1.196	127.0	LOS F	66.5	476.2	0.97	1.23	13.2

I-10 Intersection of Oxley Street and Camden Road

MOVEMENT SUMMARY

Site: I-10 2026 DN AM

Mount Gilead TIA
I-10 Oxley Street / Blaxland Road
Future Year 2026 AM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 105 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Oxley Street (S)											
1	L	260	1.6	0.756	12.0	LOS A	14.8	105.4	0.32	0.89	42.2
2	T	1786	2.2	0.756	3.2	LOS A	14.8	105.4	0.27	0.25	51.6
Approach		2046	2.1	0.756	4.3	LOS A	14.8	105.4	0.27	0.34	50.2
North: Oxley Street (N)											
8	T	1120	2.6	0.330	0.3	LOS A	1.1	7.7	0.08	0.04	56.9
9	R	87	0.0	0.706	64.7	LOS E	4.8	33.5	1.00	0.84	12.8
Approach		1207	2.4	0.706	4.9	LOS A	4.8	33.5	0.14	0.10	45.5
West: Camden Road (W)											
10	L	51	4.2	0.159	9.6	LOS A	0.5	3.6	0.26	0.65	33.9
12	R	77	2.7	0.738	66.8	LOS E	4.3	30.8	1.00	0.85	8.9
Approach		127	3.3	0.738	44.1	LOS D	4.3	30.8	0.71	0.77	12.8
All Vehicles		3381	2.3	0.756	6.0	LOS A	14.8	105.4	0.24	0.27	46.2

MOVEMENT SUMMARY

Site: I-10 2026 DN PM

Mount Gilead TIA
I-10 Oxley Street / Blaxland Road
Future Year 2026 PM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 80 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Oxley Street (S)											
1	L	193	0.0	0.737	24.1	LOS B	18.2	128.9	0.79	0.90	32.7
2	T	1091	2.1	0.737	16.5	LOS B	18.2	129.2	0.78	0.71	34.2
Approach		1283	1.8	0.737	17.7	LOS B	18.2	129.2	0.78	0.74	34.0
North: Oxley Street (N)											
8	T	1946	1.9	0.595	0.4	LOS A	2.2	15.7	0.12	0.07	55.2
9	R	76	1.4	0.550	49.9	LOS D	3.1	22.0	1.00	0.77	15.6
Approach		2022	1.9	0.595	2.2	LOS A	3.1	22.0	0.16	0.09	50.4
West: Camden Road (W)											
10	L	111	2.9	0.198	12.8	LOS A	1.6	11.2	0.45	0.70	29.6
12	R	346	0.0	0.746	40.6	LOS C	13.4	93.6	0.98	0.89	13.4
Approach		457	0.7	0.746	33.9	LOS C	13.4	93.6	0.85	0.84	15.6
All Vehicles		3762	1.7	0.746	11.3	LOS A	18.2	129.2	0.45	0.40	36.5

I-11 Intersection of Therry Road, Central Road and Woodhouse Drive

MOVEMENT SUMMARY

Site: I-11 2026 DN AM

Mount Gilead TIA
I-11 Therry Road / Central Road / Woodhouse Drive
Future Year 2026 AM Peak Do-nothing scenario
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Woodhouse Drive (S)											
1	L	327	2.3	0.391	8.4	LOS A	2.0	14.5	0.63	0.73	40.0
2	T	343	0.0	0.617	7.8	LOS A	4.9	34.6	0.73	0.76	39.0
3	R	329	1.0	0.617	14.7	LOS B	4.9	34.6	0.73	0.96	36.6
Approach		1000	1.1	0.617	10.2	LOS A	4.9	34.6	0.70	0.82	38.4
East: Therry Road (E)											
4	L	224	0.5	0.332	7.1	LOS A	2.1	14.6	0.56	0.63	46.0
5	T	284	0.4	0.332	6.0	LOS A	2.1	14.6	0.57	0.55	45.9
6	R	218	0.0	0.332	13.0	LOS A	2.0	14.0	0.57	0.79	42.5
Approach		726	0.3	0.332	8.4	LOS A	2.1	14.6	0.57	0.64	44.8
North: Central Road (N)											
7	L	93	8.0	0.107	8.4	LOS A	0.6	4.2	0.65	0.71	34.2
8	T	11	20.0	0.126	8.1	LOS A	0.6	4.7	0.66	0.68	33.3
9	R	77	9.6	0.126	14.7	LOS B	0.6	4.7	0.66	0.84	31.2
Approach		180	9.4	0.126	11.1	LOS A	0.6	4.7	0.66	0.77	32.7
West: Therry Road (W)											
10	L	195	3.8	0.532	13.4	LOS A	4.9	35.0	0.94	1.01	44.4
11	T	237	0.9	0.532	12.3	LOS A	4.9	35.0	0.93	1.01	44.2
12	R	285	1.1	0.532	20.3	LOS B	4.5	31.7	0.92	1.06	39.8
Approach		717	1.8	0.532	15.8	LOS B	4.9	35.0	0.93	1.03	42.3
All Vehicles		2623	1.6	0.617	11.3	LOS A	4.9	35.0	0.72	0.82	41.4

MOVEMENT SUMMARY

Site: I-11 2026 DN PM

Mount Gilead TIA
I-11 Therry Road / Central Road / Woodhouse Drive
Future Year 2026 PM Peak Do-nothing scenario
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Woodhouse Drive (S)											
1	L	234	3.2	0.277	8.5	LOS A	1.5	10.6	0.65	0.73	39.8
2	T	99	0.0	0.296	6.7	LOS A	1.7	11.9	0.65	0.61	39.5
3	R	199	1.6	0.296	13.6	LOS A	1.7	11.9	0.65	0.85	37.2
Approach		532	2.0	0.296	10.0	LOS A	1.7	11.9	0.65	0.75	38.7
East: Therry Road (E)											
4	L	311	0.7	0.459	10.6	LOS A	3.5	24.9	0.83	0.88	43.8
5	T	327	1.0	0.459	10.1	LOS A	3.5	24.9	0.82	0.89	43.4
6	R	95	2.2	0.459	17.3	LOS B	3.3	23.6	0.82	1.00	39.7
Approach		733	1.0	0.459	11.3	LOS A	3.5	24.9	0.82	0.90	43.0
North: Central Road (N)											
7	L	264	0.0	0.369	9.4	LOS A	1.9	13.2	0.71	0.84	33.7
8	T	182	0.0	0.463	7.8	LOS A	2.8	20.2	0.74	0.75	33.2
9	R	245	3.4	0.463	14.8	LOS B	2.8	20.2	0.74	0.99	31.6
Approach		692	1.2	0.463	10.9	LOS A	2.8	20.2	0.73	0.87	32.7
West: Therry Road (W)											
10	L	67	10.9	0.380	7.6	LOS A	2.4	16.8	0.57	0.65	48.9
11	T	409	0.5	0.380	6.1	LOS A	2.4	16.8	0.57	0.56	48.9
12	R	356	3.8	0.380	13.3	LOS A	2.3	16.5	0.58	0.77	44.5
Approach		833	2.8	0.380	9.3	LOS A	2.4	16.8	0.57	0.65	46.9
All Vehicles		2788	1.8	0.463	10.4	LOS A	3.5	24.9	0.69	0.79	42.1

I-12 Intersection of Therry Road and Gilchrist Drive

MOVEMENT SUMMARY

Site: I-12 2026 DN AM

Mount Gilead TIA
I-12 Therry Road / Gilchrist Drive / Shopping Centre Access
Future Year 2026 AM Peak Do-nothing scenario
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South East: Therry Road (SE)											
4	L	76	1.4	0.280	7.6	LOS A	1.3	9.5	0.52	0.68	48.9
5	T	189	0.0	0.280	6.4	LOS A	1.3	9.5	0.52	0.58	49.2
6	R	476	3.5	0.407	12.9	LOS A	2.3	16.4	0.55	0.77	44.4
Approach		741	2.4	0.407	10.7	LOS A	2.3	16.4	0.54	0.71	45.9
North East: Gilchrist Drive (NE)											
7	L	425	4.2	0.236	5.5	X	X	X	X	0.47	47.3
8	T	267	2.8	0.257	5.6	LOS A	1.4	10.0	0.40	0.49	43.8
9	R	139	0.0	0.257	12.0	LOS A	1.4	10.0	0.40	0.77	39.4
Approach		832	3.0	0.257	6.6	LOS A	1.4	10.0	0.20	0.53	44.5
North West: Shopping Centre Access (NW)											
10	L	77	2.7	0.114	10.2	LOS A	0.6	4.6	0.78	0.81	32.7
11	T	41	0.0	0.114	9.9	LOS A	0.6	4.6	0.77	0.82	32.5
12	R	23	0.0	0.114	16.7	LOS B	0.6	4.1	0.76	0.94	29.3
Approach		141	1.5	0.114	11.2	LOS A	0.6	4.6	0.77	0.84	31.9
South West: Gilchrist Drive (SW)											
1	L	241	0.0	0.580	10.2	LOS A	4.4	31.4	0.78	0.96	47.4
2	T	612	2.6	0.580	9.5	LOS A	4.4	31.4	0.78	0.91	46.8
3	R	167	0.6	0.580	16.6	LOS B	4.2	29.8	0.78	1.05	43.0
Approach		1020	1.7	0.580	10.9	LOS A	4.4	31.4	0.78	0.94	46.2
All Vehicles		2734	2.3	0.580	9.5	LOS A	4.4	31.4	0.54	0.75	45.3

MOVEMENT SUMMARY

Site: I-12 2026 DN PM

Mount Gilead TIA
I-12 Therry Road / Gilchrist Drive / Shopping Centre Access
Future Year 2026 PM Peak Do-nothing scenario
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South East: Therry Road (SE)											
4	L	93	0.0	0.430	11.3	LOS A	2.6	18.3	0.79	0.94	46.4
5	T	186	0.0	0.430	10.1	LOS A	2.6	18.3	0.79	0.91	46.8
6	R	501	4.0	0.596	17.5	LOS B	5.0	36.2	0.86	1.05	41.6
Approach		780	2.6	0.596	15.0	LOS B	5.0	36.2	0.83	1.00	43.2
North East: Gilchrist Drive (NE)											
7	L	523	3.6	0.289	5.4	X	X	X	X	0.47	47.3
8	T	657	2.7	0.568	7.0	LOS A	4.2	29.7	0.65	0.65	41.5
9	R	122	0.0	0.568	13.5	LOS A	4.2	29.7	0.67	0.92	39.0
Approach		1302	2.8	0.568	7.0	LOS A	4.2	29.7	0.39	0.60	43.3
North West: Shopping Centre Access (NW)											
10	L	147	0.7	0.360	9.1	LOS A	2.2	15.3	0.75	0.80	33.6
11	T	258	0.4	0.360	8.2	LOS A	2.2	15.3	0.75	0.74	33.3
12	R	161	0.0	0.360	15.3	LOS B	2.0	14.3	0.75	0.95	30.1
Approach		566	0.4	0.360	10.5	LOS A	2.2	15.3	0.75	0.82	32.3
South West: Gilchrist Drive (SW)											
1	L	53	0.0	0.264	8.2	LOS A	1.5	10.4	0.69	0.72	48.1
2	T	337	1.6	0.264	7.3	LOS A	1.5	10.4	0.69	0.66	47.8
3	R	45	0.0	0.264	14.2	LOS A	1.4	9.8	0.69	0.95	45.1
Approach		435	1.2	0.264	8.1	LOS A	1.5	10.4	0.69	0.70	47.5
All Vehicles		3083	2.1	0.596	9.8	LOS A	5.0	36.2	0.61	0.76	42.7

I-13 Intersection of Gilchrist Drive and Kellicar Road

MOVEMENT SUMMARY

Site: I-13 2026 DN AM

Mount Gilead TIA
I-13 Narellan Road / Gilchrist Drive / Blaxland Road
Future Year 2026 AM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 100 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Gilchrist Drive (S)											
1	L	124	6.8	0.858	49.3	LOS D	25.7	184.2	0.96	1.02	16.2
2	T	943	1.6	0.858	40.1	LOS C	25.9	184.2	0.97	0.97	16.7
3	R	143	2.9	0.545	50.4	LOS D	6.3	45.4	0.92	0.79	15.2
Approach		1211	2.3	0.858	42.2	LOS C	25.9	184.2	0.96	0.95	16.4
East: Kellicar Road (E)											
4	L	115	7.3	0.275	24.6	LOS B	4.2	31.2	0.78	0.79	29.2
5	T	131	1.6	0.275	32.8	LOS C	4.2	31.2	0.87	0.69	22.8
6	R	26	8.0	0.135	38.3	LOS C	1.0	7.2	0.93	0.71	22.3
Approach		272	4.7	0.275	29.9	LOS C	4.2	31.2	0.84	0.73	25.0
North: Gilchrist Drive (N)											
7	L	226	5.6	0.753	37.6	LOS C	20.2	145.7	0.94	0.94	30.4
8	T	736	1.9	0.753	32.5	LOS C	21.0	149.0	0.95	0.88	29.9
9	R	485	4.6	0.843	59.8	LOS E	13.0	94.8	1.00	0.96	22.8
Approach		1447	3.3	0.843	42.5	LOS C	21.0	149.0	0.97	0.91	27.2
West: Kellicar Road (W)											
10	L	376	5.9	0.725	30.3	LOS C	11.9	87.5	0.67	0.81	18.2
11	T	85	2.5	0.123	37.4	LOS C	1.6	11.8	0.82	0.61	14.9
12	R	72	5.9	0.227	37.8	LOS C	2.5	18.7	0.81	0.74	15.8
Approach		533	5.3	0.725	32.5	LOS C	11.9	87.5	0.72	0.77	17.2
All Vehicles		3462	3.4	0.858	39.9	LOS C	25.9	184.2	0.92	0.89	22.5

MOVEMENT SUMMARY

Site: I-13 2026 DN PM

Mount Gilead TIA
I-13 Narellan Road / Gilchrist Drive / Blaxland Road
Future Year 2026 PM Peak Do-nothing scenario
Signals - Fixed Time Cycle Time = 105 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Gilchrist Drive (S)											
1	L	129	6.5	0.750	44.2	LOS D	19.5	140.9	0.89	0.94	17.5
2	T	785	2.5	0.750	35.4	LOS C	20.1	143.7	0.90	0.83	18.1
3	R	195	3.2	0.867	64.6	LOS E	10.9	78.7	1.00	0.95	12.6
Approach		1109	3.1	0.867	41.6	LOS C	20.1	143.7	0.92	0.86	16.7
East: Kellicar Road (E)											
4	L	231	5.5	0.470	31.9	LOS C	9.3	67.6	0.80	0.90	25.1
5	T	271	0.0	0.470	34.7	LOS C	9.7	67.8	0.89	0.76	22.1
6	R	125	1.7	1.006	118.8	LOS F	10.8	76.4	1.00	1.25	9.6
Approach		626	2.4	1.006	50.5	LOS D	10.8	76.4	0.88	0.91	18.1
North: Gilchrist Drive (N)											
7	L	204	3.1	0.941	68.4	LOS E	37.0	264.8	1.00	1.17	21.4
8	T	938	2.6	0.941	60.8	LOS E	37.2	265.9	1.00	1.17	21.6
9	R	443	3.8	0.990	73.9	LOS F	13.5	97.9	1.00	0.97	19.9
Approach		1585	3.0	0.990	65.4	LOS E	37.2	265.9	1.00	1.11	21.1
West: Kellicar Road (W)											
10	L	656	4.0	0.965	31.4	LOS C	18.0	130.6	0.96	0.90	17.8
11	T	298	0.0	0.211	23.1	LOS B	4.4	30.5	0.61	0.50	20.7
12	R	152	5.6	0.510	37.9	LOS C	5.6	41.4	0.88	0.79	15.8
Approach		1105	3.1	0.965	30.1	LOS C	18.0	130.6	0.85	0.78	18.1
All Vehicles		4426	3.0	1.006	48.5	LOS D	37.2	265.9	0.92	0.94	19.3

Year 2026 – Future conditions with development (1500 dwellings)

I-01 Intersection of Appin Road and Church Street

MOVEMENT SUMMARY

Site: I-01 2026 1500D AM

Mount Gilead TIA
I-01 Appin Road / Church Street
Ultimate year 2026 with 1500 dwellings development AM
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	92	3.4	0.133	13.1	LOS A	0.5	3.5	0.57	0.99	38.9
3	R	36	5.9	0.053	13.2	LOS A	0.2	1.4	0.56	0.93	38.9
Approach		127	4.1	0.133	13.1	LOS A	0.5	3.5	0.57	0.97	38.9
East: Church Street (E)											
4	L	60	1.8	0.375	6.5	LOS A	0.0	0.0	0.00	0.62	43.3
6	R	608	6.4	0.375	6.5	LOS A	0.0	0.0	0.00	0.60	43.4
Approach		668	6.0	0.375	6.5	NA	0.0	0.0	0.00	0.60	43.4
North: Appin Road (N)											
7	L	393	8.6	0.224	5.8	X	X	X	X	0.53	44.1
8	T	67	3.1	0.107	13.6	LOS A	0.4	2.8	0.59	0.99	38.6
Approach		460	7.8	0.224	6.9	LOS A	0.4	2.8	0.09	0.59	43.2
All Vehicles		1256	6.5	0.375	7.3	NA	0.5	3.5	0.09	0.64	42.8

MOVEMENT SUMMARY

Site: I-01 2026 1500D PM

Mount Gilead TIA
I-01 Appin Road / Church Street
Ultimate year 2026 with 1500 dwellings development PM
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	117	1.8	0.142	12.0	LOS A	0.5	3.9	0.52	0.95	39.6
3	R	60	5.3	0.078	12.5	LOS A	0.3	2.2	0.53	0.93	39.3
Approach		177	3.0	0.142	12.1	LOS A	0.5	3.9	0.52	0.94	39.5
East: Church Street (E)											
4	L	77	4.1	0.318	6.5	LOS A	0.0	0.0	0.00	0.62	43.3
6	R	491	6.2	0.318	6.5	LOS A	0.0	0.0	0.00	0.60	43.4
Approach		567	5.9	0.318	6.5	NA	0.0	0.0	0.00	0.60	43.4
North: Appin Road (N)											
7	L	722	2.2	0.395	5.7	X	X	X	X	0.53	44.1
8	T	95	1.1	0.128	12.6	LOS A	0.5	3.4	0.55	0.97	39.2
Approach		817	2.1	0.395	6.5	LOS A	0.5	3.4	0.06	0.58	43.5
All Vehicles		1561	3.6	0.395	7.1	NA	0.5	3.9	0.09	0.63	43.0

I-02 Intersection of Appin Road, Kellerman Drive and Copperfield Drive

MOVEMENT SUMMARY

Site: I-02 2026 1500D AM

Mount Gilead TIA
I-02 Appin Road / Kellerman Drive / Copperfield Drive
Ultimate year 2026 with 1500 dwellings development AM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	105	1.0	1.639	587.9	LOS F	476.5	3433.7	1.00	8.37	3.5
2	T	1736	3.6	1.639	587.9	LOS F	476.5	3433.7	1.00	8.36	3.7
3	R	3	0.0	1.639	592.6	LOS F	476.5	3433.7	1.00	8.37	3.7
Approach		1844	3.4	1.639	587.9	LOS F	476.5	3433.7	1.00	8.37	3.7
East: Kellerman Drive (E)											
4	L	15	0.0	0.435	15.2	LOS B	3.3	24.4	0.89	0.96	45.4
5	T	163	9.7	0.435	13.2	LOS A	3.3	24.4	0.89	0.96	43.7
6	R	85	2.5	0.435	19.8	LOS B	3.3	24.4	0.89	0.99	41.9
Approach		263	6.8	0.435	15.5	LOS B	3.3	24.4	0.89	0.97	43.2
North: Appin Road (N)											
7	L	52	2.0	0.596	10.1	LOS A	5.9	44.8	0.62	0.64	55.2
8	T	622	9.6	0.596	10.8	LOS A	5.9	44.8	0.62	0.62	56.6
9	R	37	8.6	0.596	14.8	LOS B	5.9	44.8	0.62	0.75	52.7
Approach		711	9.0	0.596	11.0	LOS A	5.9	44.8	0.62	0.63	56.3
West: Copperfield Drive (W)											
10	L	134	3.1	0.919	79.6	LOS F	16.2	116.5	1.00	1.61	19.6
11	T	26	8.0	0.919	77.9	LOS F	16.2	116.5	1.00	1.60	18.9
12	R	127	2.5	0.919	85.0	LOS F	16.2	116.5	1.00	1.61	20.5
Approach		287	3.3	0.919	81.8	LOS F	16.2	116.5	1.00	1.61	20.0
All Vehicles		3105	5.0	1.639	360.5	LOS F	476.5	3433.7	0.90	5.34	5.9

MOVEMENT SUMMARY

Site: I-02 2026 1500D PM

Mount Gilead TIA
I-02 Appin Road / Kellerman Drive / Copperfield Drive
Ultimate year 2026 with 1500 dwellings development PM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	41	5.1	0.722	11.3	LOS A	9.2	67.4	0.83	0.77	50.8
2	T	737	5.9	0.722	11.2	LOS A	9.2	67.4	0.83	0.76	51.1
3	R	21	0.0	0.722	15.7	LOS B	9.2	67.4	0.83	0.82	47.8
Approach		799	5.7	0.722	11.3	LOS A	9.2	67.4	0.83	0.76	51.0
East: Kellerman Drive (E)											
4	L	19	0.0	0.952	116.7	LOS F	17.9	131.8	1.00	1.74	15.7
5	T	144	5.8	0.952	114.6	LOS F	17.9	131.8	1.00	1.73	14.4
6	R	76	8.3	0.952	121.4	LOS F	17.9	131.8	1.00	1.73	15.1
Approach		239	6.2	0.952	116.9	LOS F	17.9	131.8	1.00	1.73	14.8
North: Appin Road (N)											
7	L	84	1.3	1.787	721.5	LOS F	594.3	4225.9	1.00	8.31	2.9
8	T	1917	1.8	1.787	721.8	LOS F	594.3	4225.9	1.00	8.31	3.3
9	R	52	6.1	1.787	726.1	LOS F	594.3	4225.9	1.00	8.28	3.0
Approach		2053	1.8	1.787	721.9	LOS F	594.3	4225.9	1.00	8.31	3.2
West: Copperfield Drive (W)											
10	L	51	0.0	0.542	17.1	LOS B	4.9	35.5	0.98	1.07	41.9
11	T	78	5.4	0.542	15.5	LOS B	4.9	35.5	0.98	1.07	41.2
12	R	175	2.4	0.542	22.8	LOS B	4.9	35.5	0.98	1.08	41.0
Approach		303	2.8	0.542	20.0	LOS B	4.9	35.5	0.98	1.07	41.2
All Vehicles		3394	3.1	1.787	449.3	LOS F	594.3	4225.9	0.96	5.42	5.0

I-03 Intersection of Appin Road, Kellerman Drive and Fitzgibbon Lane

MOVEMENT SUMMARY

Site: I-03 2026 1500D AM

Mount Gilead TIA
I-03 Appin Road / Kellerman Drive / Fitzgibbon Lane
Ultimate year 2026 with 1500 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	83	1.3	1.000 [3]	47.3	LOS D	21.7	155.6	1.00	0.88	31.5
2	T	1931	3.3	1.725	588.0	LOS F	391.5	2819.0	1.00	2.73	4.0
3	R	3	0.0	0.040	82.0	LOS F	0.2	1.5	0.98	0.63	19.8
Approach		2017	3.2	1.725	564.9	LOS F	391.5	2819.0	1.00	2.65	4.1
East: Kellerman Drive (E)											
4	L	6	0.0	0.717	58.5	LOS E	5.3	37.1	0.83	0.89	19.5
5	T	135	0.0	1.829	335.2	LOS F	55.4	389.7	0.89	1.26	4.0
6	R	162	0.6	1.829	842.3	LOS F	55.4	389.7	1.00	2.19	2.0
Approach		303	0.3	1.829	600.6	LOS F	55.4	389.7	0.95	1.75	2.6
North: Appin Road (N)											
7	L	82	1.3	0.370	26.8	LOS B	14.1	105.5	0.59	0.97	38.9
8	T	840	9.5	0.518	19.1	LOS B	22.2	164.3	0.64	0.57	41.5
9	R	207	0.3	1.304	331.7	LOS F	30.2	212.2	1.00	1.39	6.0
Approach		1129	5.8	1.304	77.0	LOS F	30.2	212.2	0.70	0.75	20.4
West: Fitzgibbon Lane (W)											
10	L	553	1.3	0.701	44.0	LOS D	30.5	215.8	0.88	0.87	24.4
11	T	126	2.5	0.720	52.4	LOS D	9.8	70.4	0.90	0.78	18.1
12	R	35	6.1	0.720	61.4	LOS E	9.8	70.4	0.90	0.87	18.9
Approach		714	1.8	0.720	46.3	LOS D	30.5	215.8	0.88	0.86	22.8
All Vehicles		4163	3.5	1.829	346.2	LOS F	391.5	2819.0	0.90	1.76	5.9

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-03 2026 1500D PM

Mount Gilead TIA
I-03 Appin Road / Kellerman Drive / Fitzgibbon Lane
Ultimate year 2026 with 1500 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	29	3.6	0.852	64.5	LOS E	20.2	147.4	0.89	1.03	25.2
2	T	774	5.4	0.852	54.9	LOS D	34.1	250.1	0.96	0.92	27.4
3	R	2	0.0	0.026	81.6	LOS F	0.1	1.0	0.98	0.61	19.9
Approach		805	5.4	0.852	55.3	LOS D	34.1	250.1	0.96	0.92	27.3
East: Kellerman Drive (E)											
4	L	7	0.0	0.353	63.8	LOS E	2.4	16.6	0.90	0.76	18.2
5	T	94	0.0	0.900	73.5	LOS F	10.8	75.5	0.96	0.89	14.2
6	R	75	0.0	0.900	92.6	LOS F	10.8	75.5	1.00	1.02	14.6
Approach		176	0.0	0.900	81.2	LOS F	10.8	75.5	0.98	0.94	14.5
North: Appin Road (N)											
7	L	185	1.1	0.697	25.1	LOS B	37.0	262.7	0.69	0.98	40.5
8	T	1925	2.0	0.977	42.6	LOS D	106.3	756.8	0.89	0.95	29.1
9	R	472	0.4	0.849	50.1	LOS D	25.7	180.7	0.94	0.94	26.6
Approach		2582	1.6	0.977	42.7	LOS D	106.3	756.8	0.88	0.95	29.2
West: Fitzgibbon Lane (W)											
10	L	279	1.1	0.698	27.9	LOS B	9.0	63.7	0.66	0.80	31.6
11	T	123	2.6	0.933	87.2	LOS F	16.0	114.9	1.00	1.08	12.5
12	R	72	2.9	0.933	96.0	LOS F	16.0	114.9	1.00	1.08	13.3
Approach		474	1.8	0.933	53.6	LOS D	16.0	114.9	0.80	0.91	20.3
All Vehicles		4037	2.3	0.977	48.2	LOS D	106.3	756.8	0.89	0.94	26.9

I-04 Intersection of Appin Road and Woodland Road

MOVEMENT SUMMARY

Site: I-04 2026 1500D AM

Mount Gilead TIA
I-04 Appin Road / Woodland Road
Ultimate year 2026 with 1500 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	2496	3.1	0.923	10.7	LOS A	43.7	314.1	0.48	0.49	56.5
3	R	136	2.3	0.370	45.6	LOS D	6.6	46.9	0.76	0.78	29.7
Approach		2632	3.0	0.923	12.5	LOS A	43.7	314.1	0.50	0.51	54.3
East: Woodland Road (E)											
4	L	120	1.8	0.911	66.7	LOS E	10.3	73.4	0.89	0.87	14.1
6	R	374	3.4	0.911	82.7	LOS F	26.0	187.1	0.99	0.97	13.2
Approach		494	3.0	0.911	78.8	LOS F	26.0	187.1	0.96	0.95	13.4
North: Appin Road (N)											
7	L	148	4.3	0.232	24.9	LOS B	4.8	34.6	0.51	0.76	38.5
8	T	1052	5.5	0.889	56.3	LOS D	36.7	268.8	0.99	0.98	24.8
Approach		1200	5.4	0.889	52.4	LOS D	36.7	268.8	0.93	0.95	25.9
All Vehicles		4325	3.7	0.923	31.1	LOS C	43.7	314.1	0.67	0.68	36.0

MOVEMENT SUMMARY

Site: I-04 2026 1500D PM

Mount Gilead TIA
I-04 Appin Road / Woodland Road
Ultimate year 2026 with 1500 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	1073	4.7	0.358	1.2	LOS A	2.7	19.6	0.08	0.07	76.1
3	R	115	0.9	0.871	90.3	LOS F	8.7	61.6	1.00	0.91	18.4
Approach		1187	4.3	0.871	9.8	LOS A	8.7	61.6	0.17	0.16	60.0
East: Woodland Road (E)											
4	L	151	0.7	0.944	68.8	LOS E	10.4	73.4	0.93	0.84	13.8
6	R	206	4.1	0.944	97.3	LOS F	16.2	117.1	1.00	1.02	11.6
Approach		357	2.7	0.944	85.3	LOS F	16.2	117.1	0.97	0.95	12.3
North: Appin Road (N)											
7	L	386	1.9	0.364	12.1	LOS A	5.8	41.2	0.24	0.74	49.7
8	T	2457	1.6	0.958	27.5	LOS B	78.6	557.5	0.83	0.88	36.2
Approach		2843	1.6	0.958	25.4	LOS B	78.6	557.5	0.75	0.86	37.5
All Vehicles		4387	2.4	0.958	26.1	LOS B	78.6	557.5	0.61	0.68	38.1

I-05 Intersection of Appin Road and St Johns Road

MOVEMENT SUMMARY

Site: I-05 2026 1500D AM

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Ultimate year 2026 with 1500 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	2476	3.1	0.906	6.5	LOS A	33.1	237.6	0.39	0.39	63.1
3	R	426	2.2	0.953	54.9	LOS D	24.0	171.4	0.95	0.88	26.4
Approach		2902	2.9	0.953	13.6	LOS A	33.1	237.6	0.48	0.46	53.4
East: St Johns Road (E)											
4	L	258	2.4	0.953	45.0	LOS D	14.9	106.1	0.97	0.88	25.5
6	R	413	1.0	0.953	87.4	LOS F	28.8	203.7	0.99	1.02	16.3
Approach		671	1.6	0.953	71.1	LOS F	28.8	203.7	0.99	0.97	18.9
North: Appin Road (N)											
7	L	237	3.1	0.130	11.2	X	X	X	X	0.69	58.9
8	T	924	6.9	0.937	72.2	LOS F	36.2	268.8	1.00	1.04	23.1
Approach		1161	6.2	0.937	59.7	LOS E	36.2	268.8	0.80	0.97	26.3
All Vehicles		4734	3.5	0.953	33.0	LOS C	36.2	268.8	0.63	0.66	36.3

MOVEMENT SUMMARY

Site: I-05 2026 1500D PM

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Ultimate year 2026 with 1500 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	1116	3.7	0.380	1.4	LOS A	2.9	20.9	0.08	0.08	75.7
3	R	183	3.4	1.011	128.1	LOS F	17.5	125.8	1.00	1.08	14.0
Approach		1299	3.6	1.011	19.2	LOS B	17.5	125.8	0.21	0.22	48.7
East: St Johns Road (E)											
4	L	280	1.1	1.000 [3]	48.8	LOS D	15.0	106.3	0.88	0.81	24.3
6	R	271	0.4	1.080	174.4	LOS F	31.2	218.9	1.00	1.28	9.4
Approach		552	0.8	1.080	110.6	LOS F	31.2	218.9	0.94	1.03	13.7
North: Appin Road (N)											
7	L	371	1.7	0.202	11.2	X	X	X	X	0.69	58.8
8	T	2575	1.8	1.075	111.4	LOS F	147.3	1047.1	1.00	1.44	16.9
Approach		2945	1.8	1.075	98.8	LOS F	147.3	1047.1	0.87	1.35	18.6
All Vehicles		4796	2.2	1.080	78.6	LOS F	147.3	1047.1	0.70	1.00	21.6

I-06 Intersection of Appin Road and Therry Road

MOVEMENT SUMMARY

Site: I-06 2026 1500D AM

Mount Gilead TIA
I-06 Appin Road / Therry Road
Ultimate year 2026 with 1500 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	751	0.7	0.406	11.1	X	X	X	X	0.69	58.8
2	T	2161	3.4	1.030	85.1	LOS F	109.2	787.0	1.00	1.28	20.6
Approach		2912	2.7	1.030	66.0	LOS E	109.2	787.0	0.74	1.13	24.7
North: Appin Road (N)											
8	T	854	7.1	0.300	1.3	LOS A	2.1	15.8	0.08	0.07	75.8
9	R	304	1.0	1.002	121.1	LOS F	28.9	204.0	1.00	1.09	14.8
Approach		1158	5.5	1.002	32.7	LOS C	28.9	204.0	0.32	0.34	38.1
West: Therry Road (W)											
10	L	469	1.8	0.256	7.6	X	X	X	X	0.60	47.4
12	R	320	2.3	0.613	71.1	LOS F	10.5	74.8	0.99	0.81	19.2
Approach		789	2.0	0.613	33.4	LOS C	10.5	74.8	0.40	0.69	28.9
All Vehicles		4859	3.2	1.030	52.8	LOS D	109.2	787.0	0.59	0.87	27.6

MOVEMENT SUMMARY

Site: I-06 2026 1500D PM

Mount Gilead TIA
I-06 Appin Road / Therry Road
Ultimate year 2026 with 1500 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	386	1.6	0.210	11.1	X	X	X	X	0.69	58.8
2	T	1022	4.3	0.898	59.6	LOS E	36.5	264.9	1.00	0.98	26.1
Approach		1408	3.6	0.898	46.3	LOS D	36.5	264.9	0.73	0.90	30.8
North: Appin Road (N)											
8	T	2240	2.2	0.841	4.8	LOS A	25.6	182.6	0.37	0.35	66.1
9	R	429	1.0	0.896	64.4	LOS E	28.9	204.0	0.92	0.92	23.8
Approach		2669	2.0	0.896	14.4	LOS A	28.9	204.0	0.46	0.44	52.5
West: Therry Road (W)											
10	L	404	1.0	0.219	7.6	X	X	X	X	0.60	47.4
12	R	689	0.6	0.870	76.0	LOS F	25.4	178.5	1.00	0.95	18.3
Approach		1094	0.8	0.870	50.7	LOS D	25.4	178.5	0.63	0.82	23.1
All Vehicles		5172	2.2	0.898	30.8	LOS C	36.5	264.9	0.57	0.65	37.0

I-07 Intersection of Appin Road, Narellan Road, Oxley Street and The Parkway

MOVEMENT SUMMARY

Site: I-07 2026 1500D AM

Mount Gilead TIA
I-07 Appin Road / Oxley Street / Narellan Road / The Parkway
Ultimate year 2026 with 1500 dwellings development AM
Signals - Fixed Time Cycle Time = 150 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	728	6.8	0.411	7.8	X	X	X	X	0.60	49.7
2	T	1878	2.1	1.144	193.3	LOS F	130.1	927.2	1.00	1.65	9.4
3	R	36	0.0	0.093	26.9	LOS B	1.2	8.1	0.68	0.72	34.6
Approach		2642	3.3	1.144	139.9	LOS F	130.1	927.2	0.72	1.35	12.3
East: The Parkway (E)											
4	L	25	4.2	0.014	7.7	X	X	X	X	0.60	37.8
5	T	316	1.1	1.119	200.5	LOS F	41.3	292.1	1.00	1.49	3.4
6	R	207	2.6	1.000 [3]	75.5	LOS F	14.8	106.1	1.00	0.82	8.6
Approach		547	1.9	1.119	144.5	LOS F	41.3	292.1	0.95	1.20	4.7
North: Oxley Street (N)											
7	L	135	4.7	0.075	7.7	X	X	X	X	0.60	46.7
8	T	873	3.0	0.536	33.9	LOS C	23.4	168.2	0.80	0.71	27.4
9	R	216	1.9	1.108	201.6	LOS F	27.5	195.6	1.00	1.26	6.9
Approach		1224	2.9	1.108	60.6	LOS E	27.5	195.6	0.75	0.79	19.3
West: Narellan Road (W)											
10	L	311	1.7	0.624	34.2	LOS C	12.6	89.2	0.63	0.76	27.3
11	T	261	0.4	1.061	148.8	LOS F	36.1	257.8	1.00	1.32	9.3
12	R	356	10.1	1.061	159.4	LOS F	36.1	257.8	1.00	1.20	10.3
Approach		927	4.5	1.061	114.5	LOS F	36.1	257.8	0.88	1.09	12.4
All Vehicles		5341	3.3	1.144	117.8	LOS F	130.1	927.2	0.78	1.16	12.5

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-07 2026 1500D PM

Mount Gilead TIA
I-07 Appin Road / Oxley Street / Narellan Road / The Parkway
Ultimate year 2026 with 1500 dwellings development PM
Signals - Fixed Time Cycle Time = 150 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	413	5.9	0.231	7.8	X	X	X	X	0.60	49.8
2	T	986	2.5	0.917	69.1	LOS E	39.0	278.6	1.00	1.02	20.0
3	R	72	0.0	1.369	431.5	LOS F	13.9	97.2	1.00	1.36	4.7
Approach		1471	3.3	1.369	69.7	LOS E	39.0	278.6	0.72	0.92	20.2
East: The Parkway (E)											
4	L	28	3.7	0.016	7.7	X	X	X	X	0.60	37.8
5	T	206	2.6	1.008	121.2	LOS F	20.6	147.4	1.00	1.19	5.4
6	R	178	2.4	0.913	95.1	LOS F	14.9	106.1	1.00	0.98	7.0
Approach		413	2.6	1.008	102.1	LOS F	20.6	147.4	0.93	1.06	6.4
North: Oxley Street (N)											
7	L	404	2.1	0.221	7.6	X	X	X	X	0.60	46.7
8	T	1899	1.7	1.026	107.8	LOS F	103.3	733.6	1.00	1.28	13.1
9	R	296	0.7	1.000 [3]	112.8	LOS F	27.8	195.8	1.00	1.04	11.3
Approach		2599	1.6	1.026	92.8	LOS F	103.3	733.6	0.84	1.15	14.3
West: Narellan Road (W)											
10	L	211	1.5	0.265	15.4	LOS B	3.6	25.4	0.27	0.67	39.0
11	T	372	0.3	1.029	117.5	LOS F	60.4	426.4	1.00	1.23	11.2
12	R	755	2.2	1.029	127.3	LOS F	60.4	426.4	1.00	1.15	12.4
Approach		1337	1.6	1.029	107.0	LOS F	60.4	426.4	0.89	1.10	13.3
All Vehicles		5819	2.1	1.369	90.9	LOS F	103.3	733.6	0.83	1.07	14.8

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-07 2026 1500D AM RMS Upgrade

Mount Gilead TIA
I-07 Appin Road / Oxley Street / Narellan Road / The Parkway
Ultimate year 2026 with 1500 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	728	6.8	0.932	25.3	LOS B	19.8	146.9	0.63	0.89	35.7
2	T	1878	2.1	1.068	123.9	LOS F	105.0	748.3	1.00	1.42	13.3
3	R	36	0.0	0.084	21.1	LOS B	0.9	6.4	0.60	0.70	38.1
Approach		2642	3.3	1.068	95.3	LOS F	105.0	748.3	0.89	1.27	16.3
East: The Parkway (E)											
4	L	25	4.2	0.014	7.7	X	X	X	X	0.60	37.8
5	T	353	1.1	0.994	108.3	LOS F	16.2	114.6	1.00	1.15	5.9
6	R	169	2.6	1.000 [3]	110.5	LOS F	14.8	106.1	1.00	1.05	6.1
Approach		547	1.9	1.000	104.3	LOS F	16.2	114.6	0.95	1.10	6.3
North: Oxley Street (N)											
7	L	135	4.7	0.171	9.9	LOS A	1.6	11.3	0.23	0.65	43.9
8	T	833	3.0	0.477	27.9	LOS B	19.5	139.6	0.75	0.66	30.3
9	R	260	1.9	1.047	148.7	LOS F	27.5	195.8	1.00	1.20	9.0
Approach		1228	2.9	1.047	51.5	LOS D	27.5	195.8	0.74	0.77	21.5
West: Narellan Road (W)											
10	L	311	1.7	0.607	34.5	LOS C	12.2	86.8	0.66	0.77	27.1
11	T	261	0.4	0.792	66.3	LOS E	15.1	105.9	1.00	0.89	17.1
12	R	356	10.1	0.792	76.4	LOS F	13.8	103.5	1.00	0.88	18.3
Approach		927	4.5	0.792	59.5	LOS E	15.1	105.9	0.89	0.84	20.0
All Vehicles		5345	3.3	1.068	80.0	LOS F	105.0	748.3	0.86	1.06	16.6

MOVEMENT SUMMARY

Site: I-07 2026 1500D PM RMS Upgrade

Mount Gilead TIA
I-07 Appin Road / Oxley Street / Narellan Road / The Parkway
Ultimate year 2026 with 1500 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	413	5.9	0.462	13.3	LOS A	8.8	64.8	0.38	0.70	44.1
2	T	983	2.5	0.677	35.5	LOS C	25.0	178.7	0.81	0.72	29.2
3	R	75	0.0	1.106	218.8	LOS F	10.2	71.4	1.00	1.29	8.6
Approach		1471	3.3	1.106	38.6	LOS C	25.0	178.7	0.70	0.74	28.5
East: The Parkway (E)											
4	L	28	3.7	0.016	7.7	X	X	X	X	0.60	37.8
5	T	215	2.6	0.604	68.1	LOS E	7.3	52.3	1.00	0.79	8.8
6	R	170	2.4	1.000 [3]	110.5	LOS F	14.9	106.1	1.00	1.05	6.1
Approach		413	2.6	1.000	81.4	LOS F	14.9	106.1	0.93	0.89	7.8
North: Oxley Street (N)											
7	L	404	2.1	0.614	13.0	LOS A	8.2	58.5	0.38	0.70	40.3
8	T	1903	1.7	0.853	26.2	LOS B	53.4	379.0	0.91	0.84	30.6
9	R	292	0.7	1.004	120.4	LOS F	27.8	195.8	1.00	1.13	10.8
Approach		2599	1.6	1.004	34.7	LOS C	53.4	379.0	0.83	0.85	26.6
West: Narellan Road (W)											
10	L	211	1.5	0.273	12.1	LOS A	2.4	17.3	0.20	0.65	42.1
11	T	372	0.3	0.955	81.6	LOS F	30.3	212.6	1.00	1.09	14.8
12	R	755	2.2	1.032	131.2	LOS F	37.7	269.3	1.00	1.14	12.0
Approach		1337	1.6	1.032	98.7	LOS F	37.7	269.3	0.87	1.05	14.2
All Vehicles		5819	2.1	1.106	53.7	LOS D	53.4	379.0	0.82	0.87	21.3

I-08 Intersection of Narellan Road and Hurley Street

MOVEMENT SUMMARY

Site: I-08 2026 1500D AM

Mount Gilead TIA
I-08 Narellan Road / Kellicar Road
Ultimate year 2026 with 1500 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	171	4.3	0.932	69.2	LOS E	46.1	335.0	1.00	1.03	17.8
2	T	1041	4.6	0.932	61.2	LOS E	46.1	335.0	1.00	1.04	18.0
3	R	147	2.1	0.470	64.9	LOS E	8.8	62.8	0.91	0.80	18.2
Approach		1359	4.3	0.932	62.6	LOS E	46.1	335.0	0.99	1.01	18.0
East: Kellicar Road (E)											
4	L	28	0.0	0.769	69.1	LOS E	17.1	125.5	0.99	0.89	10.4
5	T	488	6.3	0.769	61.2	LOS E	17.1	125.5	0.99	0.87	10.6
6	R	403	6.0	0.932	90.4	LOS F	15.9	117.0	1.00	0.99	8.1
Approach		920	5.9	0.932	74.3	LOS F	17.1	125.5	0.99	0.92	9.3
North: Narellan Road (N)											
7	L	1061	2.3	1.000 [3]	16.3	LOS B	31.2	222.8	0.70	0.97	41.7
8	T	841	4.4	0.648	39.5	LOS C	22.0	160.1	0.83	0.73	27.7
9	R	309	2.4	0.989	72.8	LOS F	21.7	155.0	1.00	0.86	20.1
Approach		2212	3.1	1.000	33.0	LOS C	31.2	222.8	0.79	0.86	31.1
West: Kellicar Road (W)											
10	L	127	5.8	0.270	34.9	LOS C	4.5	33.1	0.56	0.75	20.2
11	T	655	4.7	0.969	88.4	LOS F	27.6	201.1	1.00	1.12	9.7
12	R	147	2.9	0.667	73.6	LOS F	9.8	70.1	0.99	0.82	11.7
Approach		929	4.5	0.969	78.7	LOS F	27.6	201.1	0.94	1.02	10.8
All Vehicles		5420	4.1	1.000	55.3	LOS D	46.1	335.0	0.90	0.94	19.4

MOVEMENT SUMMARY

Site: I-08 2026 1500D PM

Mount Gilead TIA
I-08 Narellan Road / Kellicar Road
Ultimate year 2026 with 1500 dwellings development PM
Signals - Fixed Time Cycle Time = 135 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	193	0.0	1.067	148.9	LOS F	59.8	427.0	1.00	1.37	9.6
2	T	902	3.6	1.067	140.8	LOS F	59.8	427.0	1.00	1.42	9.7
3	R	161	0.0	0.732	72.9	LOS F	10.6	74.1	1.00	0.84	16.7
Approach		1256	2.6	1.067	133.4	LOS F	59.8	427.0	1.00	1.34	10.2
East: Kellicar Road (E)											
4	L	48	0.0	1.103	179.6	LOS F	56.8	411.1	1.00	1.56	4.4
5	T	914	4.5	1.103	171.4	LOS F	56.8	411.1	1.00	1.56	4.4
6	R	763	2.1	1.083	165.1	LOS F	42.4	302.3	1.00	1.25	4.7
Approach		1725	3.3	1.103	168.8	LOS F	56.8	411.1	1.00	1.42	4.5
North: Narellan Road (N)											
7	L	579	2.4	0.521	11.1	LOS A	6.1	43.3	0.20	0.69	46.2
8	T	1147	1.8	1.120	183.7	LOS F	70.7	502.3	1.00	1.62	9.7
9	R	225	1.7	1.036	132.8	LOS F	21.7	154.4	1.00	1.15	13.0
Approach		1952	1.9	1.120	126.6	LOS F	70.7	502.3	0.76	1.29	13.3
West: Kellicar Road (W)											
10	L	277	0.8	0.565	36.3	LOS C	10.7	75.6	0.64	0.78	19.6
11	T	603	5.6	0.698	51.7	LOS D	17.6	129.3	0.94	0.80	14.7
12	R	243	0.4	0.682	63.3	LOS E	14.6	102.8	0.96	0.83	13.2
Approach		1123	3.3	0.698	50.4	LOS D	17.6	129.3	0.87	0.80	15.2
All Vehicles		6056	2.7	1.120	125.9	LOS F	70.7	502.3	0.90	1.25	9.8

I-09 Intersection of Narellan Road, Gilchrist Drive and Blaxland Road

MOVEMENT SUMMARY

Site: I-09 2026 1500D AM

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Ultimate year 2026 with 1500 dwellings development AM
Signals - Fixed Time Cycle Time = 150 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	14	53.8	0.036	20.9	LOS B	0.4	3.9	0.44	0.65	39.3
2	T	1321	5.6	1.229	283.7	LOS F	106.1	778.6	1.00	1.88	6.7
3	R	259	2.3	1.061	164.3	LOS F	29.7	212.0	1.00	1.23	11.0
Approach		1594	5.2	1.229	262.1	LOS F	106.1	778.6	1.00	1.76	7.2
East: Blaxland Road (E)											
4	L	402	3.1	1.000 [3]	58.3	LOS E	25.0	179.5	1.00	0.87	23.0
5	T	716	2.2	1.178	246.3	LOS F	52.3	373.9	1.00	1.62	7.6
6	R	603	10.0	1.204	266.5	LOS F	47.2	358.8	1.00	1.44	7.3
Approach		1720	5.3	1.204	209.5	LOS F	52.3	373.9	1.00	1.38	8.8
North: Narellan Road (N)											
7	L	756	7.8	0.933	23.1	LOS B	21.9	163.3	0.71	0.90	37.0
8	T	1705	3.9	1.124	180.7	LOS F	113.8	823.1	1.00	1.58	9.9
9	R	801	4.8	1.159	135.4	LOS F	48.2	350.9	1.00	1.17	12.8
Approach		3262	5.0	1.159	133.1	LOS F	113.8	823.1	0.93	1.32	12.8
West: Gilchrist Drive (W)											
10	L	811	3.5	0.818	39.0	LOS C	16.8	121.3	0.82	0.91	29.2
11	T	471	1.3	0.761	67.7	LOS E	17.1	121.1	1.00	0.88	20.3
12	R	21	0.0	0.152	67.2	LOS E	1.3	9.3	0.89	0.70	21.2
Approach		1302	2.7	0.818	49.8	LOS D	17.1	121.3	0.88	0.89	25.1
All Vehicles		7878	4.7	1.229	162.1	LOS F	113.8	823.1	0.95	1.35	10.9

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-09 2026 1500D PM

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Ultimate year 2026 with 1500 dwellings development PM
Signals - Fixed Time Cycle Time = 145 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	5	0.0	0.007	17.4	LOS B	0.1	0.9	0.40	0.63	40.7
2	T	1708	2.8	1.352	386.0	LOS F	159.8	1145.7	1.00	2.26	5.1
3	R	259	1.3	1.074	171.4	LOS F	30.0	212.1	1.00	1.27	10.6
Approach		1973	2.5	1.352	356.8	LOS F	159.8	1145.7	1.00	2.12	5.5
East: Blaxland Road (E)											
4	L	504	2.9	0.837	47.9	LOS D	28.5	204.2	0.99	0.90	25.9
5	T	1039	2.3	1.376	417.4	LOS F	100.4	716.6	1.00	2.10	4.8
6	R	595	2.4	1.264	314.4	LOS F	50.2	359.0	1.00	1.56	6.3
Approach		2138	2.5	1.376	301.6	LOS F	100.4	716.6	1.00	1.67	6.4
North: Narellan Road (N)											
7	L	542	3.1	0.714	21.6	LOS B	18.1	130.4	0.57	0.78	37.9
8	T	1526	3.0	1.222	272.1	LOS F	120.8	867.3	1.00	1.84	7.0
9	R	536	3.3	1.253	213.7	LOS F	48.7	350.9	1.00	1.26	8.8
Approach		2604	3.2	1.253	208.0	LOS F	120.8	867.3	0.91	1.50	8.9
West: Gilchrist Drive (W)											
10	L	764	3.1	1.000 [3]	50.2	LOS D	22.7	163.2	1.00	0.87	25.5
11	T	732	3.2	0.973	97.1	LOS F	34.0	244.7	1.00	1.16	15.8
12	R	77	0.0	0.556	70.2	LOS E	5.0	35.0	0.95	0.76	20.6
Approach		1573	2.9	1.000	73.0	LOS F	34.0	244.7	1.00	1.00	19.7
All Vehicles		8287	2.8	1.376	241.9	LOS F	159.8	1145.7	0.97	1.60	7.8

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-09 2026 1500D AM RMS Upgrade

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Ultimate year 2026 with 1500 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	14	53.8	0.037	17.8	LOS B	0.3	3.4	0.38	0.64	41.5
2	T	1176	5.6	0.586	34.4	LOS C	19.7	144.5	0.75	0.66	29.7
3	R	404	2.3	0.738	71.9	LOS F	13.8	98.3	1.00	0.86	20.3
Approach		1594	5.2	0.738	43.8	LOS D	19.7	144.5	0.81	0.71	26.6
East: Blaxland Road (E)											
4	L	439	3.1	1.000 [3]	52.8	LOS D	25.0	179.5	1.00	0.87	24.5
5	T	702	2.2	1.079	158.2	LOS F	39.5	283.8	1.00	1.41	11.0
6	R	579	10.0	1.250	301.0	LOS F	47.2	359.0	1.00	1.56	6.5
Approach		1720	5.3	1.250	179.3	LOS F	47.2	359.0	1.00	1.32	10.1
North: Narellan Road (N)											
7	L	756	7.8	0.652	21.6	LOS B	22.2	165.8	0.65	0.88	38.0
8	T	1834	3.9	1.308	341.6	LOS F	161.5	1167.7	1.00	2.17	5.7
9	R	672	4.8	1.247	314.0	LOS F	53.8	391.7	1.00	1.64	6.3
Approach		3262	5.0	1.308	261.8	LOS F	161.5	1167.7	0.92	1.76	7.3
West: Gilchrist Drive (W)											
10	L	731	3.5	1.000 [3]	52.2	LOS D	22.6	163.2	1.00	0.86	24.9
11	T	550	1.3	0.838	67.2	LOS E	19.9	140.8	1.00	0.95	20.3
12	R	21	0.0	0.145	64.7	LOS E	1.3	8.8	0.91	0.70	21.8
Approach		1302	2.7	1.000	58.7	LOS E	22.6	163.2	1.00	0.90	22.7
All Vehicles		7878	4.7	1.308	166.1	LOS F	161.5	1167.7	0.93	1.31	10.7

MOVEMENT SUMMARY

Site: I-09 2026 1500D PM RMS Upgrade

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Ultimate year 2026 with 1500 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	5	0.0	0.011	21.2	LOS B	0.2	1.1	0.47	0.63	38.0
2	T	1572	2.8	1.141	160.9	LOS F	71.6	513.0	1.00	1.46	10.9
3	R	396	1.3	1.076	170.3	LOS F	22.2	157.5	1.00	1.28	10.7
Approach		1973	2.5	1.141	162.4	LOS F	71.6	513.0	1.00	1.42	10.8
East: Blaxland Road (E)											
4	L	504	2.9	0.946	46.2	LOS D	26.5	190.4	1.00	0.90	26.4
5	T	876	2.3	1.196	255.5	LOS F	64.2	458.4	1.00	1.75	7.4
6	R	757	2.4	1.133	201.6	LOS F	50.2	359.0	1.00	1.35	9.2
Approach		2138	2.5	1.196	187.1	LOS F	64.2	458.4	1.00	1.41	9.7
North: Narellan Road (N)											
7	L	542	3.1	0.450	17.6	LOS B	15.9	114.3	0.52	0.74	40.6
8	T	1238	3.0	1.058	101.0	LOS F	50.4	362.0	1.00	1.25	15.5
9	R	824	3.3	1.136	216.2	LOS F	54.4	391.7	1.00	1.42	8.7
Approach		2604	3.2	1.136	120.1	LOS F	54.4	391.7	0.90	1.20	13.9
West: Gilchrist Drive (W)											
10	L	809	3.1	1.000 [3]	47.2	LOS D	22.7	163.2	1.00	0.87	26.4
11	T	687	3.2	0.945	84.5	LOS F	29.0	208.8	1.00	1.11	17.4
12	R	77	0.0	0.501	59.8	LOS E	4.5	31.3	0.89	0.75	22.9
Approach		1573	2.9	1.000	64.1	LOS E	29.0	208.8	0.99	0.97	21.4
All Vehicles		8287	2.8	1.196	136.8	LOS F	71.6	513.0	0.97	1.26	12.5

I-10 Intersection of Oxley Street and Camden Road

MOVEMENT SUMMARY

Site: I-10 2026 1500D AM

Mount Gilead TIA
I-10 Oxley Street / Camden Road
Ultimate year 2026 with 1500 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Oxley Street (S)											
1	L	260	1.6	0.834	12.7	LOS A	26.4	187.9	0.36	0.91	41.7
2	T	2161	2.1	0.834	3.7	LOS A	26.4	187.9	0.31	0.30	50.5
Approach		2421	2.1	0.834	4.6	LOS A	26.4	187.9	0.31	0.36	49.4
North: Oxley Street (N)											
8	T	1219	3.0	0.349	0.3	LOS A	1.6	11.5	0.08	0.05	56.8
9	R	87	0.0	0.823	86.9	LOS F	6.5	45.7	1.00	0.90	10.0
Approach		1306	2.8	0.823	6.1	LOS A	6.5	45.7	0.14	0.10	43.3
West: Camden Road (W)											
10	L	51	4.2	0.202	11.2	LOS A	0.8	5.9	0.29	0.66	31.6
12	R	77	2.7	0.738	84.4	LOS F	5.6	40.1	1.00	0.84	7.3
Approach		127	3.3	0.738	55.4	LOS D	5.6	40.1	0.72	0.77	10.7
All Vehicles		3855	2.4	0.834	6.8	LOS A	26.4	187.9	0.27	0.29	44.9

MOVEMENT SUMMARY

Site: I-10 2026 1500D PM

Mount Gilead TIA
I-10 Oxley Street / Camden Road
Ultimate year 2026 with 1500 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Oxley Street (S)											
1	L	193	0.0	0.681	27.4	LOS B	27.6	196.3	0.66	0.90	30.4
2	T	1189	2.6	0.681	19.0	LOS B	27.6	196.3	0.63	0.58	32.9
Approach		1382	2.2	0.681	20.1	LOS B	27.6	196.3	0.64	0.62	32.6
North: Oxley Street (N)											
8	T	2321	2.0	0.659	0.5	LOS A	5.3	37.5	0.15	0.08	54.5
9	R	76	1.4	0.641	81.3	LOS F	5.4	38.0	1.00	0.80	10.6
Approach		2397	1.9	0.659	3.0	LOS A	5.4	38.0	0.17	0.10	48.2
West: Camden Road (W)											
10	L	111	2.9	0.309	13.3	LOS A	2.3	16.3	0.36	0.69	29.1
12	R	346	0.0	0.669	56.3	LOS D	21.0	146.7	0.95	0.85	10.3
Approach		457	0.7	0.669	45.9	LOS D	21.0	146.7	0.80	0.81	12.3
All Vehicles		4236	1.9	0.681	13.2	LOS A	27.6	196.3	0.39	0.35	34.5

I-11 Intersection of Therry Road, Central Road and Woodhouse Drive

MOVEMENT SUMMARY

Site: I-11 2026 1500D AM

Mount Gilead TIA
I-11 Therry Road / Central Road / Woodhouse Drive
Ultimate year 2026 with 1500 dwellings development AM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Woodhouse Drive (S)											
1	L	327	2.3	0.434	9.4	LOS A	2.4	17.2	0.70	0.85	39.4
2	T	343	0.0	0.675	9.1	LOS A	5.8	40.8	0.81	0.92	38.2
3	R	329	1.0	0.675	16.0	LOS B	5.8	40.8	0.81	1.06	35.4
Approach		1000	1.1	0.675	11.5	LOS A	5.8	40.8	0.77	0.94	37.4
East: Therry Road (E)											
4	L	224	0.5	0.413	7.3	LOS A	2.8	19.6	0.60	0.64	45.8
5	T	461	0.9	0.413	6.2	LOS A	2.8	19.6	0.61	0.56	45.6
6	R	218	0.0	0.413	13.1	LOS A	2.7	18.8	0.61	0.82	42.7
Approach		903	0.6	0.413	8.1	LOS A	2.8	19.6	0.61	0.64	44.9
North: Central Road (N)											
7	L	93	8.0	0.111	8.5	LOS A	0.6	4.4	0.67	0.72	34.0
8	T	11	20.0	0.132	8.2	LOS A	0.6	4.9	0.68	0.70	33.1
9	R	77	9.6	0.132	14.9	LOS B	0.6	4.9	0.68	0.86	31.1
Approach		180	9.4	0.132	11.2	LOS A	0.6	4.9	0.68	0.78	32.5
West: Therry Road (W)											
10	L	195	3.8	0.581	14.5	LOS A	5.8	41.5	0.97	1.06	43.6
11	T	283	1.9	0.581	13.5	LOS A	5.8	41.5	0.96	1.06	43.2
12	R	285	1.1	0.581	21.4	LOS B	5.3	37.2	0.95	1.09	39.1
Approach		763	2.1	0.581	16.7	LOS B	5.8	41.5	0.96	1.07	41.6
All Vehicles		2846	1.7	0.675	11.8	LOS A	5.8	41.5	0.76	0.87	41.1

MOVEMENT SUMMARY

Site: I-11 2026 1500D PM

Mount Gilead TIA
I-11 Therry Road / Central Road / Woodhouse Drive
Ultimate year 2026 with 1500 dwellings development PM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Woodhouse Drive (S)											
1	L	234	3.2	0.288	8.6	LOS A	1.5	11.0	0.67	0.75	39.6
2	T	99	0.0	0.305	6.8	LOS A	1.8	12.4	0.67	0.62	39.3
3	R	199	1.6	0.305	13.7	LOS A	1.8	12.4	0.67	0.86	37.2
Approach		532	2.0	0.305	10.2	LOS A	1.8	12.4	0.67	0.77	38.5
East: Therry Road (E)											
4	L	311	0.7	0.493	11.1	LOS A	4.0	28.6	0.85	0.91	43.3
5	T	374	1.7	0.493	10.6	LOS A	4.0	28.6	0.84	0.92	43.0
6	R	95	2.2	0.493	17.8	LOS B	3.8	27.0	0.84	1.02	39.3
Approach		779	1.4	0.493	11.7	LOS A	4.0	28.6	0.84	0.93	42.6
North: Central Road (N)											
7	L	264	0.0	0.414	10.5	LOS A	2.2	15.6	0.76	0.91	32.6
8	T	182	0.0	0.508	8.7	LOS A	3.3	23.7	0.80	0.85	32.5
9	R	245	3.4	0.508	15.7	LOS B	3.3	23.7	0.80	1.02	30.7
Approach		692	1.2	0.508	11.9	LOS A	3.3	23.7	0.78	0.93	31.8
West: Therry Road (W)											
10	L	67	10.9	0.460	7.8	LOS A	3.1	22.0	0.61	0.66	48.7
11	T	586	0.9	0.460	6.3	LOS A	3.1	22.0	0.61	0.57	48.5
12	R	356	3.8	0.460	13.5	LOS A	3.0	21.4	0.62	0.80	44.9
Approach		1009	2.6	0.460	8.9	LOS A	3.1	22.0	0.62	0.66	47.1
All Vehicles		3012	1.9	0.508	10.5	LOS A	4.0	28.6	0.72	0.81	42.2

I-12 Intersection of Therry Road and Gilchrist Drive

MOVEMENT SUMMARY

Site: I-12 2026 1500D AM

Mount Gilead TIA
I-12 Therry Road / Gilcrist Drive / Shopping Centre Access
Ultimate year 2026 with 1500 dwellings development AM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South East: Therry Road (SE)											
4	L	76	1.4	0.338	7.9	LOS A	1.7	11.9	0.55	0.69	48.8
5	T	232	0.5	0.338	6.6	LOS A	1.7	11.9	0.55	0.60	49.0
6	R	640	3.1	0.545	13.4	LOS A	3.8	27.0	0.62	0.81	44.1
Approach		947	2.3	0.545	11.3	LOS A	3.8	27.0	0.60	0.75	45.5
North East: Gilchrist Drive (NE)											
7	L	461	4.6	0.256	5.5	X	X	X	X	0.47	47.3
8	T	267	2.8	0.260	5.6	LOS A	1.4	10.2	0.41	0.49	43.7
9	R	139	0.0	0.260	12.1	LOS A	1.4	10.2	0.41	0.77	39.4
Approach		867	3.3	0.260	6.6	LOS A	1.4	10.2	0.19	0.53	44.6
North West: Shopping Centre Access (NW)											
10	L	77	2.7	0.148	12.2	LOS A	0.9	6.5	0.85	0.87	30.2
11	T	53	2.0	0.148	12.1	LOS A	0.9	6.5	0.84	0.88	29.8
12	R	23	0.0	0.148	19.0	LOS B	0.8	5.7	0.83	0.98	27.3
Approach		153	2.1	0.148	13.2	LOS A	0.9	6.5	0.84	0.89	29.5
South West: Gilchrist Drive (SW)											
1	L	241	0.0	0.676	13.1	LOS A	6.1	43.5	0.89	1.08	44.7
2	T	612	2.6	0.676	12.6	LOS A	6.1	43.5	0.88	1.06	44.2
3	R	167	0.6	0.676	20.0	LOS B	5.6	39.9	0.88	1.12	40.6
Approach		1020	1.7	0.676	13.9	LOS A	6.1	43.5	0.88	1.08	43.6
All Vehicles		2987	2.4	0.676	10.9	LOS A	6.1	43.5	0.59	0.80	44.1

MOVEMENT SUMMARY

Site: I-12 2026 1500D PM

Mount Gilead TIA
I-12 Therry Road / Gilcrist Drive / Shopping Centre Access
Ultimate year 2026 with 1500 dwellings development PM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South East: Therry Road (SE)											
4	L	93	0.0	0.454	11.6	LOS A	2.8	20.0	0.80	0.95	46.2
5	T	198	0.5	0.454	10.4	LOS A	2.8	20.0	0.80	0.92	46.5
6	R	537	4.3	0.643	18.3	LOS B	5.8	42.2	0.88	1.08	41.0
Approach		827	2.9	0.643	15.6	LOS B	5.8	42.2	0.85	1.03	42.7
North East: Gilchrist Drive (NE)											
7	L	659	3.4	0.363	5.4	X	X	X	X	0.47	47.3
8	T	657	2.7	0.585	7.3	LOS A	4.4	31.5	0.68	0.68	41.2
9	R	122	0.0	0.585	13.8	LOS A	4.4	31.5	0.70	0.95	38.7
Approach		1438	2.8	0.585	7.0	LOS A	4.4	31.5	0.37	0.61	43.5
North West: Shopping Centre Access (NW)											
10	L	147	0.7	0.404	9.7	LOS A	2.6	18.5	0.79	0.86	33.3
11	T	300	0.7	0.404	8.9	LOS A	2.6	18.5	0.79	0.81	32.9
12	R	161	0.0	0.404	16.1	LOS B	2.5	17.3	0.79	0.98	29.5
Approach		608	0.5	0.404	11.0	LOS A	2.6	18.5	0.79	0.87	31.9
South West: Gilchrist Drive (SW)											
1	L	53	0.0	0.275	8.4	LOS A	1.6	11.1	0.72	0.73	47.9
2	T	337	1.6	0.275	7.5	LOS A	1.6	11.1	0.72	0.68	47.7
3	R	45	0.0	0.275	14.5	LOS A	1.5	10.3	0.72	0.96	44.9
Approach		435	1.2	0.275	8.3	LOS A	1.6	11.1	0.72	0.71	47.4
All Vehicles		3308	2.2	0.643	10.1	LOS A	5.8	42.2	0.61	0.77	42.4

I-13 Intersection of Gilchrist Drive and Kellicar Road

MOVEMENT SUMMARY

Site: I-13 2026 1500D AM

Mount Gilead TIA
I-13 Narellan Road / Gilchrist Drive / Blaxland Road
Ultimate year 2026 with 1500 dwellings development AM
Signals - Fixed Time Cycle Time = 105 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Gilchrist Drive (S)											
1	L	260	4.5	0.863	43.5	LOS D	29.2	209.3	0.94	1.02	17.5
2	T	943	1.6	0.863	37.1	LOS C	29.7	210.4	0.95	0.95	17.5
3	R	143	2.9	0.574	53.3	LOS D	6.7	48.3	0.94	0.79	14.6
Approach		1346	2.3	0.863	40.0	LOS C	29.7	210.4	0.95	0.95	17.1
East: Kellicar Road (E)											
4	L	115	7.3	0.288	25.2	LOS B	4.4	32.1	0.79	0.79	28.8
5	T	131	1.6	0.288	34.9	LOS C	4.4	32.1	0.88	0.70	21.9
6	R	26	8.0	0.150	41.1	LOS C	1.0	7.7	0.95	0.71	21.4
Approach		272	4.7	0.288	31.4	LOS C	4.4	32.1	0.85	0.74	24.3
North: Gilchrist Drive (N)											
7	L	226	5.6	0.688	35.0	LOS C	19.4	139.7	0.89	0.92	31.5
8	T	736	1.9	0.688	29.7	LOS C	20.5	145.7	0.91	0.81	31.2
9	R	485	4.6	0.885	61.7	LOS E	13.5	97.9	1.00	0.92	22.4
Approach		1447	3.3	0.885	41.3	LOS C	20.5	145.7	0.94	0.86	27.6
West: Kellicar Road (W)											
10	L	376	5.9	0.781	35.8	LOS C	13.9	101.9	0.72	0.84	16.2
11	T	85	2.5	0.130	40.1	LOS C	1.8	12.5	0.83	0.62	14.1
12	R	107	6.9	0.364	41.5	LOS C	4.3	31.6	0.85	0.76	14.8
Approach		568	5.6	0.781	37.5	LOS C	13.9	101.9	0.76	0.79	15.6
All Vehicles		3634	3.4	0.885	39.5	LOS C	29.7	210.4	0.91	0.87	22.4

MOVEMENT SUMMARY

Site: I-13 2026 1500D PM

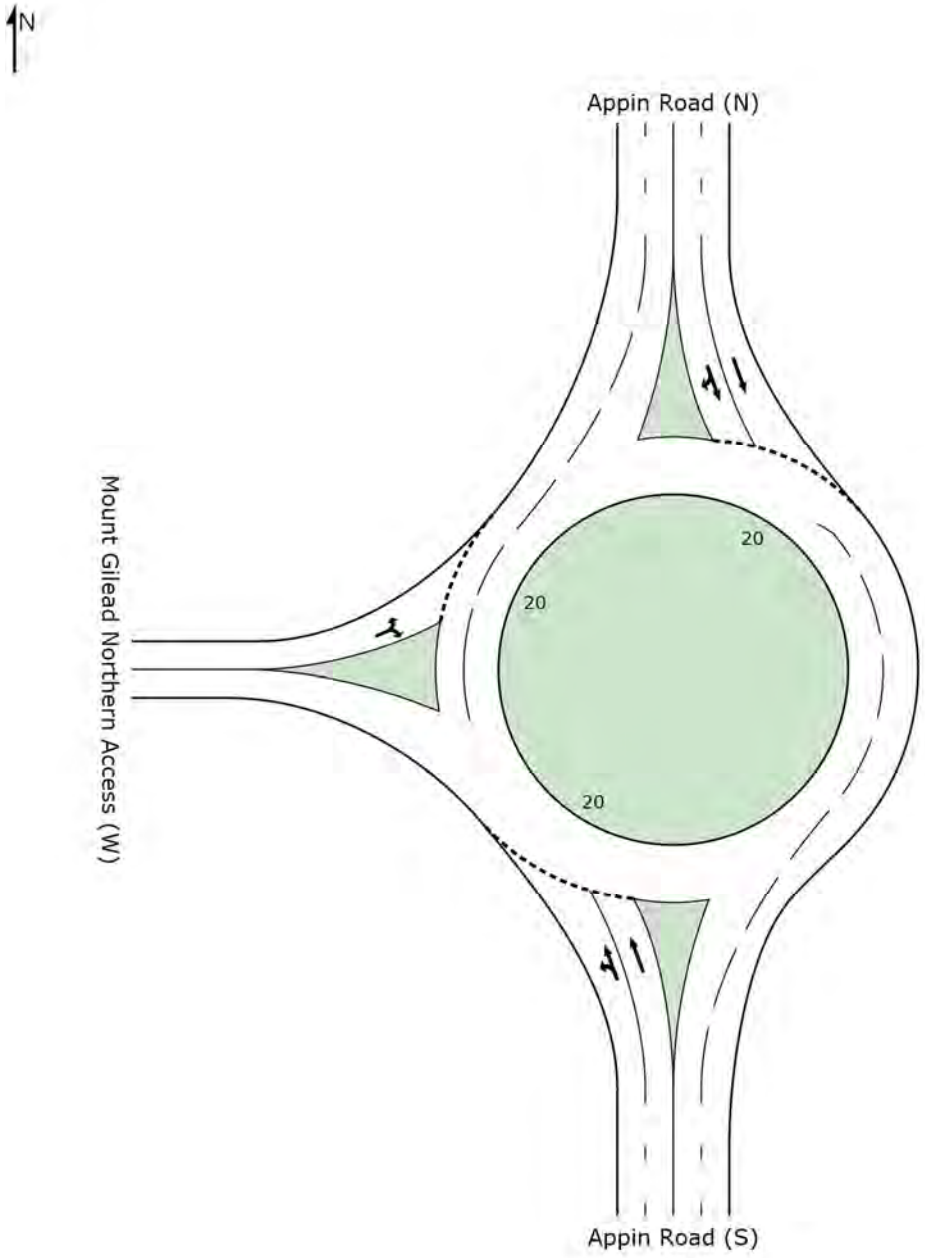
Mount Gilead TIA
I-13 Narellan Road / Gilchrist Drive / Blaxland Road
Ultimate year 2026 with 1500 dwellings development PM
Signals - Fixed Time Cycle Time = 95 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Gilchrist Drive (S)											
1	L	165	7.0	0.796	42.0	LOS C	19.6	142.0	0.91	0.98	18.1
2	T	785	2.5	0.796	34.4	LOS C	20.1	144.0	0.93	0.89	18.4
3	R	195	3.2	0.623	30.2	LOS C	5.1	36.9	0.95	0.80	21.8
Approach		1145	3.3	0.796	34.8	LOS C	20.1	144.0	0.93	0.88	18.8
East: Kellicar Road (E)											
4	L	231	5.5	0.529	33.5	LOS C	8.9	64.9	0.88	0.91	24.4
5	T	271	0.0	0.529	34.4	LOS C	9.1	64.9	0.93	0.79	22.1
6	R	125	1.7	1.001	107.9	LOS F	9.6	68.5	1.00	1.25	10.4
Approach		626	2.4	1.001	48.7	LOS D	9.6	68.5	0.92	0.93	18.5
North: Gilchrist Drive (N)											
7	L	204	3.1	0.967	74.0	LOS F	37.1	265.9	1.00	1.25	20.3
8	T	938	2.6	0.967	66.5	LOS E	37.1	265.9	1.00	1.26	20.4
9	R	443	3.8	0.970	77.3	LOS F	13.5	97.9	1.00	1.12	19.3
Approach		1585	3.0	0.970	70.5	LOS E	37.1	265.9	1.00	1.22	20.1
West: Kellicar Road (W)											
10	L	656	4.0	0.923	30.7	LOS C	18.0	130.6	0.89	0.90	18.1
11	T	302	0.0	0.223	22.3	LOS B	4.2	29.3	0.63	0.52	21.1
12	R	283	4.0	1.000 [3]	59.4	LOS E	12.4	89.8	1.00	1.05	11.1
Approach		1241	3.1	1.000	35.2	LOS C	18.0	130.6	0.85	0.84	16.3
All Vehicles		4598	3.0	1.001	49.1	LOS D	37.1	265.9	0.93	0.99	19.0

I-0A Intersection of Appin Road and Mount Gilead Northern Access

INTERSECTION LAYOUT



MOVEMENT SUMMARY

Site: I-0A 2026 1500D AM

Mount Gilead TIA
I-0A Appin Road / Mount Gilead Northern Access
Ultimate year 2026 with 1500 dwellings development AM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	4	0.0	0.517	9.4	LOS A	4.1	29.9	0.31	0.63	57.2
2	T	1557	3.7	0.517	9.6	LOS A	4.1	29.9	0.32	0.56	59.1
Approach		1561	3.6	0.517	9.6	LOS A	4.1	29.9	0.32	0.56	59.1
North: Appin Road (N)											
8	T	687	8.3	0.242	9.4	LOS A	1.7	12.9	0.11	0.55	60.9
9	R	77	8.2	0.242	13.1	LOS A	1.7	12.6	0.11	0.84	52.9
Approach		764	8.3	0.242	9.8	LOS A	1.7	12.9	0.11	0.58	60.1
West: Mount Gilead Northern Access (W)											
10	L	297	2.1	0.556	14.4	LOS A	3.2	22.9	0.81	1.02	32.3
12	R	15	0.0	0.556	19.7	LOS B	3.2	22.9	0.81	1.08	30.2
Approach		312	2.0	0.556	14.7	LOS B	3.2	22.9	0.81	1.02	32.2
All Vehicles		2637	4.8	0.556	10.3	LOS A	4.1	29.9	0.32	0.62	56.9

MOVEMENT SUMMARY

Site: I-0A 2026 1500D PM

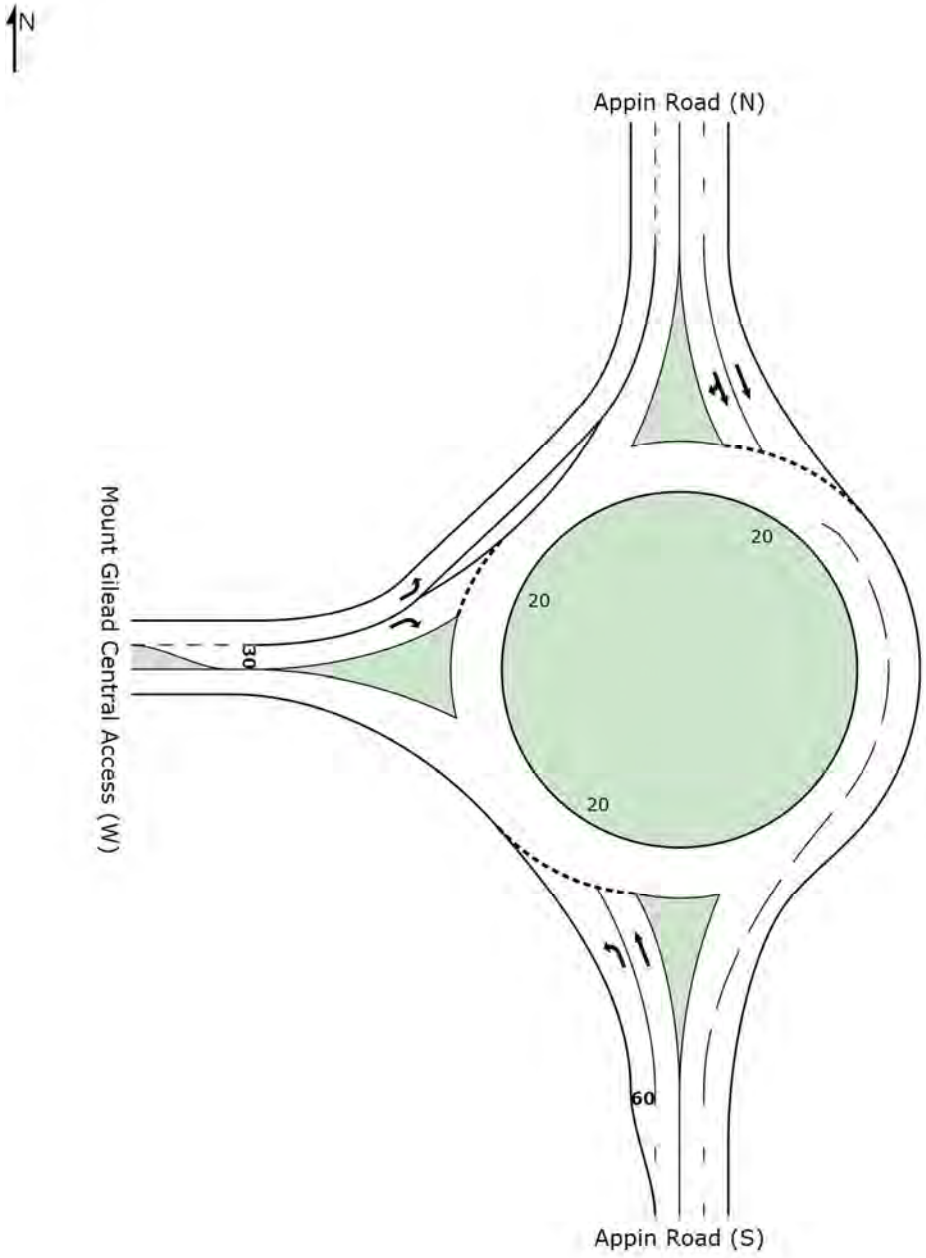
Mount Gilead TIA
I-0A Appin Road / Mount Gilead Northern Access
Ultimate year 2026 with 1500 dwellings development PM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	15	0.0	0.302	10.3	LOS A	1.8	13.4	0.47	0.70	56.2
2	T	722	5.4	0.302	10.7	LOS A	1.8	13.4	0.48	0.65	57.8
Approach		737	5.3	0.302	10.7	LOS A	1.8	13.4	0.48	0.65	57.7
North: Appin Road (N)											
8	T	1823	1.7	0.623	9.0	LOS A	7.4	52.5	0.08	0.56	61.2
9	R	287	2.2	0.623	12.8	LOS A	7.4	52.5	0.09	0.84	52.9
Approach		2111	1.8	0.623	9.6	LOS A	7.4	52.5	0.08	0.60	60.0
West: Mount Gilead Northern Access (W)											
10	L	77	8.2	0.108	8.7	LOS A	0.4	3.2	0.55	0.74	39.3
12	R	4	0.0	0.108	13.7	LOS A	0.4	3.2	0.55	0.87	35.8
Approach		81	7.8	0.108	8.9	LOS A	0.4	3.2	0.55	0.74	39.1
All Vehicles		2928	2.8	0.623	9.8	LOS A	7.4	52.5	0.19	0.61	59.1

I-0B Intersection of Appin Road and Mount Gilead Central Access

INTERSECTION LAYOUT



MOVEMENT SUMMARY

Site: I-0B 2026 1500 AM - Roundabout

Mount Gilead TIA
I-0B Appin Road / Mount Gilead Central Access
Ultimate year 2026 with 1500 dwellings development AM - Roundabout
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	2	0.0	0.002	8.9	LOS A	0.0	0.1	0.18	0.55	57.9
2	T	1397	4.1	0.796	9.8	LOS A	14.7	106.2	0.42	0.51	58.2
Approach		1399	4.1	0.796	9.8	LOS A	14.7	106.2	0.42	0.51	58.2
North: Appin Road (N)											
8	T	658	8.2	0.215	9.4	LOS A	1.8	13.2	0.09	0.56	61.1
9	R	44	7.1	0.215	13.0	LOS A	1.7	12.8	0.09	0.86	52.9
Approach		702	8.1	0.215	9.7	LOS A	1.8	13.2	0.09	0.58	60.5
West: Mount Gilead Central Access (W)											
10	L	167	1.9	0.091	3.7	X	X	X	X	0.39	38.8
12	R	8	0.0	0.031	33.6	LOS C	0.2	1.7	1.00	0.78	21.7
Approach		176	1.8	0.091	5.1	LOS A	0.2	1.7	0.05	0.41	36.4
All Vehicles		2277	5.1	0.796	9.4	LOS A	14.7	106.2	0.29	0.52	58.2

MOVEMENT SUMMARY

Site: I-0B 2026 1500 PM - Roundabout

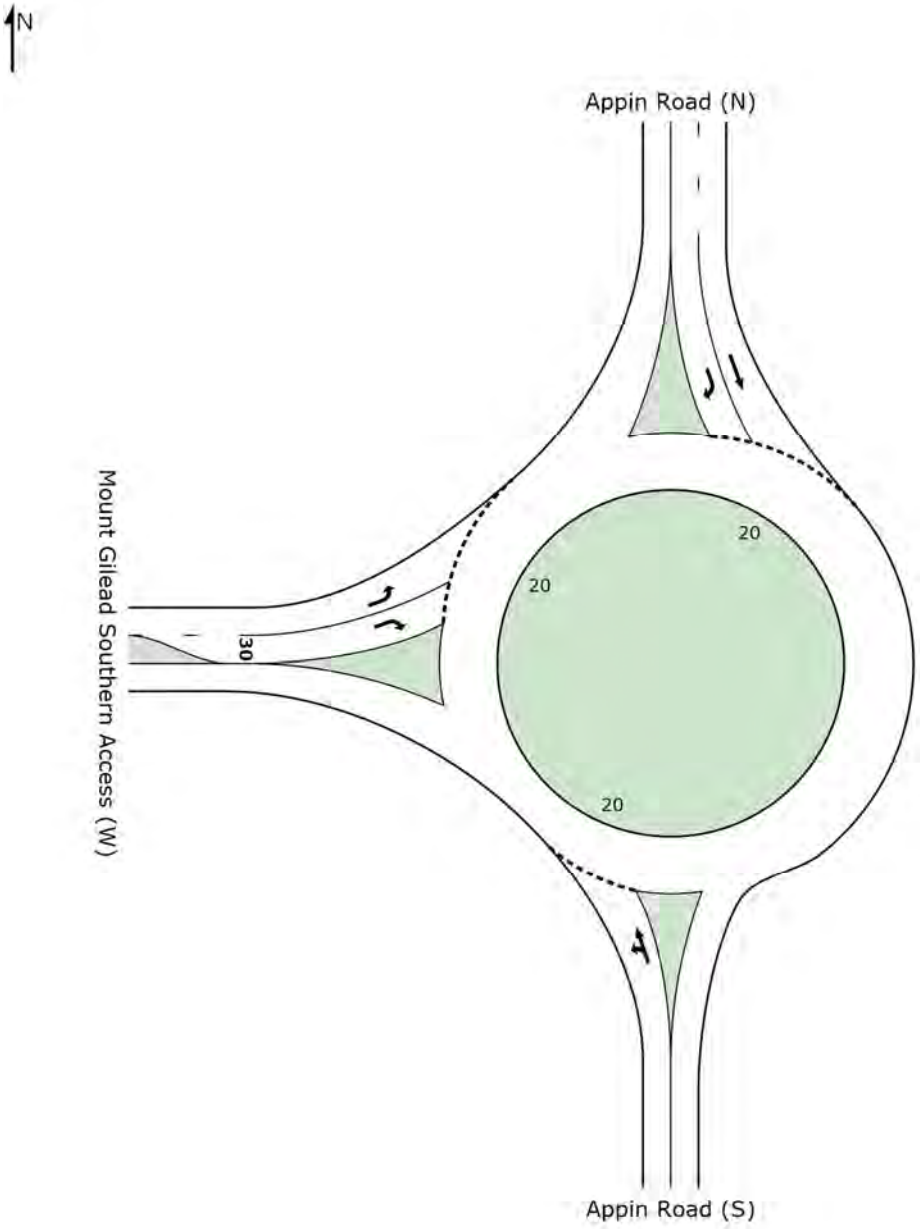
Mount Gilead TIA
I-0B Appin Road / Mount Gilead Central Access
Ultimate year 2026 with 1500 dwellings development PM - Roundabout
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	8	0.0	0.009	9.8	LOS A	0.0	0.3	0.37	0.56	56.4
2	T	696	5.6	0.462	10.3	LOS A	3.7	27.3	0.46	0.59	57.9
Approach		704	5.5	0.462	10.3	LOS A	3.7	27.3	0.46	0.59	57.8
North: Appin Road (N)											
8	T	1660	1.7	0.530	9.1	LOS A	6.2	44.0	0.05	0.57	61.4
9	R	167	1.9	0.530	12.8	LOS A	6.2	44.0	0.06	0.87	52.9
Approach		1827	1.7	0.530	9.4	LOS A	6.2	44.0	0.05	0.60	60.6
West: Mount Gilead Central Access (W)											
10	L	44	7.1	0.025	3.8	X	X	X	X	0.39	38.8
12	R	2	0.0	0.003	15.5	LOS B	0.0	0.1	0.73	0.60	33.5
Approach		46	6.8	0.025	4.3	LOS A	0.0	0.1	0.03	0.40	38.3
All Vehicles		2578	2.9	0.530	9.6	LOS A	6.2	44.0	0.16	0.59	59.6

I-0C Intersection of Appin Road and Mount Gilead Southern Access

INTERSECTION LAYOUT



MOVEMENT SUMMARY

Site: I-0C 2026 1500D AM

Mount Gilead TIA
I-0C Appin Road / Mount Gilead Southern Access
Ultimate year 2026 with 1500 dwellings development AM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	8	12.5	0.661	8.8	LOS A	6.5	47.2	0.56	0.62	52.2
2	T	862	5.0	0.661	8.8	LOS A	6.5	47.2	0.56	0.58	53.1
Approach		871	5.1	0.661	8.8	LOS A	6.5	47.2	0.56	0.58	53.1
North: Appin Road (N)											
8	T	525	8.2	0.318	7.7	LOS A	2.4	18.2	0.17	0.51	56.1
9	R	141	7.5	0.125	11.7	LOS A	0.7	5.4	0.16	0.65	49.0
Approach		666	8.1	0.318	8.5	LOS A	2.4	18.2	0.16	0.54	54.5
West: Mount Gilead Southern Access (W)											
10	L	534	2.0	0.710	20.1	LOS B	9.6	68.7	1.00	1.22	24.4
12	R	28	3.7	0.059	17.6	LOS B	0.3	2.5	0.80	0.81	28.4
Approach		562	2.1	0.710	19.9	LOS B	9.6	68.7	0.99	1.20	24.6
All Vehicles		2099	5.2	0.710	11.7	LOS A	9.6	68.7	0.55	0.73	47.0

MOVEMENT SUMMARY

Site: I-0C 2026 1500D PM

Mount Gilead TIA
I-0C Appin Road / Mount Gilead Southern Access
Ultimate year 2026 with 1500 dwellings development PM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	28	3.7	0.653	14.4	LOS A	6.8	49.6	0.84	0.97	47.3
2	T	560	4.5	0.653	14.7	LOS B	6.8	49.6	0.84	0.96	48.6
Approach		588	4.5	0.653	14.7	LOS B	6.8	49.6	0.84	0.96	48.5
North: Appin Road (N)											
8	T	1128	1.6	0.623	7.3	LOS A	7.4	52.7	0.12	0.50	56.4
9	R	534	2.0	0.369	11.4	LOS A	2.9	20.6	0.10	0.67	49.3
Approach		1662	1.7	0.623	8.6	LOS A	7.4	52.7	0.11	0.56	54.0
West: Mount Gilead Southern Access (W)											
10	L	141	7.5	0.149	8.9	LOS A	1.0	7.6	0.70	0.70	34.8
12	R	8	12.5	0.015	15.2	LOS B	0.1	0.6	0.67	0.70	30.8
Approach		149	7.7	0.149	9.3	LOS A	1.0	7.6	0.70	0.70	34.5
All Vehicles		2400	2.8	0.653	10.2	LOS A	7.4	52.7	0.33	0.67	51.8

Year 2026 – Future conditions with development (1700 dwellings)

I-01 Intersection of Appin Road and Church Street

MOVEMENT SUMMARY

Site: I-01 2026 1700D AM

Mount Gilead TIA
I-01 Appin Road / Church Street
Ultimate year 2026 with 1700 dwellings development AM
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	92	3.4	0.133	13.1	LOS A	0.5	3.5	0.57	0.99	38.9
3	R	36	5.9	0.053	13.2	LOS A	0.2	1.4	0.56	0.93	38.9
Approach		127	4.1	0.133	13.1	LOS A	0.5	3.5	0.57	0.97	38.9
East: Church Street (E)											
4	L	60	1.8	0.376	6.5	LOS A	0.0	0.0	0.00	0.62	43.3
6	R	609	6.4	0.376	6.5	LOS A	0.0	0.0	0.00	0.60	43.4
Approach		669	6.0	0.376	6.5	NA	0.0	0.0	0.00	0.60	43.4
North: Appin Road (N)											
7	L	398	8.5	0.227	5.8	X	X	X	X	0.53	44.1
8	T	67	3.1	0.107	13.7	LOS A	0.4	2.8	0.59	0.99	38.6
Approach		465	7.7	0.227	6.9	LOS A	0.4	2.8	0.09	0.59	43.2
All Vehicles		1262	6.4	0.376	7.3	NA	0.5	3.5	0.09	0.64	42.8

MOVEMENT SUMMARY

Site: I-01 2026 1700D PM

Mount Gilead TIA
I-01 Appin Road / Church Street
Ultimate year 2026 with 1700 dwellings development PM
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	117	1.8	0.143	12.0	LOS A	0.6	3.9	0.52	0.95	39.6
3	R	60	5.3	0.078	12.5	LOS A	0.3	2.2	0.53	0.93	39.3
Approach		177	3.0	0.143	12.2	LOS A	0.6	3.9	0.53	0.94	39.5
East: Church Street (E)											
4	L	77	4.1	0.321	6.5	LOS A	0.0	0.0	0.00	0.62	43.3
6	R	496	6.2	0.321	6.5	LOS A	0.0	0.0	0.00	0.60	43.4
Approach		573	5.9	0.321	6.5	NA	0.0	0.0	0.00	0.60	43.4
North: Appin Road (N)											
7	L	723	2.2	0.395	5.7	X	X	X	X	0.53	44.1
8	T	95	1.1	0.129	12.6	LOS A	0.5	3.4	0.55	0.97	39.2
Approach		818	2.1	0.395	6.5	LOS A	0.5	3.4	0.06	0.58	43.5
All Vehicles		1567	3.6	0.395	7.1	NA	0.6	3.9	0.09	0.63	43.0

I-02 Intersection of Appin Road, Kellerman Drive and Copperfield Drive

MOVEMENT SUMMARY

Site: I-02 2026 1700D AM

Mount Gilead TIA
I-02 Appin Road / Kellerman Drive / Copperfield Drive
Ultimate year 2026 with 1700 dwellings development AM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	113	0.9	1.749	686.5	LOS F	555.5	3995.0	1.00	9.10	3.0
2	T	1858	3.3	1.749	686.5	LOS F	555.5	3995.0	1.00	9.10	3.2
3	R	3	0.0	1.749	691.2	LOS F	555.5	3995.0	1.00	9.10	3.2
Approach		1974	3.2	1.749	686.5	LOS F	555.5	3995.0	1.00	9.10	3.2
East: Kellerman Drive (E)											
4	L	15	0.0	0.455	16.1	LOS B	3.6	26.5	0.91	0.99	44.7
5	T	163	9.7	0.455	14.1	LOS A	3.6	26.5	0.91	0.99	42.9
6	R	85	2.5	0.455	20.7	LOS B	3.6	26.5	0.91	1.02	41.2
Approach		263	6.8	0.455	16.4	LOS B	3.6	26.5	0.91	1.00	42.4
North: Appin Road (N)											
7	L	52	2.0	0.620	10.1	LOS A	6.4	48.0	0.64	0.64	55.0
8	T	653	9.2	0.620	10.8	LOS A	6.4	48.0	0.64	0.62	56.4
9	R	37	8.6	0.620	14.8	LOS B	6.4	48.0	0.64	0.75	52.7
Approach		741	8.7	0.620	11.0	LOS A	6.4	48.0	0.64	0.63	56.1
West: Copperfield Drive (W)											
10	L	134	3.1	0.930	83.9	LOS F	17.0	122.6	1.00	1.64	18.9
11	T	26	8.0	0.930	82.2	LOS F	17.0	122.6	1.00	1.64	18.3
12	R	129	2.4	0.930	89.4	LOS F	17.0	122.6	1.00	1.64	19.8
Approach		289	3.3	0.930	86.2	LOS F	17.0	122.6	1.00	1.64	19.3
All Vehicles		3267	4.7	1.749	426.1	LOS F	555.5	3995.0	0.91	5.86	5.1

MOVEMENT SUMMARY

Site: I-02 2026 1700D PM

Mount Gilead TIA
I-02 Appin Road / Kellerman Drive / Copperfield Drive
Ultimate year 2026 with 1700 dwellings development PM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	43	4.9	0.747	11.6	LOS A	10.2	74.7	0.86	0.78	50.7
2	T	767	5.6	0.747	11.5	LOS A	10.2	74.7	0.86	0.77	50.9
3	R	21	0.0	0.747	16.1	LOS B	10.2	74.7	0.86	0.83	47.5
Approach		832	5.4	0.747	11.7	LOS A	10.2	74.7	0.86	0.77	50.8
East: Kellerman Drive (E)											
4	L	19	0.0	0.952	116.9	LOS F	17.9	131.8	1.00	1.74	15.7
5	T	144	5.8	0.952	114.8	LOS F	17.9	131.8	1.00	1.74	14.4
6	R	76	8.3	0.952	121.6	LOS F	17.9	131.8	1.00	1.73	15.1
Approach		239	6.2	0.952	117.1	LOS F	17.9	131.8	1.00	1.73	14.7
North: Appin Road (N)											
7	L	84	1.3	1.906	829.2	LOS F	676.7	4807.7	1.00	8.95	2.5
8	T	2039	1.7	1.906	829.6	LOS F	676.7	4807.7	1.00	8.95	2.8
9	R	52	6.1	1.906	833.9	LOS F	676.7	4807.7	1.00	8.91	2.7
Approach		2175	1.7	1.906	829.7	LOS F	676.7	4807.7	1.00	8.95	2.8
West: Copperfield Drive (W)											
10	L	51	0.0	0.585	19.0	LOS B	5.7	40.6	1.00	1.11	40.5
11	T	78	5.4	0.585	17.4	LOS B	5.7	40.6	1.00	1.11	39.7
12	R	182	2.3	0.585	24.6	LOS B	5.7	40.6	1.00	1.11	39.8
Approach		311	2.7	0.585	21.9	LOS B	5.7	40.6	1.00	1.11	39.9
All Vehicles		3556	3.0	1.906	519.9	LOS F	676.7	4807.7	0.97	5.87	4.3

I-03 Intersection of Appin Road, Kellerman Drive and Fitzgibbon Lane

MOVEMENT SUMMARY

Site: I-03 2026 1700D AM

Mount Gilead TIA
I-03 Appin Road / Kellerman Drive / Fitzgibbon Lane
Ultimate year 2026 with 1700 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	91	1.2	1.000 [3]	47.3	LOS D	21.7	155.6	1.00	0.88	31.4
2	T	2045	3.1	1.857	696.7	LOS F	449.9	3234.4	1.00	2.94	3.4
3	R	3	0.0	0.040	82.0	LOS F	0.2	1.5	0.98	0.63	19.8
Approach		2139	3.1	1.857	668.3	LOS F	449.9	3234.4	1.00	2.85	3.5
East: Kellerman Drive (E)											
4	L	6	0.0	0.717	58.5	LOS E	5.3	37.1	0.83	0.89	19.5
5	T	135	0.0	1.829	335.2	LOS F	55.4	389.7	0.89	1.26	4.0
6	R	162	0.6	1.829	842.3	LOS F	55.4	389.7	1.00	2.19	2.0
Approach		303	0.3	1.829	600.6	LOS F	55.4	389.7	0.95	1.75	2.6
North: Appin Road (N)											
7	L	82	1.3	0.381	27.0	LOS B	14.7	109.3	0.60	0.97	38.9
8	T	869	9.1	0.534	19.3	LOS B	23.2	171.2	0.65	0.58	41.3
9	R	207	0.3	1.304	331.7	LOS F	30.2	212.2	1.00	1.39	6.0
Approach		1158	5.6	1.304	75.7	LOS F	30.2	212.2	0.71	0.75	20.6
West: Fitzgibbon Lane (W)											
10	L	553	1.3	0.701	44.0	LOS D	30.5	215.8	0.88	0.87	24.4
11	T	126	2.5	0.730	52.9	LOS D	10.0	71.8	0.90	0.79	18.0
12	R	37	5.7	0.730	61.9	LOS E	10.0	71.8	0.90	0.88	18.7
Approach		716	1.8	0.730	46.5	LOS D	30.5	215.8	0.89	0.86	22.8
All Vehicles		4316	3.3	1.857	401.4	LOS F	449.9	3234.4	0.90	1.88	5.1

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-03 2026 1700D PM

Mount Gilead TIA
I-03 Appin Road / Kellerman Drive / Fitzgibbon Lane
Ultimate year 2026 with 1700 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	32	3.3	0.868	66.4	LOS E	21.2	154.6	0.88	1.05	24.7
2	T	802	5.2	0.868	56.5	LOS D	36.4	266.3	0.96	0.94	27.0
3	R	2	0.0	0.026	81.6	LOS F	0.1	1.0	0.98	0.61	19.9
Approach		836	5.2	0.868	56.9	LOS E	36.4	266.3	0.95	0.94	26.9
East: Kellerman Drive (E)											
4	L	7	0.0	0.354	63.8	LOS E	2.4	16.6	0.90	0.76	18.2
5	T	94	0.0	0.901	73.7	LOS F	10.8	75.7	0.96	0.89	14.2
6	R	75	0.0	0.901	92.9	LOS F	10.8	75.7	1.00	1.02	14.6
Approach		176	0.0	0.901	81.4	LOS F	10.8	75.7	0.98	0.94	14.5
North: Appin Road (N)											
7	L	185	1.1	0.735	25.9	LOS B	40.8	290.1	0.72	0.98	40.1
8	T	2040	1.9	1.030	65.5	LOS E	136.2	968.6	0.90	1.07	22.6
9	R	472	0.4	0.855	51.7	LOS D	26.3	184.8	0.95	0.95	26.1
Approach		2697	1.6	1.030	60.4	LOS E	136.2	968.6	0.90	1.05	23.8
West: Fitzgibbon Lane (W)											
10	L	279	1.1	0.708	29.2	LOS C	9.3	66.0	0.67	0.80	30.8
11	T	123	2.6	0.984	105.6	LOS F	18.5	132.2	1.00	1.17	10.8
12	R	79	2.7	0.984	114.4	LOS F	18.5	132.2	1.00	1.17	11.5
Approach		481	1.8	0.984	62.7	LOS E	18.5	132.2	0.81	0.96	18.2
All Vehicles		4189	2.2	1.030	60.8	LOS E	136.2	968.6	0.90	1.01	23.4

I-04 Intersection of Appin Road and Woodland Road

MOVEMENT SUMMARY

Site: I-04 2026 1700D AM

Mount Gilead TIA
I-04 Appin Road / Woodland Road
Ultimate year 2026 with 1700 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	2605	2.9	0.953	19.2	LOS B	61.1	438.3	0.58	0.63	46.9
3	R	143	2.2	0.386	44.9	LOS D	6.9	49.1	0.75	0.79	29.9
Approach		2748	2.9	0.953	20.5	LOS B	61.1	438.3	0.59	0.64	45.7
East: Woodland Road (E)											
4	L	122	1.7	0.940	65.9	LOS E	10.3	73.4	0.92	0.84	14.3
6	R	374	3.4	0.940	89.7	LOS F	27.3	196.7	0.99	1.00	12.4
Approach		496	3.0	0.940	83.8	LOS F	27.3	196.7	0.97	0.96	12.7
North: Appin Road (N)											
7	L	148	4.3	0.235	25.5	LOS B	4.9	35.2	0.52	0.76	38.1
8	T	1079	5.4	0.911	60.2	LOS E	39.4	288.2	1.00	1.01	23.8
Approach		1227	5.2	0.911	56.0	LOS D	39.4	288.2	0.94	0.98	24.9
All Vehicles		4472	3.6	0.953	37.3	LOS C	61.1	438.3	0.73	0.77	32.8

MOVEMENT SUMMARY

Site: I-04 2026 1700D PM

Mount Gilead TIA
I-04 Appin Road / Woodland Road
Ultimate year 2026 with 1700 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	1100	4.6	0.366	1.2	LOS A	2.8	20.4	0.08	0.08	76.0
3	R	117	0.9	0.985	114.9	LOS F	10.3	72.8	1.00	1.03	15.3
Approach		1217	4.2	0.985	12.1	LOS A	10.3	72.8	0.17	0.17	56.8
East: Woodland Road (E)											
4	L	158	0.7	0.960	66.9	LOS E	10.4	73.4	0.93	0.83	14.1
6	R	206	4.1	0.960	102.3	LOS F	16.9	122.5	1.00	1.05	11.1
Approach		364	2.6	0.960	86.9	LOS F	16.9	122.5	0.97	0.95	12.1
North: Appin Road (N)											
7	L	386	1.9	0.352	11.6	LOS A	5.3	37.9	0.22	0.73	50.2
8	T	2566	1.5	0.979	35.8	LOS C	95.6	677.9	0.92	1.02	31.9
Approach		2953	1.6	0.979	32.6	LOS C	95.6	677.9	0.83	0.98	33.4
All Vehicles		4534	2.4	0.985	31.5	LOS C	95.6	677.9	0.66	0.76	34.8

I-05 Intersection of Appin Road and St Johns Road

MOVEMENT SUMMARY

Site: I-05 2026 1700D AM

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Ultimate year 2026 with 1700 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	2568	3.0	0.940	14.5	LOS A	50.9	365.5	0.51	0.54	51.9
3	R	443	2.1	0.981	52.8	LOS D	24.0	171.4	0.98	0.88	27.1
Approach		3012	2.8	0.981	20.1	LOS B	50.9	365.5	0.58	0.59	46.3
East: St Johns Road (E)											
4	L	262	2.4	0.955	45.1	LOS D	14.9	106.1	0.97	0.88	25.5
6	R	413	1.0	0.955	88.1	LOS F	29.0	205.1	1.00	1.02	16.2
Approach		675	1.6	0.955	71.4	LOS F	29.0	205.1	0.99	0.97	18.9
North: Appin Road (N)											
7	L	237	3.1	0.130	11.2	X	X	X	X	0.69	58.9
8	T	947	6.8	0.986	91.4	LOS F	42.2	312.4	1.00	1.13	19.6
Approach		1184	6.0	0.986	75.4	LOS F	42.2	312.4	0.80	1.04	22.6
All Vehicles		4871	3.4	0.986	40.7	LOS C	50.9	365.5	0.69	0.75	32.4

MOVEMENT SUMMARY

Site: I-05 2026 1700D PM

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Ultimate year 2026 with 1700 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	1139	3.6	0.391	1.4	LOS A	3.0	21.7	0.09	0.08	75.6
3	R	187	3.4	1.113	202.4	LOS F	23.0	165.6	1.00	1.22	9.5
Approach		1326	3.6	1.113	29.8	LOS C	23.0	165.6	0.22	0.24	40.2
East: St Johns Road (E)											
4	L	280	1.0	1.000 [3]	48.8	LOS D	15.0	106.3	0.88	0.81	24.3
6	R	288	0.4	1.090	182.2	LOS F	34.0	238.8	1.00	1.30	9.0
Approach		568	0.7	1.090	116.5	LOS F	34.0	238.8	0.94	1.00	13.3
North: Appin Road (N)											
7	L	371	1.7	0.202	11.2	X	X	X	X	0.69	58.8
8	T	2667	1.8	1.113	143.4	LOS F	167.8	1192.8	1.00	1.59	13.9
Approach		3038	1.8	1.113	127.2	LOS F	167.8	1192.8	0.88	1.48	15.3
All Vehicles		4933	2.1	1.113	99.8	LOS F	167.8	1192.8	0.71	1.09	18.2

I-06 Intersection of Appin Road and Therry Road

MOVEMENT SUMMARY

Site: I-06 2026 1700D AM

Mount Gilead TIA
I-06 Appin Road / Therry Road
Ultimate year 2026 with 1700 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	774	0.7	0.419	11.1	X	X	X	X	0.69	58.8
2	T	2226	3.3	1.041	92.5	LOS F	116.2	836.2	1.00	1.32	19.4
Approach		3000	2.6	1.041	71.5	LOS F	116.2	836.2	0.74	1.16	23.4
North: Appin Road (N)											
8	T	881	7.0	0.309	1.4	LOS A	2.4	17.5	0.08	0.07	75.7
9	R	294	1.0	1.015	129.1	LOS F	28.9	203.9	1.00	1.11	14.0
Approach		1175	5.4	1.015	33.4	LOS C	28.9	203.9	0.31	0.33	37.7
West: Therry Road (W)											
10	L	469	1.8	0.256	7.6	X	X	X	X	0.60	47.4
12	R	326	2.3	0.625	71.2	LOS F	10.7	76.4	0.99	0.81	19.2
Approach		796	2.0	0.625	33.7	LOS C	10.7	76.4	0.41	0.69	28.7
All Vehicles		4971	3.2	1.041	56.4	LOS D	116.2	836.2	0.59	0.89	26.5

MOVEMENT SUMMARY

Site: I-06 2026 1700D PM

Mount Gilead TIA
I-06 Appin Road / Therry Road
Ultimate year 2026 with 1700 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	393	1.6	0.214	11.1	X	X	X	X	0.69	58.8
2	T	1039	4.3	0.891	57.5	LOS E	36.5	264.8	1.00	0.97	26.7
Approach		1432	3.5	0.891	44.8	LOS D	36.5	264.8	0.72	0.89	31.3
North: Appin Road (N)											
8	T	2309	2.1	0.867	5.0	LOS A	29.5	210.5	0.42	0.40	65.4
9	R	429	1.0	0.904	64.7	LOS E	28.9	204.0	0.93	0.92	23.7
Approach		2739	2.0	0.904	14.3	LOS A	29.5	210.5	0.50	0.48	52.4
West: Therry Road (W)											
10	L	404	1.0	0.219	7.6	X	X	X	X	0.60	47.4
12	R	713	0.6	0.899	80.7	LOS F	27.4	192.5	1.00	0.98	17.6
Approach		1117	0.8	0.899	54.2	LOS D	27.4	192.5	0.64	0.84	22.2
All Vehicles		5287	2.1	0.904	31.0	LOS C	36.5	264.8	0.59	0.67	36.8

I-07 Intersection of Appin Road, Narellan Road, Oxley Street and The Parkway

MOVEMENT SUMMARY

Site: I-07 2026 1700D AM

Mount Gilead TIA
I-07 Appin Road / Oxley Street / Narellan Road / The Parkway
Ultimate year 2026 with 1700 dwellings development AM
Signals - Fixed Time Cycle Time = 150 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	749	6.6	0.423	7.8	X	X	X	X	0.60	49.7
2	T	1926	2.0	1.155	202.0	LOS F	136.5	972.2	1.00	1.69	9.0
3	R	36	0.0	0.093	26.4	LOS B	1.1	8.0	0.67	0.72	34.8
Approach		2712	3.3	1.155	146.0	LOS F	136.5	972.2	0.72	1.37	11.8
East: The Parkway (E)											
4	L	25	4.2	0.014	7.7	X	X	X	X	0.60	37.8
5	T	316	1.1	1.119	200.5	LOS F	41.3	292.1	1.00	1.49	3.4
6	R	207	2.6	1.000 [3]	75.5	LOS F	14.8	106.1	1.00	0.82	8.6
Approach		547	1.9	1.119	144.5	LOS F	41.3	292.1	0.95	1.20	4.7
North: Oxley Street (N)											
7	L	135	4.7	0.075	7.7	X	X	X	X	0.60	46.7
8	T	886	2.9	0.535	33.2	LOS C	23.6	169.3	0.79	0.70	27.7
9	R	216	1.9	1.108	201.6	LOS F	27.5	195.6	1.00	1.26	6.9
Approach		1237	2.9	1.108	59.9	LOS E	27.5	195.6	0.74	0.79	19.5
West: Narellan Road (W)											
10	L	311	1.7	0.633	35.1	LOS C	12.8	91.0	0.64	0.76	26.9
11	T	261	0.4	1.117	193.3	LOS F	41.5	296.1	1.00	1.45	7.4
12	R	361	9.9	1.117	203.8	LOS F	41.5	296.1	1.00	1.31	8.3
Approach		933	4.5	1.117	144.7	LOS F	41.5	296.1	0.88	1.17	10.3
All Vehicles		5428	3.3	1.155	126.0	LOS F	136.5	972.2	0.78	1.19	11.8

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-07 2026 1700D PM

Mount Gilead TIA
I-07 Appin Road / Oxley Street / Narellan Road / The Parkway
Ultimate year 2026 with 1700 dwellings development PM
Signals - Fixed Time Cycle Time = 145 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	418	5.8	0.234	7.8	X	X	X	X	0.60	49.8
2	T	996	2.4	0.917	67.1	LOS E	38.3	273.4	1.00	1.02	20.4
3	R	75	0.0	1.365	422.2	LOS F	14.0	97.9	1.00	1.37	4.8
Approach		1488	3.3	1.365	68.2	LOS E	38.3	273.4	0.72	0.92	20.5
East: The Parkway (E)											
4	L	28	3.7	0.016	7.7	X	X	X	X	0.60	37.8
5	T	206	2.6	1.040	138.3	LOS F	21.7	154.9	1.00	1.25	4.8
6	R	178	2.4	0.942	97.5	LOS F	14.9	106.1	1.00	1.01	6.8
Approach		413	2.6	1.040	111.7	LOS F	21.7	154.9	0.93	1.10	6.0
North: Oxley Street (N)											
7	L	404	2.1	0.221	7.6	X	X	X	X	0.60	46.7
8	T	1950	1.6	1.047	121.8	LOS F	109.8	779.4	1.00	1.37	11.9
9	R	293	0.7	1.000 [3]	116.7	LOS F	27.8	195.8	1.00	1.08	11.0
Approach		2647	1.6	1.047	103.8	LOS F	109.8	779.4	0.85	1.22	13.1
West: Narellan Road (W)											
10	L	211	1.5	0.266	15.6	LOS B	3.6	25.6	0.29	0.67	38.8
11	T	372	0.3	1.062	139.4	LOS F	65.3	460.8	1.00	1.33	9.7
12	R	776	2.2	1.062	149.1	LOS F	65.3	460.8	1.00	1.23	10.8
Approach		1358	1.6	1.062	125.8	LOS F	65.3	460.8	0.89	1.17	11.7
All Vehicles		5906	2.1	1.365	100.5	LOS F	109.8	779.4	0.83	1.12	13.8

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-07 2026 1700D AM RMS Upgrade

Mount Gilead TIA
I-07 Appin Road / Oxley Street / Narellan Road / The Parkway
Ultimate year 2026 with 1700 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	749	6.6	0.933	25.2	LOS B	19.9	146.9	0.63	0.89	35.8
2	T	1926	2.0	1.061	117.7	LOS F	106.1	755.6	1.00	1.40	13.9
3	R	36	0.0	0.087	20.7	LOS B	0.9	6.3	0.59	0.70	38.3
Approach		2712	3.3	1.061	90.8	LOS F	106.1	755.6	0.89	1.25	16.9
East: The Parkway (E)											
4	L	25	4.2	0.014	7.7	X	X	X	X	0.60	37.8
5	T	365	1.1	1.116	194.4	LOS F	22.8	161.0	1.00	1.37	3.5
6	R	157	2.6	1.005	122.8	LOS F	14.7	105.0	1.00	1.13	5.6
Approach		547	1.9	1.116	165.3	LOS F	22.8	161.0	0.95	1.27	4.1
North: Oxley Street (N)											
7	L	135	4.7	0.169	9.7	LOS A	1.5	10.8	0.22	0.65	44.1
8	T	856	2.9	0.475	26.7	LOS B	19.6	140.6	0.73	0.65	30.9
9	R	250	1.9	1.063	160.5	LOS F	27.5	195.7	1.00	1.23	8.5
Approach		1241	2.9	1.063	51.8	LOS D	27.5	195.7	0.73	0.76	21.4
West: Narellan Road (W)											
10	L	311	1.7	0.616	35.4	LOS C	12.5	88.7	0.67	0.77	26.8
11	T	261	0.4	0.799	66.6	LOS E	15.3	107.2	1.00	0.89	17.0
12	R	361	9.9	0.799	76.7	LOS F	14.0	104.8	1.00	0.88	18.3
Approach		933	4.5	0.799	60.1	LOS E	15.3	107.2	0.89	0.85	19.9
All Vehicles		5433	3.3	1.116	84.1	LOS F	106.1	755.6	0.86	1.07	16.0

MOVEMENT SUMMARY

Site: I-07 2026 1700D PM RMS Upgrade

Mount Gilead TIA
I-07 Appin Road / Oxley Street / Narellan Road / The Parkway
Ultimate year 2026 with 1700 dwellings development PM
Signals - Fixed Time Cycle Time = 135 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	418	5.8	0.463	13.2	LOS A	8.8	64.4	0.39	0.70	44.2
2	T	996	2.4	0.729	38.0	LOS C	26.2	187.2	0.86	0.76	28.2
3	R	74	0.0	1.118	219.7	LOS F	9.8	68.3	1.00	1.28	8.6
Approach		1487	3.3	1.118	40.0	LOS C	26.2	187.2	0.74	0.77	27.9
East: The Parkway (E)											
4	L	28	3.7	0.016	7.7	X	X	X	X	0.60	37.8
5	T	206	2.6	0.558	64.9	LOS E	6.7	48.0	1.00	0.79	9.2
6	R	174	2.4	0.988	107.7	LOS F	14.8	106.1	1.00	1.08	6.3
Approach		408	2.6	0.988	79.1	LOS F	14.8	106.1	0.93	0.90	8.0
North: Oxley Street (N)											
7	L	404	2.1	0.605	12.9	LOS A	8.0	56.9	0.38	0.70	40.4
8	T	1942	1.6	0.894	34.6	LOS C	61.2	434.1	0.96	0.94	26.8
9	R	301	0.7	1.001 [3]	116.1	LOS F	27.8	195.8	1.00	1.13	11.1
Approach		2647	1.6	1.001	40.5	LOS C	61.2	434.1	0.87	0.93	24.5
West: Narellan Road (W)											
10	L	211	1.5	0.268	13.0	LOS A	2.7	19.4	0.24	0.66	41.2
11	T	372	0.3	0.920	70.2	LOS E	27.4	192.4	1.00	1.04	16.5
12	R	776	2.2	1.023	122.2	LOS F	36.9	263.1	1.00	1.13	12.7
Approach		1358	1.6	1.023	91.1	LOS F	36.9	263.1	0.88	1.03	15.1
All Vehicles		5901	2.1	1.118	54.7	LOS D	61.2	434.1	0.85	0.91	21.0

I-08 Intersection of Narellan Road and Hurley Street

MOVEMENT SUMMARY

Site: I-08 2026 1700D AM

Mount Gilead TIA
I-08 Narellan Road / Kellicar Road
Ultimate year 2026 with 1700 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	174	4.2	0.946	73.3	LOS F	48.5	352.4	1.00	1.05	17.1
2	T	1056	4.5	0.946	65.2	LOS E	48.5	352.4	1.00	1.06	17.2
3	R	151	2.1	0.480	65.0	LOS E	9.0	64.2	0.91	0.80	18.1
Approach		1380	4.2	0.946	66.2	LOS E	48.5	352.4	0.99	1.03	17.3
East: Kellicar Road (E)											
4	L	28	0.0	0.769	69.1	LOS E	17.1	125.5	0.99	0.89	10.4
5	T	488	6.3	0.769	61.2	LOS E	17.1	125.5	0.99	0.87	10.6
6	R	403	6.0	0.932	90.4	LOS F	15.9	117.0	1.00	0.99	8.1
Approach		920	5.9	0.932	74.3	LOS F	17.1	125.5	0.99	0.92	9.3
North: Narellan Road (N)											
7	L	1064	2.3	1.000 [3]	16.4	LOS B	32.4	231.3	0.73	0.98	41.6
8	T	841	4.3	0.648	39.5	LOS C	22.1	160.1	0.83	0.73	27.7
9	R	309	2.4	0.989	72.8	LOS F	21.7	155.0	1.00	0.86	20.1
Approach		2215	3.1	1.000	33.1	LOS C	32.4	231.3	0.80	0.86	31.1
West: Kellicar Road (W)											
10	L	127	5.8	0.270	34.9	LOS C	4.5	33.1	0.56	0.75	20.2
11	T	655	4.7	0.969	88.4	LOS F	27.6	201.1	1.00	1.12	9.7
12	R	147	2.9	0.667	73.6	LOS F	9.8	70.1	0.99	0.82	11.7
Approach		929	4.5	0.969	78.7	LOS F	27.6	201.1	0.94	1.02	10.8
All Vehicles		5444	4.1	1.000	56.2	LOS D	48.5	352.4	0.91	0.94	19.2

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-08 2026 1700D PM

Mount Gilead TIA
I-08 Narellan Road / Kellicar Road
Ultimate year 2026 with 1700 dwellings development PM
Signals - Fixed Time Cycle Time = 130 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	193	0.0	1.060	140.8	LOS F	57.4	410.0	1.00	1.36	10.1
2	T	905	3.6	1.060	132.8	LOS F	57.4	410.0	1.00	1.41	10.2
3	R	161	0.0	0.752	71.5	LOS F	10.3	72.3	1.00	0.85	16.9
Approach		1259	2.6	1.060	126.2	LOS F	57.4	410.0	1.00	1.33	10.7
East: Kellicar Road (E)											
4	L	52	0.0	1.101	175.5	LOS F	55.4	401.3	1.00	1.56	4.5
5	T	914	4.5	1.101	167.3	LOS F	55.4	401.3	1.00	1.56	4.5
6	R	763	2.1	1.129	201.2	LOS F	46.5	331.0	1.00	1.36	3.9
Approach		1728	3.3	1.129	182.5	LOS F	55.4	401.3	1.00	1.47	4.2
North: Narellan Road (N)											
7	L	579	2.4	0.504	10.8	LOS A	5.7	40.5	0.19	0.68	46.5
8	T	1165	1.8	1.127	186.6	LOS F	71.3	506.7	1.00	1.67	9.6
9	R	222	1.7	1.051	140.8	LOS F	21.8	154.7	1.00	1.19	12.4
Approach		1966	1.9	1.127	129.6	LOS F	71.3	506.7	0.76	1.33	13.0
West: Kellicar Road (W)											
10	L	277	0.8	0.550	35.4	LOS C	10.4	73.0	0.64	0.78	20.0
11	T	603	5.6	0.695	49.7	LOS D	17.0	124.5	0.94	0.80	15.1
12	R	246	0.4	0.721	63.3	LOS E	14.7	103.4	0.97	0.85	13.2
Approach		1126	3.3	0.721	49.1	LOS D	17.0	124.5	0.87	0.81	15.5
All Vehicles		6080	2.7	1.129	129.0	LOS F	71.3	506.7	0.90	1.27	9.6

I-09 Intersection of Narellan Road, Gilchrist Drive and Blaxland Road

MOVEMENT SUMMARY

Site: I-09 2026 1700D AM

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Ultimate year 2026 with 1700 dwellings development AM
Signals - Fixed Time Cycle Time = 150 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	14	53.8	0.036	20.5	LOS B	0.4	3.8	0.43	0.65	39.6
2	T	1336	5.6	1.214	270.0	LOS F	104.8	768.8	1.00	1.84	7.0
3	R	259	2.3	1.062	164.3	LOS F	29.7	212.0	1.00	1.23	11.0
Approach		1608	5.2	1.214	250.9	LOS F	104.8	768.8	1.00	1.73	7.5
East: Blaxland Road (E)											
4	L	402	3.1	1.000 [3]	58.3	LOS E	25.0	179.5	1.00	0.87	23.0
5	T	717	2.2	1.180	247.9	LOS F	52.6	375.7	1.00	1.62	7.6
6	R	603	10.0	1.204	266.5	LOS F	47.2	358.8	1.00	1.44	7.3
Approach		1721	5.3	1.204	210.1	LOS F	52.6	375.7	1.00	1.38	8.8
North: Narellan Road (N)											
7	L	756	7.8	0.933	23.1	LOS B	21.9	163.3	0.71	0.90	37.0
8	T	1730	3.9	1.142	195.6	LOS F	119.8	866.4	1.00	1.63	9.3
9	R	779	4.8	1.170	141.7	LOS F	48.2	350.9	1.00	1.18	12.4
Approach		3265	5.0	1.170	142.8	LOS F	119.8	866.4	0.93	1.35	12.1
West: Gilchrist Drive (W)											
10	L	811	3.5	0.843	44.2	LOS D	19.1	137.7	0.83	0.94	27.3
11	T	471	1.3	0.761	67.7	LOS E	17.1	121.1	1.00	0.88	20.3
12	R	21	0.0	0.152	67.2	LOS E	1.3	9.3	0.89	0.70	21.2
Approach		1302	2.7	0.843	53.1	LOS D	19.1	137.7	0.89	0.91	24.2
All Vehicles		7897	4.7	1.214	164.7	LOS F	119.8	866.4	0.95	1.36	10.8

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-09 2026 1700D PM

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Ultimate year 2026 with 1700 dwellings development PM
Signals - Fixed Time Cycle Time = 145 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	5	0.0	0.007	17.4	LOS B	0.1	0.9	0.40	0.63	40.7
2	T	1713	2.8	1.355	388.9	LOS F	160.8	1152.8	1.00	2.26	5.1
3	R	259	1.3	1.074	171.4	LOS F	30.0	212.1	1.00	1.27	10.6
Approach		1977	2.5	1.355	359.5	LOS F	160.8	1152.8	1.00	2.13	5.5
East: Blaxland Road (E)											
4	L	508	2.9	0.844	48.1	LOS D	28.7	205.8	0.99	0.91	25.8
5	T	1039	2.3	1.376	417.4	LOS F	100.4	716.6	1.00	2.10	4.8
6	R	595	2.4	1.264	314.4	LOS F	50.2	359.0	1.00	1.56	6.3
Approach		2142	2.5	1.376	301.2	LOS F	100.4	716.6	1.00	1.66	6.4
North: Narellan Road (N)											
7	L	542	3.1	0.714	21.6	LOS B	18.1	130.4	0.57	0.78	37.9
8	T	1537	3.0	1.230	279.3	LOS F	123.2	884.6	1.00	1.87	6.8
9	R	536	3.3	1.253	213.7	LOS F	48.7	350.9	1.00	1.26	8.8
Approach		2615	3.1	1.253	212.4	LOS F	123.2	884.6	0.91	1.52	8.7
West: Gilchrist Drive (W)											
10	L	764	3.1	1.000 [3]	50.2	LOS D	22.7	163.2	1.00	0.87	25.5
11	T	732	3.2	0.973	97.1	LOS F	34.0	244.7	1.00	1.16	15.8
12	R	77	0.0	0.556	70.2	LOS E	5.0	35.0	0.95	0.76	20.6
Approach		1573	2.9	1.000	73.0	LOS F	34.0	244.7	1.00	1.00	19.7
All Vehicles		8306	2.8	1.376	243.9	LOS F	160.8	1152.8	0.97	1.60	7.7

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

MOVEMENT SUMMARY

Site: I-09 2026 1700D AM RMS Upgrade

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Ultimate year 2026 with 1700 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	14	53.8	0.037	17.8	LOS B	0.3	3.4	0.38	0.64	41.5
2	T	1186	5.6	0.591	34.5	LOS C	19.9	146.3	0.75	0.66	29.7
3	R	408	2.3	0.745	72.2	LOS F	14.0	99.7	1.00	0.87	20.2
Approach		1608	5.2	0.745	44.0	LOS D	19.9	146.3	0.81	0.71	26.6
East: Blaxland Road (E)											
4	L	439	3.1	1.000 [3]	52.8	LOS D	25.0	179.5	1.00	0.87	24.5
5	T	703	2.2	1.081	159.5	LOS F	39.8	285.4	1.00	1.41	10.9
6	R	579	10.0	1.250	301.0	LOS F	47.2	359.0	1.00	1.56	6.5
Approach		1721	5.3	1.250	179.9	LOS F	47.2	359.0	1.00	1.33	10.0
North: Narellan Road (N)											
7	L	756	7.8	0.652	21.7	LOS B	22.2	165.9	0.65	0.88	37.9
8	T	1837	3.9	1.310	343.6	LOS F	162.2	1173.0	1.00	2.18	5.7
9	R	672	4.8	1.247	314.0	LOS F	53.8	391.7	1.00	1.64	6.3
Approach		3265	5.0	1.310	263.0	LOS F	162.2	1173.0	0.92	1.77	7.3
West: Gilchrist Drive (W)											
10	L	731	3.5	1.000 [3]	52.2	LOS D	22.6	163.2	1.00	0.86	24.9
11	T	550	1.3	0.838	67.2	LOS E	19.9	140.8	1.00	0.95	20.3
12	R	21	0.0	0.145	64.7	LOS E	1.3	8.8	0.91	0.70	21.8
Approach		1302	2.7	1.000	58.7	LOS E	22.6	163.2	1.00	0.90	22.7
All Vehicles		7897	4.7	1.310	166.6	LOS F	162.2	1173.0	0.93	1.31	10.7

MOVEMENT SUMMARY

Site: I-09 2026 1700D PM RMS Upgrade

Mount Gilead TIA
I-09 Narellan Road / Gilchrist Drive / Blaxland Road
Ultimate year 2026 with 1700 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Narellan Road (S)											
1	L	5	0.0	0.012	21.7	LOS B	0.2	1.1	0.48	0.63	37.7
2	T	1575	2.8	1.145	162.9	LOS F	72.3	518.0	1.00	1.46	10.8
3	R	397	1.3	1.079	172.5	LOS F	22.5	159.0	1.00	1.29	10.5
Approach		1977	2.5	1.145	164.5	LOS F	72.3	518.0	1.00	1.43	10.7
East: Blaxland Road (E)											
4	L	508	2.9	0.931	44.8	LOS D	26.7	191.7	1.00	0.89	26.9
5	T	896	2.3	1.181	242.2	LOS F	64.0	456.7	1.00	1.71	7.7
6	R	737	2.4	1.147	213.0	LOS F	50.2	359.0	1.00	1.38	8.8
Approach		2142	2.5	1.181	185.3	LOS F	64.0	456.7	1.00	1.40	9.8
North: Narellan Road (N)											
7	L	542	3.1	0.450	17.3	LOS B	15.8	113.6	0.51	0.74	40.8
8	T	1248	3.0	1.067	107.6	LOS F	52.3	376.0	1.00	1.27	14.8
9	R	824	3.3	1.136	216.2	LOS F	54.4	391.7	1.00	1.42	8.7
Approach		2615	3.1	1.136	123.1	LOS F	54.4	391.7	0.90	1.21	13.6
West: Gilchrist Drive (W)											
10	L	817	3.1	1.000 [3]	46.7	LOS D	22.7	163.2	1.00	0.87	26.5
11	T	679	3.2	0.900	72.8	LOS F	26.4	189.8	1.00	1.03	19.2
12	R	77	0.0	0.506	60.8	LOS E	4.5	31.6	0.90	0.75	22.7
Approach		1573	2.9	1.000	58.6	LOS E	26.4	189.8	1.00	0.93	22.6
All Vehicles		8306	2.8	1.181	136.8	LOS F	72.3	518.0	0.97	1.26	12.5

I-10 Intersection of Oxley Street and Camden Road

MOVEMENT SUMMARY

Site: I-10 2026 1700D AM

Mount Gilead TIA
I-10 Oxley Street / Camden Road
Ultimate year 2026 with 1700 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Oxley Street (S)											
1	L	260	1.6	0.842	12.6	LOS A	27.5	195.5	0.37	0.91	41.8
2	T	2209	2.1	0.842	3.6	LOS A	27.5	195.5	0.32	0.31	50.5
Approach		2469	2.0	0.842	4.6	LOS A	27.5	195.5	0.32	0.37	49.4
North: Oxley Street (N)											
8	T	1232	3.0	0.352	0.3	LOS A	1.6	11.7	0.08	0.05	56.8
9	R	87	0.0	0.823	86.9	LOS F	6.5	45.7	1.00	0.90	10.0
Approach		1319	2.8	0.823	6.0	LOS A	6.5	45.7	0.14	0.10	43.4
West: Camden Road (W)											
10	L	51	4.2	0.204	11.5	LOS A	0.8	6.1	0.30	0.67	31.3
12	R	77	2.7	0.844	89.2	LOS F	5.8	41.7	1.00	0.91	7.0
Approach		127	3.3	0.844	58.4	LOS E	5.8	41.7	0.72	0.81	10.2
All Vehicles		3916	2.3	0.844	6.8	LOS A	27.5	195.5	0.27	0.29	44.9

MOVEMENT SUMMARY

Site: I-10 2026 1700D PM

Mount Gilead TIA
I-10 Oxley Street / Camden Road
Ultimate year 2026 with 1700 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Oxley Street (S)											
1	L	193	0.0	0.688	27.5	LOS B	28.1	199.5	0.66	0.90	30.4
2	T	1202	2.5	0.688	19.1	LOS B	28.1	199.5	0.64	0.59	32.9
Approach		1395	2.2	0.688	20.2	LOS B	28.1	199.5	0.64	0.63	32.5
North: Oxley Street (N)											
8	T	2369	1.9	0.673	0.5	LOS A	5.6	39.7	0.15	0.08	54.3
9	R	76	1.4	0.641	81.3	LOS F	5.4	38.0	1.00	0.80	10.6
Approach		2445	1.9	0.673	3.0	LOS A	5.6	39.7	0.18	0.11	48.2
West: Camden Road (W)											
10	L	111	2.9	0.312	13.6	LOS A	2.3	16.7	0.37	0.69	28.7
12	R	346	0.0	0.669	56.3	LOS D	21.0	146.7	0.95	0.85	10.3
Approach		457	0.7	0.669	46.0	LOS D	21.0	146.7	0.81	0.81	12.3
All Vehicles		4297	1.9	0.688	13.1	LOS A	28.1	199.5	0.39	0.35	34.5

I-11 Intersection of Therry Road, Central Road and Woodhouse Drive

MOVEMENT SUMMARY

Site: I-11 2026 1700D AM

Mount Gilead TIA
I-11 Therry Road / Central Road / Woodhouse Drive
Ultimate year 2026 with 1700 dwellings development AM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Woodhouse Drive (S)											
1	L	327	2.3	0.441	9.5	LOS A	2.5	17.6	0.71	0.86	39.3
2	T	343	0.0	0.683	9.3	LOS A	5.9	41.7	0.82	0.94	38.1
3	R	329	1.0	0.683	16.2	LOS B	5.9	41.7	0.82	1.07	35.2
Approach		1000	1.1	0.683	11.6	LOS A	5.9	41.7	0.78	0.96	37.3
East: Therry Road (E)											
4	L	224	0.5	0.424	7.3	LOS A	2.9	20.3	0.61	0.64	45.8
5	T	484	0.9	0.424	6.2	LOS A	2.9	20.3	0.61	0.56	45.6
6	R	218	0.0	0.424	13.2	LOS A	2.8	19.4	0.62	0.82	42.8
Approach		926	0.6	0.424	8.1	LOS A	2.9	20.3	0.61	0.64	44.9
North: Central Road (N)											
7	L	93	8.0	0.112	8.5	LOS A	0.6	4.4	0.68	0.72	34.0
8	T	11	20.0	0.133	8.3	LOS A	0.6	5.0	0.68	0.70	33.1
9	R	77	9.6	0.133	14.9	LOS B	0.6	5.0	0.68	0.86	31.0
Approach		180	9.4	0.133	11.2	LOS A	0.6	5.0	0.68	0.78	32.4
West: Therry Road (W)											
10	L	195	3.8	0.587	14.6	LOS B	5.9	42.4	0.97	1.06	43.4
11	T	289	1.8	0.587	13.6	LOS A	5.9	42.4	0.97	1.06	43.1
12	R	285	1.1	0.587	21.6	LOS B	5.4	38.0	0.95	1.10	39.1
Approach		769	2.1	0.587	16.8	LOS B	5.9	42.4	0.96	1.08	41.5
All Vehicles		2876	1.7	0.683	11.9	LOS A	5.9	42.4	0.77	0.88	41.0

MOVEMENT SUMMARY

Site: I-11 2026 1700D PM

Mount Gilead TIA
I-11 Therry Road / Central Road / Woodhouse Drive
Ultimate year 2026 with 1700 dwellings development PM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Woodhouse Drive (S)											
1	L	234	3.2	0.289	8.6	LOS A	1.5	11.1	0.67	0.75	39.6
2	T	99	0.0	0.307	6.8	LOS A	1.8	12.5	0.67	0.63	39.2
3	R	199	1.6	0.307	13.7	LOS A	1.8	12.5	0.67	0.86	37.1
Approach		532	2.0	0.307	10.2	LOS A	1.8	12.5	0.67	0.77	38.5
East: Therry Road (E)											
4	L	311	0.7	0.498	11.2	LOS A	4.1	29.1	0.85	0.92	43.2
5	T	380	1.7	0.498	10.7	LOS A	4.1	29.1	0.84	0.93	42.9
6	R	95	2.2	0.498	17.9	LOS B	3.9	27.5	0.84	1.02	39.3
Approach		785	1.3	0.498	11.7	LOS A	4.1	29.1	0.85	0.93	42.5
North: Central Road (N)											
7	L	264	0.0	0.420	10.6	LOS A	2.3	16.0	0.77	0.92	32.3
8	T	182	0.0	0.514	8.9	LOS A	3.4	24.2	0.81	0.86	32.4
9	R	245	3.4	0.514	15.8	LOS B	3.4	24.2	0.81	1.02	30.6
Approach		692	1.2	0.514	12.0	LOS A	3.4	24.2	0.79	0.94	31.6
West: Therry Road (W)											
10	L	67	10.9	0.470	7.8	LOS A	3.2	22.7	0.62	0.66	48.6
11	T	609	0.9	0.470	6.3	LOS A	3.2	22.7	0.62	0.58	48.4
12	R	356	3.8	0.470	13.5	LOS A	3.1	22.1	0.63	0.80	44.9
Approach		1033	2.5	0.470	8.9	LOS A	3.2	22.7	0.62	0.66	47.1
All Vehicles		3041	1.8	0.514	10.6	LOS A	4.1	29.1	0.73	0.81	42.2

I-12 Intersection of Therry Road and Gilchrist Drive

MOVEMENT SUMMARY

Site: I-12 2026 1700D AM

Mount Gilead TIA
I-12 Therry Road / Gilcrist Drive / Shopping Centre Access
Ultimate year 2026 with 1700 dwellings development AM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South East: Therry Road (SE)											
4	L	76	1.4	0.344	7.9	LOS A	1.7	12.2	0.55	0.70	48.8
5	T	237	0.4	0.344	6.7	LOS A	1.7	12.2	0.55	0.60	49.0
6	R	658	3.0	0.560	13.5	LOS A	4.0	28.6	0.63	0.81	44.0
Approach		971	2.3	0.560	11.4	LOS A	4.0	28.6	0.60	0.75	45.4
North East: Gilchrist Drive (NE)											
7	L	466	4.5	0.259	5.5	X	X	X	X	0.47	47.3
8	T	267	2.8	0.260	5.6	LOS A	1.4	10.2	0.41	0.49	43.7
9	R	139	0.0	0.260	12.1	LOS A	1.4	10.2	0.42	0.77	39.4
Approach		873	3.3	0.260	6.6	LOS A	1.4	10.2	0.19	0.53	44.6
North West: Shopping Centre Access (NW)											
10	L	77	2.7	0.152	12.4	LOS A	0.9	6.7	0.86	0.88	29.9
11	T	54	2.0	0.152	12.4	LOS A	0.9	6.7	0.84	0.89	29.4
12	R	23	0.0	0.152	19.3	LOS B	0.8	5.9	0.84	0.98	27.0
Approach		154	2.1	0.152	13.5	LOS A	0.9	6.7	0.85	0.90	29.2
South West: Gilchrist Drive (SW)											
1	L	241	0.0	0.688	13.5	LOS A	6.4	45.4	0.90	1.09	44.3
2	T	612	2.6	0.688	13.1	LOS A	6.4	45.4	0.89	1.08	43.7
3	R	167	0.6	0.688	20.6	LOS B	5.8	41.4	0.89	1.13	40.2
Approach		1020	1.7	0.688	14.4	LOS A	6.4	45.4	0.89	1.09	43.2
All Vehicles		3017	2.3	0.688	11.1	LOS A	6.4	45.4	0.60	0.81	43.9

MOVEMENT SUMMARY

Site: I-12 2026 1700D PM

Mount Gilead TIA
I-12 Therry Road / Gilchrist Drive / Shopping Centre Access
Ultimate year 2026 with 1700 dwellings development PM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South East: Therry Road (SE)											
4	L	93	0.0	0.456	11.6	LOS A	2.9	20.2	0.80	0.95	46.1
5	T	199	0.5	0.456	10.4	LOS A	2.9	20.2	0.80	0.92	46.4
6	R	542	4.3	0.650	18.4	LOS B	5.9	43.2	0.89	1.09	41.0
Approach		834	2.9	0.650	15.7	LOS B	5.9	43.2	0.86	1.03	42.6
North East: Gilchrist Drive (NE)											
7	L	677	3.3	0.373	5.4	X	X	X	X	0.47	47.3
8	T	657	2.7	0.587	7.3	LOS A	4.4	31.7	0.68	0.69	41.2
9	R	122	0.0	0.587	13.9	LOS A	4.4	31.7	0.71	0.95	38.7
Approach		1456	2.7	0.587	7.0	LOS A	4.4	31.7	0.37	0.61	43.5
North West: Shopping Centre Access (NW)											
10	L	147	0.7	0.410	9.8	LOS A	2.7	19.0	0.80	0.88	33.3
11	T	305	0.7	0.410	9.0	LOS A	2.7	19.0	0.80	0.83	32.9
12	R	161	0.0	0.410	16.2	LOS B	2.5	17.8	0.79	0.99	29.4
Approach		614	0.5	0.410	11.1	LOS A	2.7	19.0	0.80	0.88	31.8
South West: Gilchrist Drive (SW)											
1	L	53	0.0	0.277	8.4	LOS A	1.6	11.2	0.72	0.74	47.9
2	T	337	1.6	0.277	7.5	LOS A	1.6	11.2	0.72	0.68	47.6
3	R	45	0.0	0.277	14.5	LOS A	1.5	10.4	0.72	0.96	44.9
Approach		435	1.2	0.277	8.4	LOS A	1.6	11.2	0.72	0.72	47.3
All Vehicles		3338	2.2	0.650	10.1	LOS A	5.9	43.2	0.61	0.78	42.4

I-13 Intersection of Gilchrist Drive and Kellicar Road

MOVEMENT SUMMARY

Site: I-13 2026 1700D AM

Mount Gilead TIA
I-13 Narellan Road / Gilchrist Drive / Blaxland Road
Ultimate year 2026 with 1700 dwellings development AM
Signals - Fixed Time Cycle Time = 105 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Gilchrist Drive (S)											
1	L	278	4.2	0.872	44.2	LOS D	30.2	216.6	0.94	1.03	17.3
2	T	943	1.6	0.872	38.0	LOS C	30.6	216.9	0.96	0.97	17.2
3	R	143	2.9	0.574	53.3	LOS D	6.7	48.3	0.94	0.79	14.6
Approach		1364	2.2	0.872	40.9	LOS C	30.6	216.9	0.95	0.96	16.9
East: Kellicar Road (E)											
4	L	115	7.3	0.288	24.6	LOS B	4.3	31.4	0.78	0.79	29.2
5	T	131	1.6	0.288	34.8	LOS C	4.3	31.4	0.88	0.70	22.0
6	R	26	8.0	0.150	41.1	LOS C	1.0	7.7	0.95	0.71	21.4
Approach		272	4.7	0.288	31.1	LOS C	4.3	31.4	0.84	0.74	24.5
North: Gilchrist Drive (N)											
7	L	226	5.6	0.688	35.0	LOS C	19.4	139.7	0.89	0.92	31.5
8	T	736	1.9	0.688	29.7	LOS C	20.5	145.7	0.91	0.81	31.2
9	R	485	4.6	0.885	61.7	LOS E	13.5	97.9	1.00	0.92	22.4
Approach		1447	3.3	0.885	41.3	LOS C	20.5	145.7	0.94	0.86	27.6
West: Kellicar Road (W)											
10	L	376	5.9	0.781	35.8	LOS C	13.9	101.9	0.72	0.84	16.2
11	T	85	2.5	0.130	40.1	LOS C	1.8	12.5	0.83	0.62	14.1
12	R	113	6.5	0.381	41.6	LOS C	4.5	33.2	0.86	0.76	14.7
Approach		574	5.5	0.781	37.6	LOS C	13.9	101.9	0.76	0.79	15.6
All Vehicles		3657	3.4	0.885	39.8	LOS C	30.6	216.9	0.91	0.88	22.3

MOVEMENT SUMMARY

Site: I-13 2026 1700D PM

Mount Gilead TIA
I-13 Narellan Road / Gilchrist Drive / Blaxland Road
Ultimate year 2026 with 1700 dwellings development PM
Signals - Fixed Time Cycle Time = 95 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Gilchrist Drive (S)											
1	L	171	6.8	0.799	41.9	LOS C	19.8	143.2	0.92	0.98	18.1
2	T	785	2.5	0.799	34.5	LOS C	20.3	145.1	0.93	0.89	18.3
3	R	195	3.2	0.849	58.6	LOS E	9.8	70.8	1.00	0.94	13.6
Approach		1151	3.3	0.849	39.7	LOS C	20.3	145.1	0.94	0.91	17.3
East: Kellicar Road (E)											
4	L	231	5.5	0.541	31.2	LOS C	8.4	61.3	0.86	0.90	25.5
5	T	271	0.0	0.541	34.3	LOS C	9.4	65.5	0.93	0.78	22.2
6	R	125	1.7	1.001	107.9	LOS F	9.6	68.5	1.00	1.25	10.4
Approach		626	2.4	1.001	47.9	LOS D	9.6	68.5	0.92	0.92	18.8
North: Gilchrist Drive (N)											
7	L	204	3.1	0.967	74.7	LOS F	37.1	266.2	1.00	1.26	20.2
8	T	938	2.6	0.967	66.9	LOS E	37.1	266.2	1.00	1.26	20.3
9	R	443	3.8	0.970	77.3	LOS F	13.5	97.9	1.00	1.12	19.3
Approach		1585	3.0	0.970	70.8	LOS F	37.1	266.2	1.00	1.22	20.0
West: Kellicar Road (W)											
10	L	656	4.0	0.923	30.7	LOS C	18.0	130.6	0.89	0.90	18.1
11	T	323	0.0	0.240	22.4	LOS B	4.5	31.8	0.64	0.52	20.9
12	R	280	3.8	1.000 [3]	60.3	LOS E	12.4	89.8	1.00	1.06	11.0
Approach		1259	3.0	1.000	35.2	LOS C	18.0	130.6	0.85	0.84	16.2
All Vehicles		4621	3.0	1.001	50.2	LOS D	37.1	266.2	0.93	1.00	18.7

I-0A Intersection of Appin Road and Mount Gilead Northern Access

MOVEMENT SUMMARY

Site: I-0A 2026 1700D AM

Mount Gilead TIA
I-0A Appin Road / Mount Gilead Northern Access
Ultimate year 2026 with 1700 dwellings development AM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	3	0.0	0.559	9.4	LOS A	4.8	34.4	0.32	0.63	57.1
2	T	1695	3.4	0.559	9.6	LOS A	4.8	34.6	0.33	0.55	59.0
Approach		1698	3.4	0.559	9.6	LOS A	4.8	34.6	0.33	0.55	59.0
North: Appin Road (N)											
8	T	722	8.0	0.252	9.4	LOS A	1.8	13.6	0.11	0.55	60.9
9	R	74	7.1	0.252	13.0	LOS A	1.8	13.2	0.11	0.85	52.9
Approach		796	7.9	0.252	9.7	LOS A	1.8	13.6	0.11	0.58	60.2
West: Mount Gilead Northern Access (W)											
10	L	280	1.9	0.564	15.6	LOS B	3.3	23.5	0.83	1.04	31.1
12	R	15	0.0	0.564	20.9	LOS B	3.3	23.5	0.83	1.09	29.3
Approach		295	1.8	0.564	15.9	LOS B	3.3	23.5	0.83	1.04	31.0
All Vehicles		2788	4.5	0.564	10.3	LOS A	4.8	34.6	0.32	0.61	57.0

MOVEMENT SUMMARY

Site: I-0A 2026 1700D PM

Mount Gilead TIA
I-0A Appin Road / Mount Gilead Northern Access
Ultimate year 2026 with 1700 dwellings development PM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	15	0.0	0.314	10.3	LOS A	1.9	14.0	0.47	0.70	56.2
2	T	757	5.3	0.314	10.7	LOS A	1.9	14.0	0.48	0.64	57.8
Approach		772	5.2	0.314	10.6	LOS A	1.9	14.0	0.48	0.65	57.7
North: Appin Road (N)											
8	T	1961	1.7	0.660	9.0	LOS A	8.6	60.8	0.07	0.56	61.3
9	R	280	1.9	0.660	12.8	LOS A	8.6	60.8	0.08	0.85	52.9
Approach		2241	1.7	0.660	9.5	LOS A	8.6	60.8	0.07	0.60	60.2
West: Mount Gilead Northern Access (W)											
10	L	74	7.1	0.103	8.6	LOS A	0.4	3.0	0.56	0.74	39.2
12	R	3	0.0	0.103	13.8	LOS A	0.4	3.0	0.56	0.88	35.8
Approach		77	6.8	0.103	8.9	LOS A	0.4	3.0	0.56	0.75	39.1
All Vehicles		3089	2.7	0.660	9.8	LOS A	8.6	60.8	0.19	0.61	59.2

I-0B Intersection of Appin Road and Mount Gilead Central Access

MOVEMENT SUMMARY

Site: I-0B 2026 1700 AM - Roundabout

Mount Gilead TIA
I-0B Appin Road / Mount Gilead Central Access
Ultimate year 2026 with 1700 dwellings development AM - Roundabout
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	4	0.0	0.004	9.2	LOS A	0.0	0.1	0.25	0.55	57.3
2	T	1401	4.1	0.834	10.5	LOS A	16.3	118.2	0.62	0.52	56.6
Approach		1405	4.1	0.834	10.4	LOS A	16.3	118.2	0.62	0.52	56.6
North: Appin Road (N)											
8	T	658	8.0	0.229	9.5	LOS A	1.9	14.2	0.13	0.55	60.7
9	R	79	6.7	0.229	13.1	LOS A	1.8	13.7	0.13	0.82	52.8
Approach		737	7.9	0.229	9.9	LOS A	1.9	14.2	0.13	0.57	59.8
West: Mount Gilead Central Access (W)											
10	L	302	1.7	0.165	3.7	X	X	X	X	0.39	38.8
12	R	16	0.0	0.067	34.3	LOS C	0.5	3.7	1.00	0.85	21.4
Approach		318	1.7	0.165	5.2	LOS A	0.5	3.7	0.05	0.41	36.3
All Vehicles		2460	4.9	0.834	9.6	LOS A	16.3	118.2	0.40	0.52	56.4

MOVEMENT SUMMARY

Site: I-0B 2026 1700 PM - Roundabout

Mount Gilead TIA
I-0B Appin Road / Mount Gilead Central Access
Ultimate year 2026 with 1700 dwellings development AM - Roundabout
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	16	0.0	0.018	10.7	LOS A	0.1	0.7	0.48	0.60	55.4
2	T	698	5.7	0.520	11.3	LOS A	4.3	31.8	0.63	0.67	56.5
Approach		714	5.6	0.520	11.3	LOS A	4.3	31.8	0.63	0.67	56.4
North: Appin Road (N)											
8	T	1662	1.6	0.572	9.1	LOS A	7.3	51.5	0.08	0.55	61.1
9	R	302	1.7	0.572	12.8	LOS A	7.3	51.5	0.09	0.82	52.8
Approach		1964	1.7	0.572	9.7	LOS A	7.3	51.5	0.09	0.59	59.8
West: Mount Gilead Central Access (W)											
10	L	79	6.7	0.045	3.8	X	X	X	X	0.39	38.8
12	R	4	0.0	0.006	15.5	LOS B	0.0	0.3	0.76	0.63	33.5
Approach		83	6.3	0.045	4.4	LOS A	0.0	0.3	0.04	0.40	38.2
All Vehicles		2761	2.8	0.572	9.9	LOS A	7.3	51.5	0.23	0.61	58.6

I-0C Intersection of Appin Road and Mount Gilead Southern Access

MOVEMENT SUMMARY

Site: I-0C 2026 1700D AM

Mount Gilead TIA
I-0C Appin Road / Mount Gilead Southern Access
Ultimate year 2026 with 1700 dwellings development AM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	7	0.0	0.660	8.4	LOS A	6.4	47.0	0.56	0.61	52.2
2	T	863	5.0	0.660	8.8	LOS A	6.4	47.0	0.56	0.58	53.1
Approach		871	5.0	0.660	8.8	LOS A	6.4	47.0	0.56	0.58	53.1
North: Appin Road (N)											
8	T	533	8.1	0.321	7.6	LOS A	2.5	18.5	0.16	0.51	56.1
9	R	141	6.7	0.124	11.7	LOS A	0.7	5.3	0.16	0.66	49.1
Approach		674	7.8	0.321	8.5	LOS A	2.5	18.5	0.16	0.54	54.5
West: Mount Gilead Southern Access (W)											
10	L	537	1.8	0.714	20.3	LOS B	9.8	69.6	1.00	1.23	24.3
12	R	27	0.0	0.057	17.5	LOS B	0.3	2.3	0.80	0.81	28.4
Approach		564	1.7	0.714	20.1	LOS B	9.8	69.6	0.99	1.21	24.5
All Vehicles		2108	5.0	0.714	11.7	LOS A	9.8	69.6	0.55	0.73	47.0

MOVEMENT SUMMARY

Site: I-0C 2026 1700D PM

Mount Gilead TIA
I-0C Appin Road / Mount Gilead Southern Access
Ultimate year 2026 with 1700 dwellings development PM
Roundabout

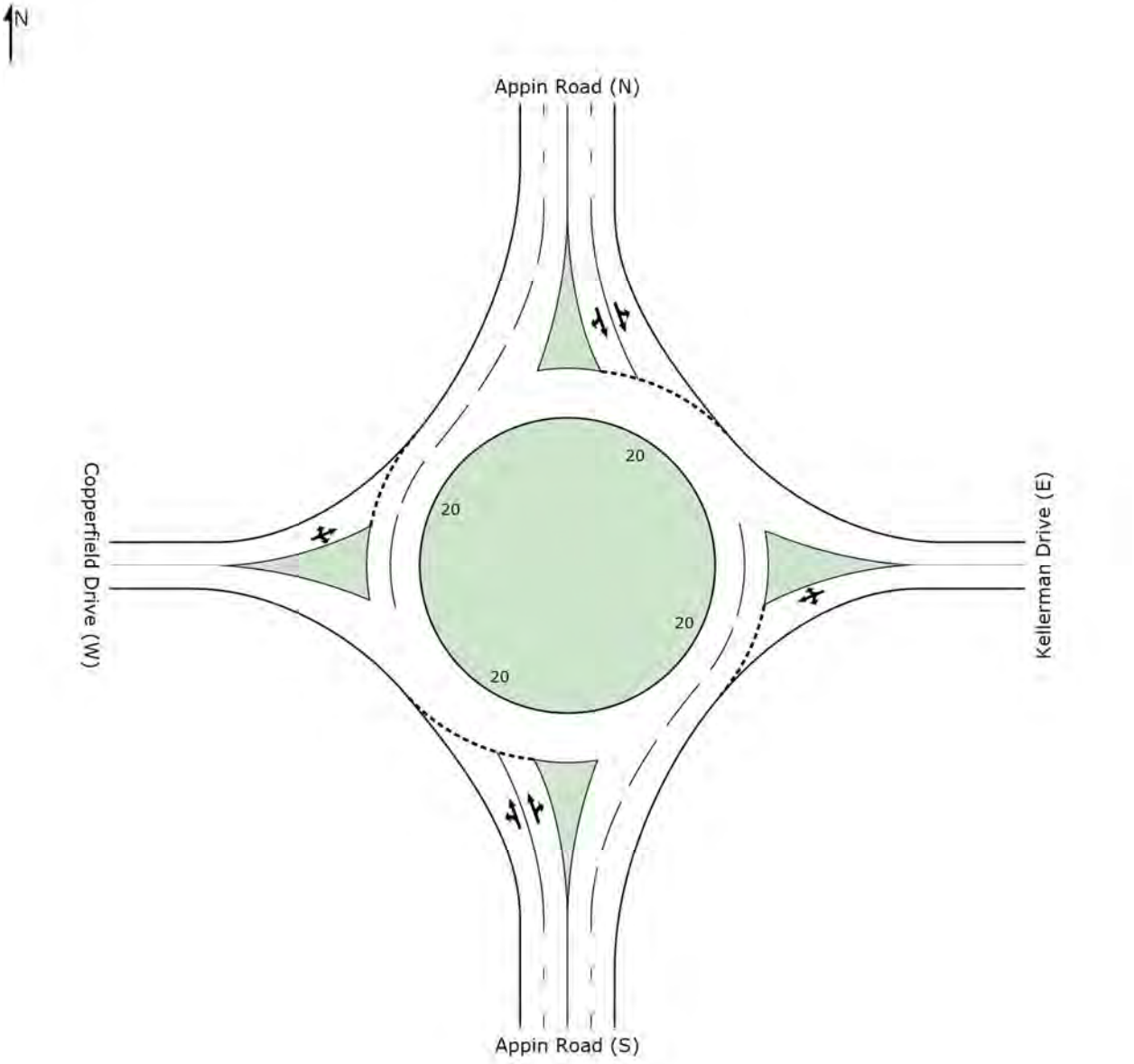
Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	27	0.0	0.660	14.6	LOS B	7.0	50.9	0.84	0.98	47.0
2	T	567	4.5	0.660	14.9	LOS B	7.0	50.9	0.84	0.97	48.3
Approach		595	4.2	0.660	14.9	LOS B	7.0	50.9	0.84	0.97	48.3
North: Appin Road (N)											
8	T	1129	1.6	0.621	7.3	LOS A	7.4	52.5	0.11	0.51	56.6
9	R	537	1.8	0.369	11.4	LOS A	2.9	20.6	0.08	0.68	49.4
Approach		1666	1.6	0.621	8.6	LOS A	7.4	52.5	0.10	0.56	54.1
West: Mount Gilead Southern Access (W)											
10	L	141	6.7	0.149	8.9	LOS A	1.0	7.6	0.71	0.70	34.7
12	R	7	0.0	0.012	14.4	LOS A	0.1	0.5	0.67	0.68	31.2
Approach		148	6.4	0.149	9.2	LOS A	1.0	7.6	0.70	0.70	34.5
All Vehicles		2409	2.6	0.660	10.2	LOS A	7.4	52.5	0.32	0.67	51.8

Mitigation measures - proposed intersection upgrade

I-02 Intersection of Appin Road, Kellerman Drive and Copperfield Drive

INTERSECTION LAYOUT – YEAR 2021



Year 2021 – Future conditions with development (850 dwellings)

MOVEMENT SUMMARY

Site: I-02 2021 850D AM - UP

Mount Gilead TIA
I-02 Appin Road / Kellerman Drive / Copperfield Drive - Proposed upgrade layout
Interim year 2021 with 850 dwellings development AM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	80	0.0	0.560	9.4	LOS A	4.8	34.5	0.64	0.70	51.9
2	T	1281	3.9	0.560	9.3	LOS A	4.8	34.5	0.65	0.67	52.4
3	R	3	0.0	0.560	14.2	LOS A	4.6	33.4	0.67	0.82	49.2
Approach		1364	3.7	0.560	9.3	LOS A	4.8	34.5	0.65	0.67	52.3
East: Kellerman Drive (E)											
4	L	14	0.0	0.312	10.2	LOS A	1.4	10.3	0.59	0.79	49.6
5	T	155	9.5	0.312	8.4	LOS A	1.4	10.3	0.59	0.71	47.9
6	R	81	2.6	0.312	15.0	LOS B	1.4	10.3	0.59	0.92	45.4
Approach		249	6.8	0.312	10.6	LOS A	1.4	10.3	0.59	0.78	47.1
North: Appin Road (N)											
7	L	49	2.1	0.215	9.6	LOS A	1.4	10.5	0.37	0.63	56.6
8	T	467	9.7	0.215	10.1	LOS A	1.4	10.5	0.38	0.57	58.5
9	R	35	9.1	0.215	14.2	LOS A	1.4	10.3	0.38	0.79	52.8
Approach		552	9.0	0.215	10.3	LOS A	1.4	10.5	0.38	0.59	58.0
West: Copperfield Drive (W)											
10	L	127	3.3	0.513	13.9	LOS A	2.9	20.9	0.82	0.98	44.7
11	T	25	8.3	0.513	12.4	LOS A	2.9	20.9	0.82	0.96	44.1
12	R	116	1.8	0.513	19.7	LOS B	2.9	20.9	0.82	1.03	43.2
Approach		268	3.1	0.513	16.3	LOS B	2.9	20.9	0.82	1.00	44.0
All Vehicles		2434	5.1	0.560	10.4	LOS A	4.8	34.5	0.60	0.70	51.8

MOVEMENT SUMMARY

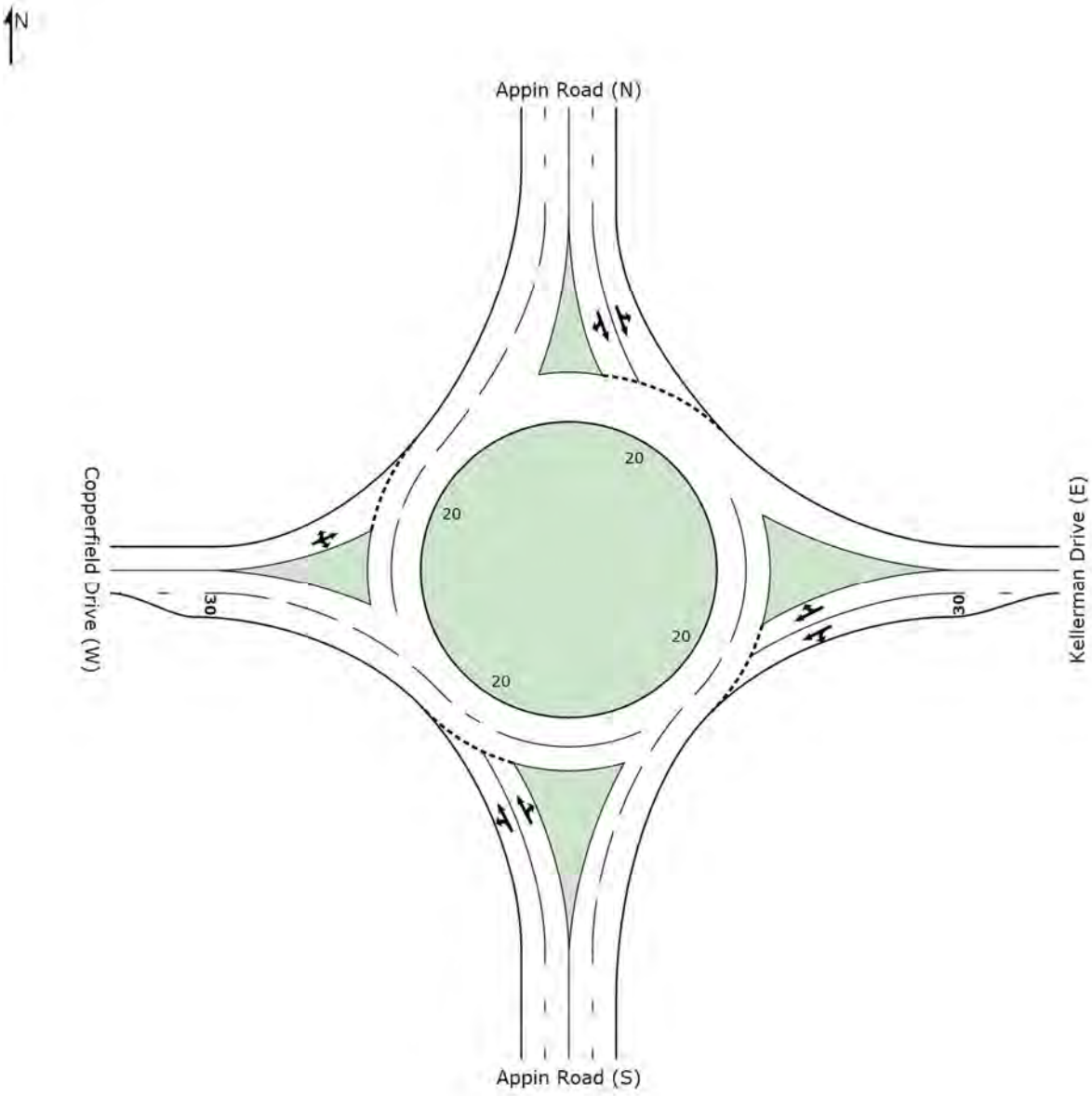
Site: I-02 2021 850D PM - UP

Mount Gilead TIA
I-02 Appin Road / Kellerman Drive / Copperfield Drive - Proposed upgrade layout
Interim year 2021 with 850 dwellings development PM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	34	3.1	0.265	9.0	LOS A	1.8	12.9	0.50	0.66	52.6
2	T	579	5.5	0.265	8.7	LOS A	1.8	12.9	0.51	0.61	53.4
3	R	20	0.0	0.265	13.5	LOS A	1.7	12.5	0.52	0.81	49.6
Approach		633	5.2	0.265	8.9	LOS A	1.8	12.9	0.51	0.62	53.2
East: Kellerman Drive (E)											
4	L	18	0.0	0.536	17.1	LOS B	3.1	22.9	0.86	1.02	43.8
5	T	138	6.1	0.536	15.2	LOS B	3.1	22.9	0.86	1.00	42.0
6	R	73	8.7	0.536	22.1	LOS B	3.1	22.9	0.86	1.06	40.4
Approach		228	6.5	0.536	17.6	LOS B	3.1	22.9	0.86	1.02	41.6
North: Appin Road (N)											
7	L	80	1.3	0.626	10.6	LOS A	6.0	42.3	0.66	0.69	55.1
8	T	1452	1.6	0.626	10.9	LOS A	6.0	42.3	0.67	0.67	56.1
9	R	49	6.4	0.626	15.4	LOS B	5.9	41.7	0.69	0.80	52.2
Approach		1581	1.7	0.626	11.0	LOS A	6.0	42.3	0.67	0.68	56.0
West: Copperfield Drive (W)											
10	L	48	0.0	0.337	9.6	LOS A	1.6	11.2	0.62	0.78	48.1
11	T	75	5.6	0.337	8.2	LOS A	1.6	11.2	0.62	0.70	47.3
12	R	145	2.2	0.337	15.6	LOS B	1.6	11.2	0.62	0.92	46.3
Approach		268	2.7	0.337	12.5	LOS A	1.6	11.2	0.62	0.83	46.9
All Vehicles		2711	3.0	0.626	11.2	LOS A	6.0	42.3	0.64	0.71	52.9

INTERSECTION LAYOUT – YEAR 2026



Year 2026 – Future conditions with development (1500 dwellings)

MOVEMENT SUMMARY

Site: I-02 2026 1500D AM - UP2

Mount Gilead TIA
I-02 Appin Road / Kellerman Drive / Copperfield Drive - Proposed upgrade layout
Ultimate year 2026 with 1500 dwellings development AM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	105	1.0	0.787	11.3	LOS A	10.0	72.3	0.80	0.82	51.1
2	T	1736	3.6	0.787	11.5	LOS A	10.0	72.3	0.81	0.81	51.2
3	R	3	0.0	0.787	16.5	LOS B	10.0	72.2	0.82	0.91	47.2
Approach		1844	3.4	0.787	11.5	LOS A	10.0	72.3	0.81	0.81	51.2
East: Kellerman Drive (E)											
4	L	15	0.0	0.080	11.8	LOS A	0.3	2.2	0.59	0.82	48.7
5	T	163	9.7	0.244	8.3	LOS A	1.1	8.1	0.60	0.69	47.6
6	R	85	2.5	0.244	14.7	LOS B	1.1	8.1	0.60	0.91	45.7
Approach		263	6.8	0.244	10.6	LOS A	1.1	8.1	0.60	0.77	47.0
North: Appin Road (N)											
7	L	52	2.0	0.281	9.7	LOS A	2.0	14.9	0.42	0.64	56.4
8	T	622	9.6	0.281	10.2	LOS A	2.0	14.9	0.42	0.59	58.1
9	R	37	8.6	0.281	14.3	LOS A	1.9	14.5	0.43	0.78	52.7
Approach		711	9.0	0.281	10.4	LOS A	2.0	14.9	0.42	0.60	57.7
West: Copperfield Drive (W)											
10	L	134	3.1	0.787	25.8	LOS B	5.8	41.7	0.94	1.18	36.3
11	T	26	8.0	0.787	24.3	LOS B	5.8	41.7	0.94	1.17	35.5
12	R	127	2.5	0.787	31.6	LOS C	5.8	41.7	0.94	1.19	36.0
Approach		287	3.3	0.787	28.3	LOS B	5.8	41.7	0.94	1.18	36.1
All Vehicles		3105	5.0	0.787	12.7	LOS A	10.0	72.3	0.71	0.80	50.2

MOVEMENT SUMMARY

Site: I-02 2026 1500D PM - UP2

Mount Gilead TIA
I-02 Appin Road / Kellerman Drive / Copperfield Drive - Proposed upgrade layout
Ultimate year 2026 with 1500 dwellings development PM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	41	5.1	0.356	8.8	LOS A	2.2	16.0	0.50	0.68	52.7
2	T	737	5.9	0.356	8.7	LOS A	2.2	16.0	0.50	0.63	53.4
3	R	21	0.0	0.356	13.3	LOS A	2.1	15.6	0.51	0.84	49.8
Approach		799	5.7	0.356	8.8	LOS A	2.2	16.0	0.50	0.64	53.2
East: Kellerman Drive (E)											
4	L	19	0.0	0.190	18.7	LOS B	0.9	6.8	0.89	0.96	42.9
5	T	144	5.8	0.577	20.3	LOS B	4.0	29.6	0.96	1.06	38.2
6	R	76	8.3	0.577	28.1	LOS B	4.0	29.6	0.98	1.10	36.8
Approach		239	6.2	0.577	22.7	LOS B	4.0	29.6	0.96	1.07	38.1
North: Appin Road (N)											
7	L	84	1.3	0.838	14.4	LOS A	15.1	107.2	0.93	0.82	52.6
8	T	1917	1.8	0.838	15.2	LOS B	15.2	108.5	0.95	0.84	53.4
9	R	52	6.1	0.838	20.4	LOS B	15.2	108.5	0.97	0.89	47.3
Approach		2053	1.8	0.838	15.3	LOS B	15.2	108.5	0.95	0.84	53.2
West: Copperfield Drive (W)											
10	L	51	0.0	0.414	10.7	LOS A	2.1	15.2	0.69	0.88	47.6
11	T	78	5.4	0.414	9.3	LOS A	2.1	15.2	0.69	0.82	46.8
12	R	175	2.4	0.414	16.7	LOS B	2.1	15.2	0.69	0.97	45.5
Approach		303	2.8	0.414	13.8	LOS A	2.1	15.2	0.69	0.91	46.1
All Vehicles		3394	3.1	0.838	14.2	LOS A	15.2	108.5	0.82	0.82	51.1

Year 2026 – Future conditions with development (1700 dwellings)

MOVEMENT SUMMARY

Site: I-02 2026 1700D AM - UP2

Mount Gilead TIA
I-02 Appin Road / Kellerman Drive / Copperfield Drive - Proposed upgrade layout
Ultimate year 2026 with 1700 dwellings development AM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	113	0.9	0.841	12.5	LOS A	12.9	92.7	0.87	0.86	50.2
2	T	1858	3.3	0.841	12.8	LOS A	12.9	92.7	0.89	0.87	50.5
3	R	3	0.0	0.841	17.9	LOS B	12.9	92.7	0.90	0.93	46.0
Approach		1974	3.2	0.841	12.8	LOS A	12.9	92.7	0.89	0.87	50.4
East: Kellerman Drive (E)											
4	L	15	0.0	0.081	11.9	LOS A	0.3	2.2	0.60	0.83	48.6
5	T	163	9.7	0.247	8.4	LOS A	1.1	8.3	0.61	0.69	47.6
6	R	85	2.5	0.247	14.7	LOS B	1.1	8.3	0.61	0.92	45.7
Approach		263	6.8	0.247	10.6	LOS A	1.1	8.3	0.61	0.77	46.9
North: Appin Road (N)											
7	L	52	2.0	0.293	9.7	LOS A	2.1	15.8	0.43	0.64	56.3
8	T	653	9.2	0.293	10.2	LOS A	2.1	15.8	0.43	0.59	58.1
9	R	37	8.6	0.293	14.4	LOS A	2.0	15.4	0.44	0.78	52.7
Approach		741	8.7	0.293	10.4	LOS A	2.1	15.8	0.43	0.60	57.7
West: Copperfield Drive (W)											
10	L	134	3.1	0.912	44.7	LOS D	8.8	63.2	0.98	1.39	28.0
11	T	26	8.0	0.912	43.2	LOS D	8.8	63.2	0.98	1.39	27.2
12	R	129	2.4	0.912	50.5	LOS D	8.8	63.2	0.98	1.40	28.4
Approach		289	3.3	0.912	47.1	LOS D	8.8	63.2	0.98	1.40	28.1
All Vehicles		3267	4.7	0.912	15.1	LOS B	12.9	92.7	0.77	0.85	48.1

MOVEMENT SUMMARY

Site: I-02 2026 1700D PM - UP2

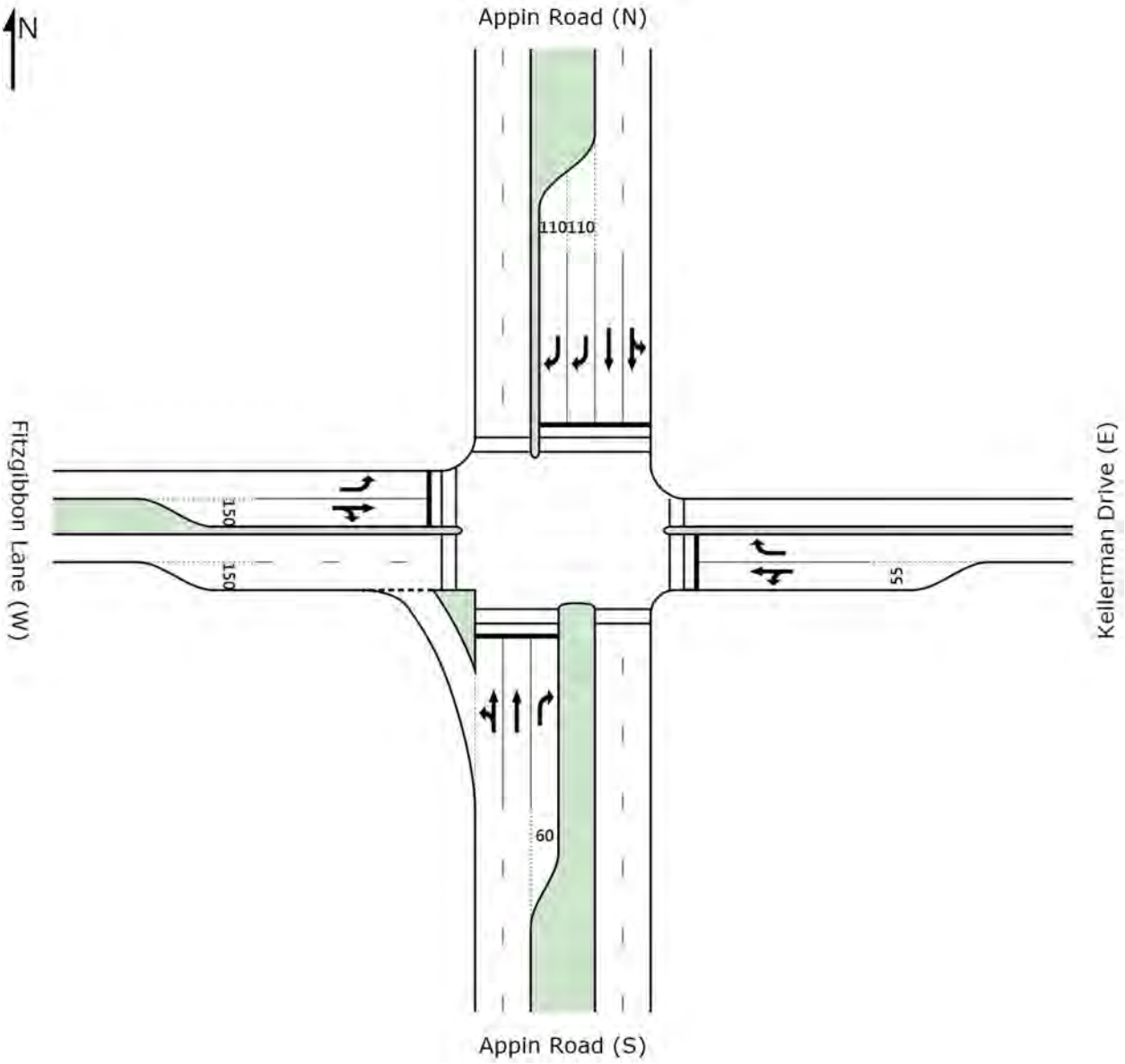
Mount Gilead TIA
I-02 Appin Road / Kellerman Drive / Copperfield Drive - Proposed upgrade layout
Ultimate year 2026 with 1700 dwellings development PM
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	43	4.9	0.370	8.8	LOS A	2.3	16.8	0.51	0.68	52.6
2	T	767	5.6	0.370	8.7	LOS A	2.3	16.8	0.51	0.63	53.3
3	R	21	0.0	0.370	13.3	LOS A	2.2	16.5	0.52	0.84	49.8
Approach		832	5.4	0.370	8.8	LOS A	2.3	16.8	0.51	0.64	53.2
East: Kellerman Drive (E)											
4	L	19	0.0	0.220	20.9	LOS B	1.1	8.2	0.91	0.97	41.3
5	T	144	5.8	0.668	27.6	LOS B	5.0	37.0	0.98	1.12	33.9
6	R	76	8.3	0.668	36.6	LOS C	5.0	37.0	1.00	1.15	32.6
Approach		239	6.2	0.668	29.9	LOS C	5.0	37.0	0.98	1.12	34.0
North: Appin Road (N)											
7	L	84	1.3	0.894	17.1	LOS B	20.8	147.9	1.00	0.89	49.5
8	T	2039	1.7	0.894	18.2	LOS B	20.8	147.9	1.00	0.93	50.2
9	R	52	6.1	0.894	23.8	LOS B	20.7	147.5	1.00	0.97	44.3
Approach		2175	1.7	0.894	18.3	LOS B	20.8	147.9	1.00	0.93	50.0
West: Copperfield Drive (W)											
10	L	51	0.0	0.432	10.9	LOS A	2.3	16.2	0.70	0.89	47.3
11	T	78	5.4	0.432	9.5	LOS A	2.3	16.2	0.70	0.85	46.7
12	R	182	2.3	0.432	16.9	LOS B	2.3	16.2	0.70	0.97	45.3
Approach		311	2.7	0.432	14.1	LOS A	2.3	16.2	0.70	0.93	45.9
All Vehicles		3556	3.0	0.894	16.5	LOS B	20.8	147.9	0.86	0.87	48.8

I-03 Intersection of Appin Road, Kellerman Drive and Fitzgibbon Lane

INTERSECTION LAYOUT – YEAR 2021



Year 2021 – Future conditions with development (850 dwellings)

MOVEMENT SUMMARY

Site: I-03 2021 850D AM - UP

Mount Gilead TIA
I-03 Appin Road / Kellerman Drive / Fitzgibbon Lane - Proposed upgrade layout
Ultimate year 2021 with 850 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	59	0.0	0.913	57.9	LOS E	52.9	381.1	0.96	1.03	27.5
2	T	1483	3.5	0.913	45.7	LOS D	52.9	381.1	0.96	0.97	30.5
3	R	3	0.0	0.015	63.0	LOS E	0.2	1.3	0.87	0.65	23.9
Approach		1545	3.4	0.913	46.2	LOS D	52.9	381.1	0.96	0.97	30.4
East: Kellerman Drive (E)											
4	L	6	0.0	0.741	84.1	LOS F	9.4	65.9	1.00	0.87	14.9
5	T	128	0.0	0.741	75.2	LOS F	9.4	65.9	1.00	0.87	14.2
6	R	155	0.7	0.902	91.1	LOS F	12.0	84.8	1.00	0.98	14.6
Approach		289	0.4	0.902	83.9	LOS F	12.0	84.8	1.00	0.93	14.4
North: Appin Road (N)											
7	L	78	1.4	0.359	32.6	LOS C	10.9	81.0	0.59	0.94	35.1
8	T	508	9.7	0.359	23.3	LOS B	10.9	81.0	0.57	0.49	39.2
9	R	365	0.3	0.690	69.8	LOS E	13.3	93.4	0.99	0.83	21.4
Approach		952	5.4	0.690	41.9	LOS C	13.3	93.4	0.73	0.66	29.8
West: Fitzgibbon Lane (W)											
10	L	526	1.4	0.911	74.5	LOS F	40.6	287.3	1.00	0.97	17.0
11	T	120	2.6	0.726	68.7	LOS E	10.2	73.5	1.00	0.86	15.0
12	R	27	3.8	0.726	77.7	LOS F	10.2	73.5	1.00	0.86	15.8
Approach		674	1.7	0.911	73.6	LOS F	40.6	287.3	1.00	0.95	16.6
All Vehicles		3460	3.4	0.913	53.5	LOS D	52.9	381.1	0.91	0.88	25.4

MOVEMENT SUMMARY

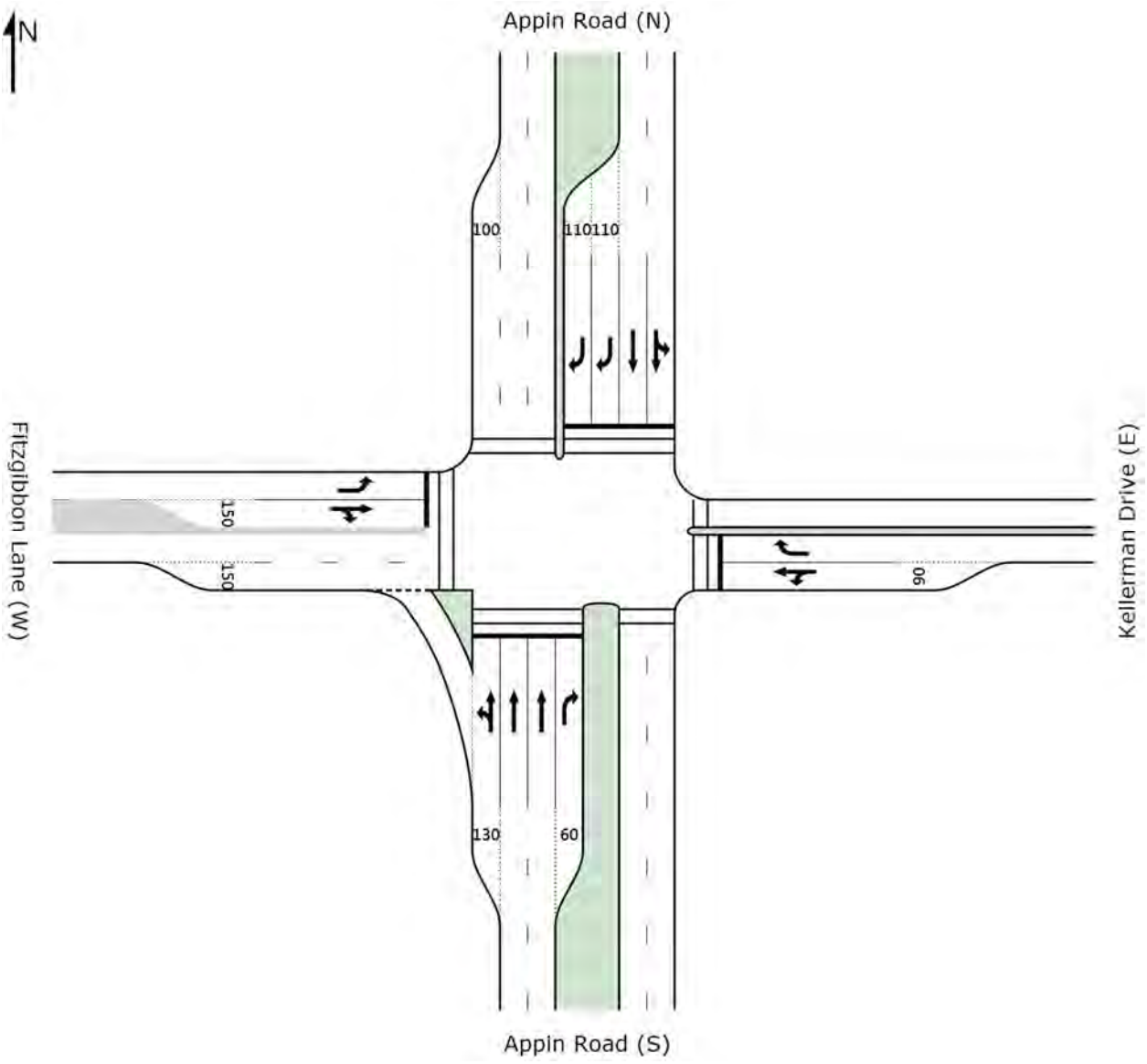
Site: I-03 2021 850D PM - UP

Mount Gilead TIA
I-03 Appin Road / Kellerman Drive / Fitzgibbon Lane - Proposed upgrade layout
Ultimate year 2021 with 850 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	22	0.0	0.423	45.4	LOS D	15.4	112.3	0.77	1.00	32.0
2	T	617	5.1	0.423	33.8	LOS C	15.5	113.5	0.77	0.67	36.2
3	R	2	0.0	0.026	81.6	LOS F	0.1	1.0	0.98	0.61	19.9
Approach		641	4.9	0.423	34.3	LOS C	15.5	113.5	0.77	0.68	36.0
East: Kellerman Drive (E)											
4	L	7	0.0	0.482	63.9	LOS E	5.8	40.8	0.92	0.80	18.3
5	T	89	0.0	0.482	54.9	LOS D	5.8	40.8	0.92	0.72	17.6
6	R	72	0.0	0.514	75.8	LOS F	4.8	33.9	0.99	0.78	16.8
Approach		168	0.0	0.514	64.2	LOS E	5.8	40.8	0.95	0.75	17.3
North: Appin Road (N)											
7	L	177	1.2	0.672	25.7	LOS B	34.7	246.3	0.68	0.98	40.1
8	T	1480	1.9	0.672	16.6	LOS B	35.0	249.0	0.68	0.63	43.9
9	R	448	0.5	0.565	37.3	LOS C	9.8	69.0	0.92	0.82	31.5
Approach		2105	1.6	0.672	21.8	LOS B	35.0	249.0	0.73	0.70	40.3
West: Fitzgibbon Lane (W)											
10	L	265	1.2	0.288	30.8	LOS C	10.4	73.4	0.62	0.80	30.0
11	T	117	2.7	0.665	62.4	LOS E	10.9	78.1	1.00	0.83	16.0
12	R	47	2.2	0.665	71.3	LOS F	10.9	78.1	1.00	0.84	16.8
Approach		429	1.7	0.665	43.9	LOS D	10.9	78.1	0.77	0.81	23.1
All Vehicles		3344	2.1	0.672	29.1	LOS C	35.0	249.0	0.76	0.71	35.2

INTERSECTION LAYOUT – YEAR 2026



Year 2026 – Future conditions with development (1500 dwellings)

MOVEMENT SUMMARY

Site: I-03 2026 1500D AM
Upgrade Layout Appin Set
Phase Time

Mount Gilead TIA
I-03 Appin Road / Kellerman Drive / Fitzgibbon Lane
Ultimate year 2026 with 1500 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	83	1.3	0.961	49.9	LOS D	29.5	212.2	0.82	1.00	29.9
2	T	1931	3.3	0.961	58.0	LOS E	59.6	429.3	0.96	1.01	26.5
3	R	3	0.0	0.034	80.4	LOS F	0.2	1.5	0.97	0.63	20.1
Approach		2017	3.2	0.961	57.7	LOS E	59.6	429.3	0.95	1.01	26.6
East: Kellerman Drive (E)											
4	L	6	0.0	0.392	48.4	LOS D	7.2	50.5	0.80	0.85	22.3
5	T	135	0.0	0.392	39.5	LOS C	7.2	50.5	0.80	0.65	21.9
6	R	162	0.6	0.972	117.4	LOS F	15.5	109.3	1.00	1.13	12.0
Approach		303	0.3	0.972	81.3	LOS F	15.5	109.3	0.91	0.91	14.8
North: Appin Road (N)											
7	L	82	1.3	0.400	31.7	LOS C	15.5	115.3	0.66	0.95	36.0
8	T	663	9.5	0.400	22.5	LOS B	15.5	117.0	0.66	0.58	39.5
9	R	384	0.3	0.967	73.7	LOS F	10.9	76.5	1.00	1.01	20.7
Approach		1129	5.8	0.967	40.6	LOS C	15.5	117.0	0.78	0.75	30.3
West: Fitzgibbon Lane (W)											
10	L	553	1.3	0.601	35.7	LOS C	26.6	188.0	0.77	0.85	27.6
11	T	126	2.5	0.344	43.3	LOS D	8.8	63.0	0.84	0.70	20.5
12	R	35	6.1	0.344	52.2	LOS D	8.8	63.0	0.84	0.84	21.2
Approach		714	1.8	0.601	37.9	LOS C	26.6	188.0	0.79	0.82	25.8
All Vehicles		4163	3.5	0.972	51.4	LOS D	59.6	429.3	0.87	0.90	26.3

MOVEMENT SUMMARY

Site: I-03 2026 1500D PM
Upgrade Layout Appin Set
Phase Time

Mount Gilead TIA
I-03 Appin Road / Kellerman Drive / Fitzgibbon Lane
Ultimate year 2026 with 1500 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	29	3.6	0.436	45.4	LOS D	10.3	75.5	0.77	0.96	31.8
2	T	774	5.4	0.436	36.2	LOS C	15.1	110.5	0.80	0.69	34.9
3	R	2	0.0	0.026	81.6	LOS F	0.1	1.0	0.98	0.61	19.9
Approach		805	5.4	0.436	36.7	LOS C	15.1	110.5	0.80	0.70	34.8
East: Kellerman Drive (E)											
4	L	7	0.0	0.323	62.0	LOS E	6.0	41.8	0.90	0.81	18.7
5	T	94	0.0	0.323	53.0	LOS D	6.0	41.8	0.90	0.72	18.1
6	R	75	0.0	0.504	74.0	LOS F	5.0	35.0	0.98	0.79	17.1
Approach		176	0.0	0.504	62.3	LOS E	6.0	41.8	0.94	0.75	17.6
North: Appin Road (N)											
7	L	185	1.1	0.875	33.4	LOS C	59.7	424.3	0.90	0.97	35.8
8	T	1925	2.0	0.875	24.2	LOS B	60.0	426.9	0.90	0.85	37.8
9	R	472	0.4	0.512	34.5	LOS C	8.5	59.6	0.89	0.81	32.9
Approach		2582	1.6	0.875	26.7	LOS B	60.0	426.9	0.90	0.85	36.7
West: Fitzgibbon Lane (W)											
10	L	279	1.1	0.279	27.4	LOS B	10.0	71.0	0.58	0.79	31.9
11	T	123	2.6	0.761	65.0	LOS E	13.5	96.6	1.00	0.89	15.5
12	R	72	2.9	0.761	73.8	LOS F	13.5	96.6	1.00	0.89	16.4
Approach		474	1.8	0.761	44.2	LOS D	13.5	96.6	0.75	0.83	23.0
All Vehicles		4037	2.3	0.875	32.3	LOS C	60.0	426.9	0.86	0.82	33.4

Year 2026 – Future conditions with development (1700 dwellings)

MOVEMENT SUMMARY

Site: I-03 2026 1700D AM
Upgrade Layout Appin Set
Phase Time

Mount Gilead TIA
I-03 Appin Road / Kellerman Drive / Fitzgibbon Lane
Ultimate year 2026 with 1700 dwellings development AM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	91	1.2	0.986	45.3	LOS D	29.6	212.2	0.82	0.98	31.9
2	T	2045	3.1	0.986	64.8	LOS E	69.2	497.2	0.96	1.06	24.8
3	R	3	0.0	0.040	82.0	LOS F	0.2	1.5	0.98	0.63	19.8
Approach		2139	3.1	0.986	64.0	LOS E	69.2	497.2	0.95	1.05	25.0
East: Kellerman Drive (E)											
4	L	6	0.0	0.396	49.2	LOS D	7.3	51.0	0.81	0.85	22.0
5	T	135	0.0	0.396	40.3	LOS C	7.3	51.0	0.81	0.65	21.6
6	R	162	0.6	0.997	130.4	LOS F	16.5	116.0	1.00	1.17	11.0
Approach		303	0.3	0.997	88.7	LOS F	16.5	116.0	0.91	0.94	13.9
North: Appin Road (N)											
7	L	82	1.3	0.398	29.9	LOS C	15.5	115.2	0.64	0.96	37.0
8	T	692	9.1	0.398	20.8	LOS B	15.5	116.8	0.64	0.56	40.8
9	R	384	0.3	0.967	74.3	LOS F	11.2	78.6	1.00	1.01	20.6
Approach		1158	5.6	0.967	39.2	LOS C	15.5	116.8	0.76	0.74	30.9
West: Fitzgibbon Lane (W)											
10	L	553	1.3	0.618	37.3	LOS C	27.3	193.5	0.79	0.86	26.9
11	T	126	2.5	0.361	45.0	LOS D	9.1	65.1	0.86	0.71	20.0
12	R	37	5.7	0.361	54.0	LOS D	9.1	65.1	0.86	0.83	20.7
Approach		716	1.8	0.618	39.5	LOS C	27.3	193.5	0.81	0.83	25.2
All Vehicles		4316	3.3	0.997	55.0	LOS D	69.2	497.2	0.87	0.92	25.3

MOVEMENT SUMMARY

Site: I-03 2026 1700D PM
Upgrade Layout Appin Set
Phase Time

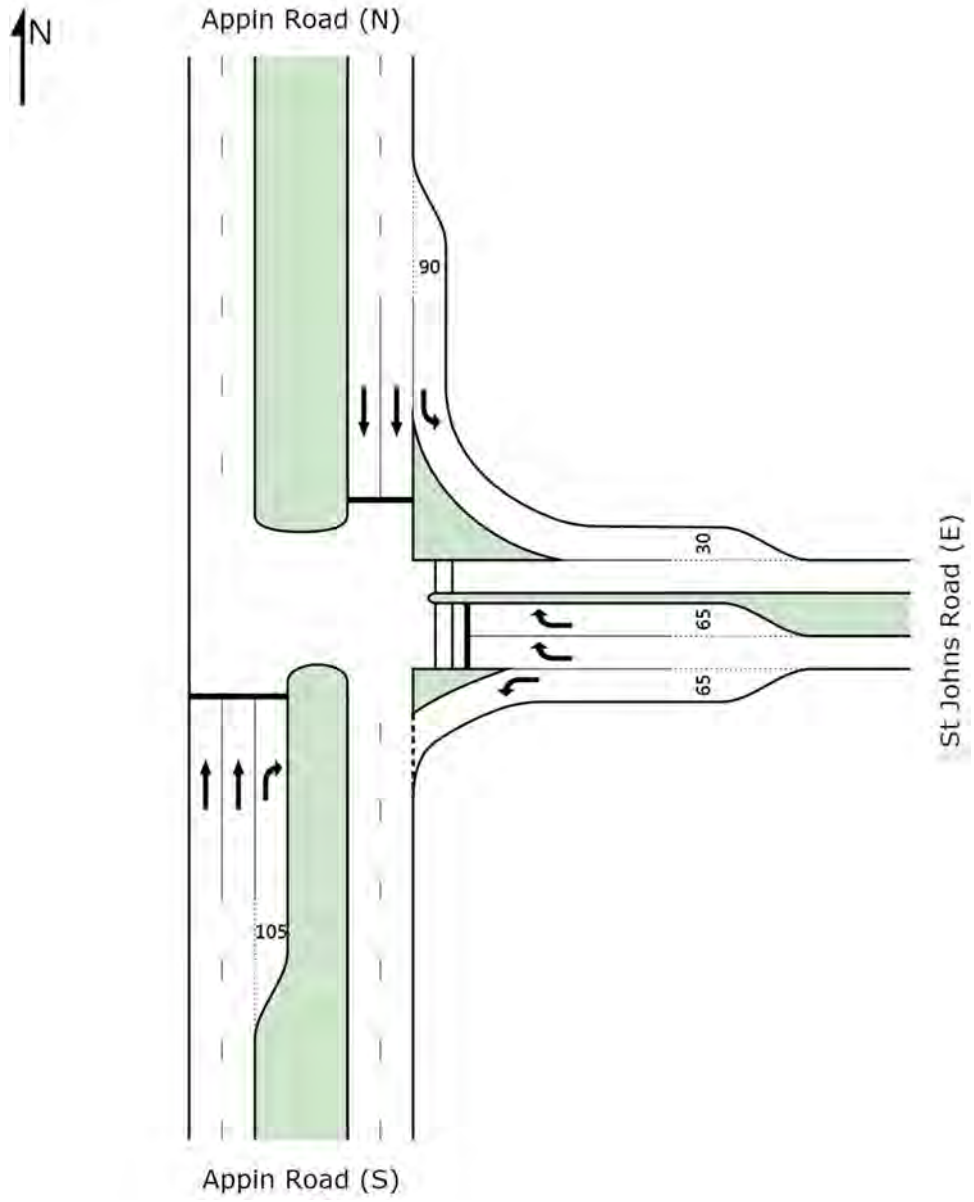
Mount Gilead TIA
I-03 Appin Road / Kellerman Drive / Fitzgibbon Lane
Ultimate year 2026 with 1700 dwellings development PM
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
1	L	32	3.3	0.437	43.8	LOS D	10.3	75.3	0.76	0.96	32.5
2	T	802	5.2	0.437	34.8	LOS C	15.5	113.4	0.79	0.68	35.7
3	R	2	0.0	0.026	81.6	LOS F	0.1	1.0	0.98	0.61	19.9
Approach		836	5.2	0.437	35.3	LOS C	15.5	113.4	0.79	0.69	35.5
East: Kellerman Drive (E)											
4	L	7	0.0	0.323	62.0	LOS E	6.0	41.8	0.90	0.81	18.7
5	T	94	0.0	0.323	53.0	LOS D	6.0	41.8	0.90	0.72	18.1
6	R	75	0.0	0.506	74.0	LOS F	5.0	35.0	0.98	0.79	17.1
Approach		176	0.0	0.506	62.3	LOS E	6.0	41.8	0.94	0.75	17.6
North: Appin Road (N)											
7	L	185	1.1	0.922	44.6	LOS D	75.6	537.1	0.97	1.01	30.4
8	T	2040	1.9	0.922	35.3	LOS C	76.0	540.3	0.97	0.97	31.9
9	R	472	0.4	0.509	35.7	LOS C	8.8	61.6	0.91	0.82	32.3
Approach		2697	1.6	0.922	36.0	LOS C	76.0	540.3	0.96	0.95	31.8
West: Fitzgibbon Lane (W)											
10	L	279	1.1	0.286	28.5	LOS C	10.4	73.3	0.59	0.79	31.2
11	T	123	2.6	0.802	67.4	LOS E	14.4	103.0	1.00	0.93	15.1
12	R	79	2.7	0.802	76.2	LOS F	14.4	103.0	1.00	0.93	16.0
Approach		481	1.8	0.802	46.3	LOS D	14.4	103.0	0.76	0.85	22.3
All Vehicles		4189	2.2	0.922	38.2	LOS C	76.0	540.3	0.90	0.88	30.7

I-05 Intersection of Appin Road and St Johns Road

INTERSECTION LAYOUT 1– YEAR 2026



Year 2026 – Future conditions with development (1500 dwellings)

MOVEMENT SUMMARY

Site: I-05 2026 1500D AM UP1

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Ultimate year 2026 with 1500 dwellings development AM UP
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	2476	3.1	0.839	2.7	LOS A	20.4	146.3	0.27	0.26	70.9
3	R	426	2.2	0.899	54.1	LOS D	24.0	171.4	0.88	0.89	26.6
Approach		2902	2.9	0.899	10.3	LOS A	24.0	171.4	0.36	0.35	58.1
East: St Johns Road (E)											
4	L	258	2.4	0.464	15.7	LOS B	5.5	39.3	0.40	0.72	42.2
6	R	413	1.0	0.879	84.5	LOS F	16.7	117.6	1.00	0.96	16.7
Approach		671	1.6	0.879	58.0	LOS E	16.7	117.6	0.77	0.87	21.8
North: Appin Road (N)											
7	L	237	3.1	0.130	11.2	X	X	X	X	0.69	58.9
8	T	924	6.9	0.889	61.1	LOS E	32.8	243.4	1.00	0.97	25.7
Approach		1161	6.2	0.889	50.9	LOS D	32.8	243.4	0.80	0.91	29.0
All Vehicles		4734	3.5	0.899	27.0	LOS B	32.8	243.4	0.52	0.56	40.2

MOVEMENT SUMMARY

Site: I-05 2026 1500D PM UP1

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Ultimate year 2026 with 1500 dwellings development PM UP
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	1116	3.7	0.354	1.0	LOS A	2.8	20.1	0.08	0.07	76.5
3	R	183	3.4	0.943	99.6	LOS F	15.1	109.1	1.00	1.00	17.2
Approach		1299	3.6	0.943	14.9	LOS B	15.1	109.1	0.21	0.20	53.3
East: St Johns Road (E)											
4	L	268	1.1	1.000 [3]	51.2	LOS D	15.0	106.2	0.92	0.82	23.7
6	R	284	0.4	0.975	109.9	LOS F	12.3	86.6	1.00	1.10	13.7
Approach		552	0.8	1.000	81.4	LOS F	15.0	106.2	0.96	0.96	17.2
North: Appin Road (N)											
7	L	371	1.7	0.202	11.2	X	X	X	X	0.69	58.8
8	T	2575	1.8	0.995	46.1	LOS D	112.4	798.9	1.00	1.14	30.4
Approach		2945	1.8	0.995	41.7	LOS C	112.4	798.9	0.87	1.09	32.4
All Vehicles		4796	2.2	1.000	39.0	LOS C	112.4	798.9	0.70	0.83	33.3

Year 2026 – Future conditions with development (1700 dwellings)

MOVEMENT SUMMARY

Site: I-05 2026 1700D AM UP1

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Ultimate year 2026 with 1700 dwellings development AM UP
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	2568	3.0	0.862	2.8	LOS A	23.7	169.7	0.30	0.29	70.1
3	R	443	2.1	0.925	52.6	LOS D	24.0	171.4	0.91	0.89	27.1
Approach		3012	2.8	0.925	10.2	LOS A	24.0	171.4	0.39	0.38	58.0
East: St Johns Road (E)											
4	L	262	2.4	0.479	16.0	LOS B	5.7	41.0	0.41	0.73	41.9
6	R	413	1.0	0.909	88.3	LOS F	16.9	119.4	1.00	0.98	16.2
Approach		675	1.6	0.909	60.2	LOS E	16.9	119.4	0.77	0.88	21.3
North: Appin Road (N)											
7	L	237	3.1	0.130	11.2	X	X	X	X	0.69	58.9
8	T	947	6.8	0.910	64.7	LOS E	35.0	259.1	1.00	1.00	24.8
Approach		1184	6.0	0.910	54.0	LOS D	35.0	259.1	0.80	0.94	28.0
All Vehicles		4871	3.4	0.925	27.8	LOS B	35.0	259.1	0.54	0.58	39.6

MOVEMENT SUMMARY

Site: I-05 2026 1700D PM UP1

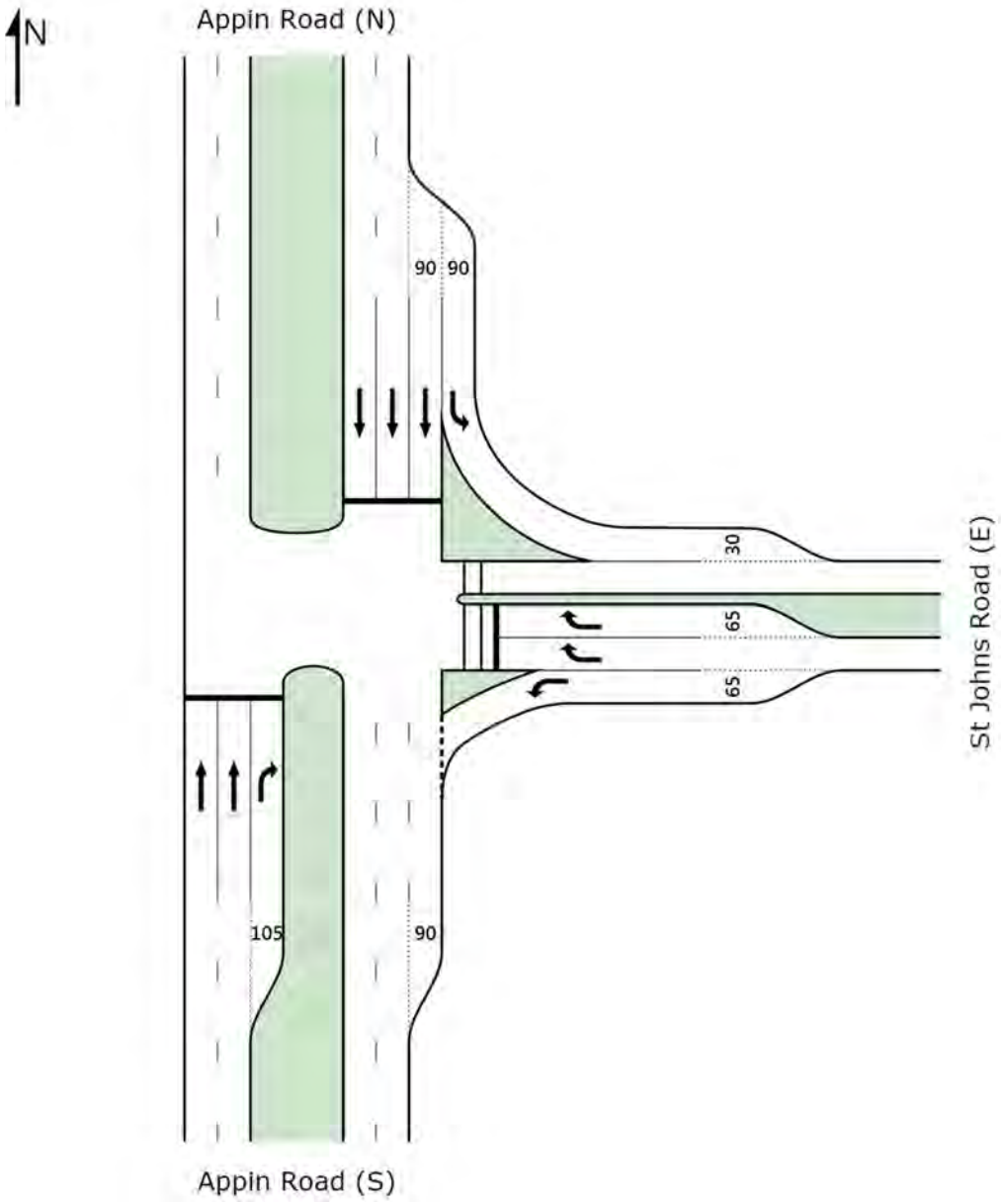
Mount Gilead TIA
I-05 Appin Road / St Johns Road
Ultimate year 2026 with 1700 dwellings development PM UP
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	1139	3.6	0.364	1.1	LOS A	2.9	20.8	0.08	0.08	76.4
3	R	187	3.4	1.033	142.1	LOS F	18.9	136.2	1.00	1.11	12.9
Approach		1326	3.6	1.033	21.0	LOS B	18.9	136.2	0.21	0.22	47.1
East: St Johns Road (E)											
4	L	263	1.0	1.000 [3]	54.3	LOS D	15.0	106.2	0.93	0.82	22.9
6	R	305	0.4	0.962	105.0	LOS F	13.0	91.1	1.00	1.08	14.2
Approach		568	0.7	1.000	81.5	LOS F	15.0	106.2	0.97	0.96	17.2
North: Appin Road (N)											
7	L	371	1.7	0.202	11.2	X	X	X	X	0.69	58.8
8	T	2667	1.8	1.030	70.3	LOS E	134.1	952.9	1.00	1.27	23.5
Approach		3038	1.8	1.030	63.1	LOS E	134.1	952.9	0.88	1.20	25.3
All Vehicles		4933	2.1	1.033	53.9	LOS D	134.1	952.9	0.71	0.91	27.6

3 x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

INTERSECTION LAYOUT 2– YEAR 2026



Year 2026 – Future conditions with development (1500 dwellings)

MOVEMENT SUMMARY

Site: I-05 2026 1500D AM UP2

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Ultimate year 2026 with 1500 dwellings development AM UP
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	2476	3.1	0.847	2.8	LOS A	21.1	151.9	0.28	0.27	70.6
3	R	426	2.2	0.864	53.2	LOS D	24.0	171.4	0.83	0.90	27.0
Approach		2902	2.9	0.864	10.2	LOS A	24.0	171.4	0.36	0.36	58.2
East: St Johns Road (E)											
4	L	258	2.4	0.421	14.1	LOS A	4.8	34.1	0.36	0.72	43.7
6	R	413	1.0	0.852	80.6	LOS F	16.5	116.5	1.00	0.94	17.4
Approach		671	1.6	0.852	55.0	LOS D	16.5	116.5	0.75	0.85	22.6
North: Appin Road (N)											
7	L	237	3.1	0.130	11.2	X	X	X	X	0.69	58.9
8	T	924	6.9	0.851	57.8	LOS E	26.3	195.4	0.96	0.89	26.6
Approach		1161	6.2	0.851	48.3	LOS D	26.3	195.4	0.77	0.84	30.0
All Vehicles		4734	3.5	0.864	25.9	LOS B	26.3	195.4	0.52	0.55	41.0

MOVEMENT SUMMARY

Site: I-05 2026 1500D PM UP2

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Ultimate year 2026 with 1500 dwellings development PM UP
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	1116	3.7	0.357	1.1	LOS A	2.8	20.2	0.08	0.07	76.4
3	R	183	3.4	0.832	82.3	LOS F	13.4	96.3	1.00	0.90	19.9
Approach		1299	3.6	0.832	12.5	LOS A	13.4	96.3	0.21	0.19	56.2
East: St Johns Road (E)											
4	L	287	1.1	0.768	27.7	LOS B	11.3	80.0	0.59	0.82	33.4
6	R	264	0.4	0.832	85.0	LOS F	9.8	68.5	1.00	0.92	16.7
Approach		552	0.8	0.832	55.1	LOS D	11.3	80.0	0.78	0.87	22.6
North: Appin Road (N)											
7	L	371	1.7	0.202	11.2	X	X	X	X	0.69	58.8
8	T	2575	1.8	0.849	8.5	LOS A	35.9	255.1	0.50	0.47	59.2
Approach		2945	1.8	0.849	8.9	LOS A	35.9	255.1	0.44	0.50	59.2
All Vehicles		4796	2.2	0.849	15.2	LOS B	35.9	255.1	0.42	0.46	50.9

Year 2026 – Future conditions with development (1700 dwellings)

MOVEMENT SUMMARY

Site: I-05 2026 1700D AM UP2

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Ultimate year 2026 with 1700 dwellings development AM UP
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	2568	3.0	0.870	2.9	LOS A	24.7	177.2	0.32	0.30	69.7
3	R	443	2.1	0.889	51.8	LOS D	24.0	171.4	0.87	0.89	27.4
Approach		3012	2.8	0.889	10.1	LOS A	24.7	177.2	0.40	0.39	57.9
East: St Johns Road (E)											
4	L	262	2.4	0.428	14.1	LOS A	4.9	34.7	0.36	0.72	43.7
6	R	413	1.0	0.879	84.4	LOS F	16.7	117.6	1.00	0.97	16.8
Approach		675	1.6	0.879	57.1	LOS E	16.7	117.6	0.75	0.87	22.1
North: Appin Road (N)											
7	L	237	3.1	0.130	11.2	X	X	X	X	0.69	58.9
8	T	947	6.8	0.872	59.6	LOS E	27.7	205.4	0.97	0.90	26.1
Approach		1184	6.0	0.872	49.9	LOS D	27.7	205.4	0.77	0.86	29.4
All Vehicles		4871	3.4	0.889	26.3	LOS B	27.7	205.4	0.54	0.57	40.6

MOVEMENT SUMMARY

Site: I-05 2026 1700D PM UP2

Mount Gilead TIA
I-05 Appin Road / St Johns Road
Ultimate year 2026 with 1700 dwellings development PM UP
Signals - Fixed Time Cycle Time = 140 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Appin Road (S)											
2	T	1139	3.6	0.380	1.3	LOS A	3.0	21.4	0.08	0.08	75.9
3	R	187	3.4	0.851	83.8	LOS F	13.9	99.9	1.00	0.91	19.6
Approach		1326	3.6	0.851	12.9	LOS A	13.9	99.9	0.21	0.20	55.7
East: St Johns Road (E)											
4	L	304	1.0	0.963	39.6	LOS C	15.0	106.1	0.79	0.84	27.7
6	R	264	0.4	0.587	73.3	LOS F	8.8	61.5	0.99	0.80	18.6
Approach		568	0.7	0.963	55.2	LOS D	15.0	106.1	0.89	0.82	22.6
North: Appin Road (N)											
7	L	371	1.7	0.202	11.2	X	X	X	X	0.69	58.8
8	T	2667	1.8	0.945	26.3	LOS B	73.0	518.9	0.79	0.82	40.7
Approach		3038	1.8	0.945	24.5	LOS B	73.0	518.9	0.70	0.80	42.3
All Vehicles		4933	2.1	0.963	24.9	LOS B	73.0	518.9	0.59	0.64	41.7